

vector007 Vector subtraction: Geometric approach  
 vector002 Finding the magnitude and direction of a vector given its graph  
 vector005 Finding the components of a vector given its graph  
 vector019 Finding the direction angle of a vector given in  $ai+bj$  form  
 vector018 Writing a vector given its magnitude and direction angle  
 vector020 Writing a vector to represent a force pushing or pulling an object  
 vector021 Finding the magnitude and direction angle of the resultant force of two vectors  
 vector011 Finding magnitudes of forces related to a sum of three vectors  
 vector012 Finding magnitudes of forces related to an object suspended by cables  
 vector023 Dot product of vectors given in  $ai+bj$  form  
 vector009 Dot product of vectors given in component form  
 pcalc730 Finding the angle between two vectors given in component form  
 vector024 Classifying vector relationships by finding the angle between two vectors given in  $ai + bj$  form  
 vector010 Using the dot product to find perpendicular vectors  
 vector006 Finding the component of a vector along another vector  
 vector025 Decomposing a vector into two orthogonal vectors  
 vector026 Finding the amount of work done given a force vector and a distance  
 vector027 Finding magnitudes of forces related to an object on a ramp  
 pcalc449 Plotting points in polar coordinates  
 pcalc450 Multiple representations of polar coordinates  
 pcalc056 Converting rectangular coordinates to polar coordinates: Special angles  
 pcalc451 Converting rectangular coordinates to polar coordinates: Decimal answers  
 pcalc057 Converting polar coordinates to rectangular coordinates  
 pcalc058 Converting an equation written in rectangular form to one written in polar form  
 pcalc452 Converting an equation written in polar form to one written in rectangular form: Problem type 1  
 pcalc453 Converting an equation written in polar form to one written in rectangular form: Problem type 2  
 pcalc454 Graphing a polar equation: Basic  
 pcalc455 Graphing a polar equation: Circle  
 pcalc456 Graphing a polar equation: Limacon  
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 pcalc459 Matching polar equations with their graphs  
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 pcalc472 Writing a complex number in trigonometric form: Special angles  
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 pcalc807 Finding the  $n$ th roots of a number: Problem type 1  
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 alge916 Solving a system of linear equations with fractional coefficients  
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 alge752 Solving a  $2 \times 2$  system of linear equations that is inconsistent or consistent dependent  
 alge077 Creating an inconsistent system of linear equations  
 alge988 Identifying the operations used to create equivalent systems of equations  
 pcalc099 Consistency and independence of a system of linear equations  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
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 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations

pcalc496 Introduction to solving a 3x3 system of linear equations  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 pcalc497 Solving a 3x3 system of linear equations: Problem type 2  
 pcalc498 Solving a 3x3 system of linear equations that is inconsistent or consistent dependent  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 pcalc549 Solving a word problem using a 3x3 system of linear equations: Problem type 2  
 pcalc037 Scalar multiplication of a matrix  
 pcalc038 Addition or subtraction of matrices  
 pcalc740 Linear combination of matrices  
 pcalc507 Squaring and multiplying 2x2 matrices  
 pcalc039 Multiplication of matrices: Basic  
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 pcalc503 Word problem involving multiplication of matrices  
 pcalc504 Finding the inverse of a 2x2 matrix  
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 pcalc042 Finding the determinant of a 2x2 matrix  
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 pcalc564 Completing Gauss-Jordan elimination with a 2x2 matrix  
 pcalc712 Gauss-Jordan elimination with a 2x2 matrix  
 pcalc500 Writing solutions to 3x3 systems of linear equations from augmented matrices  
 pcalc499 Completing Gauss-Jordan elimination with a 3x3 matrix  
 pcalc046 Solving a system of linear equations given its augmented matrix  
 pcalc502 Finding the inverse of a matrix to solve a 2x2 system of linear equations  
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 pcalc045 Using Cramer's rule to solve a 2x2 system of linear equations  
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 pcalc531 Introduction to partial fraction decomposition with distinct linear factors  
 pcalc812 Partial fraction decomposition with distinct linear factors  
 pcalc813 Partial fraction decomposition with repeated linear factors  
 pcalc814 Partial fraction decomposition with an irreducible quadratic factor  
 pcalc533 Partial fraction decomposition with repeated, irreducible quadratic factors  
 alge994 Graphically solving a system of linear and quadratic equations  
 pcalc716 Using a graphing calculator to solve a system of linear and quadratic equations: Basic  
 pcalc796 Using a graphing calculator to solve a system of equations  
 pcalc806 Using a graphing calculator to solve an exponential or logarithmic equation  
 alge995 Solving a system of linear and quadratic equations  
 pcalc098 Solving a system of nonlinear equations: Problem type 1  
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 pcalc535 Solving a word problem involving geometry using a system of nonlinear equations  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge315 Writing an inequality given its graph in the plane: Horizontal or vertical boundary line  
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 pcalc748 Graphing a quadratic inequality: Problem type 1  
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 pcalc536 Graphing an inequality involving a circle  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced  
 alge922 Graphing a system of three linear inequalities  
 pcalc096 Graphing a system of nonlinear inequalities: Problem type 1  
 alge729 Writing a multi-step inequality for a real-world situation  
 pcalc093 Solving a word problem using a system of linear inequalities: Problem type 1  
 pcalc537 Solving a word problem using a system of linear inequalities: Problem type 2  
 pcalc095 Linear programming  
 pcalc094 Solving a word problem using linear programming

### Conic Sections

pcalc566 Graphing a parabola of the form  $y^2 = ax$  or  $x^2 = ay$

pcalc575 Graphing a parabola of the form  $x=a(y-k)^2+h$  or  $y=a(x-h)^2+k$   
 pcalc067 Graphing a parabola of the form  $ay^2 + by + cx + d = 0$  or  $ax^2 + bx + cy + d = 0$   
 pcalc068 Writing an equation of a parabola given the vertex and the focus  
 pcalc475 Writing an equation of a parabola given the focus and the directrix  
 geom494 Deriving the equation of a parabola given its focus and directrix  
 pcalc476 Finding the vertex, focus, directrix, and axis of symmetry of a parabola  
 pcalc069 Finding the focus of a parabola of the form  $ay^2 + by + cx + d = 0$  or  $ax^2 + bx + cy + d = 0$   
 pcalc477 Writing an equation of a parabola given its graph  
 pcalc478 Word problem involving a parabola  
 pcalc734 Graphing an ellipse given its equation in standard form  
 pcalc070 Graphing an ellipse centered at the origin:  $Ax^2 + By^2 = C$   
 pcalc071 Graphing an ellipse given its equation in general form  
 pcalc479 Finding the center, vertices, and foci of an ellipse  
 pcalc072 Finding the foci of an ellipse given its equation in general form  
 pcalc074 Writing an equation of an ellipse given the center, an endpoint of an axis, and the length of the other axis  
 pcalc073 Writing an equation of an ellipse given the foci and the major axis length  
 pcalc097 Graphing a system of nonlinear inequalities: Problem type 2  
 pcalc480 Word problem involving an ellipse  
 pcalc735 Graphing a hyperbola given its equation in standard form  
 pcalc075 Graphing a hyperbola centered at the origin:  $Ax^2 - By^2 - C = 0$   
 pcalc076 Graphing a hyperbola given its equation in general form  
 pcalc481 Finding the center, vertices, foci, and asymptotes of a hyperbola  
 pcalc077 Finding the foci of a hyperbola given its equation in general form  
 pcalc078 Writing an equation of a hyperbola given the foci and the vertices  
 pcalc482 Writing an equation of a hyperbola given the foci and the asymptotes: Basic  
 pcalc079 Writing an equation of a hyperbola given the foci and the asymptotes: Advanced  
 pcalc736 Classifying conics given their equations  
 pcalc538 Completing a table and choosing a graph given a pair of parametric equations  
 pcalc539 Writing the equation of a line and sketching its graph given its parametric equations  
 pcalc540 Writing the equation of a parabola and sketching its graph given its parametric equations  
 pcalc541 Writing the equation of a circle or ellipse and sketching its graph given its parametric equations  
 pcalc542 Graphing a pair of parametric equations with a restricted domain: Line or parabola  
 pcalc563 Graphing a pair of parametric equations with a restricted domain: Circle  
 pcalc565 Graphing a pair of parametric equations with a restricted domain: Ellipse  
 pcalc544 Completing pairs of parametric equations  
 pcalc545 Word problem involving parametric equations for projectile motion: Problem type 1  
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### Sequences, Series, and Probability

alge644 Finding the first terms of an arithmetic sequence using an explicit rule  
 alge645 Finding the first terms of a geometric sequence using an explicit rule  
 pcalc080 Finding the first terms of a sequence using an explicit rule with multiple occurrences of  $n$   
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge908 Finding the first terms of a sequence using a recursive rule  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 pcalc715 Finding a specified term of an arithmetic sequence given two terms of the sequence  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge910 Writing a recursive rule for an arithmetic sequence  
 pcalc718 Sum of the first  $n$  terms of an arithmetic sequence  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc717 Finding a specified term of a geometric sequence given two terms of the sequence  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule

alge911 Writing recursive rules for arithmetic and geometric sequences  
 pcalc719 Sum of the first  $n$  terms of a geometric sequence  
 pcalc720 Sum of an infinite geometric series  
 alge965 Identifying linear, quadratic, and exponential functions given ordered pairs  
 pcalc082 Factorial expressions  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 mstat017 Computing permutations and combinations  
 pcalc809 Introduction to permutations and combinations  
 pcalc810 Permutations and combinations: Problem type 1  
 pcalc089 Permutations and combinations: Problem type 2  
 pcalc090 Permutations and combinations: Problem type 3  
 pcalc087 Binomial formula  
 mstat099 Determining a sample space and outcomes for a simple event  
 mstat100 Determining a sample space and outcomes for a compound event  
 mstat010 Probability of an event  
 mstat046 Experimental and theoretical probability  
 stat106 Outcomes and event probability  
 mstat116 Probabilities of a permutation and a combination  
 mstat011 Area as probability  
 stat850 Probability of independent events  
 stat851 Probability of dependent events  
 stat117 Probabilities of draws with replacement  
 stat118 Probabilities of draws without replacement  
 mstat042 Interpreting a Venn diagram of 2 sets  
 mstat043 Interpreting a Venn diagram of 3 sets  
 stat119 Venn diagrams: Two events  
 stat101 Venn diagrams: Word problems  
 stat112 Probabilities involving two dice  
 mstat115 Determining outcomes for compound events and complements of events  
 mstat109 Using a Venn diagram to understand the addition rule for probability  
 mstat108 Outcomes and event probability: Addition rule  
 stat114 Probability of intersection or union: Word problems  
 mstat104 Identifying independent events given values of probabilities  
 stat115 Independent events: Basic  
 stat120 Probability of union: Basic  
 mstat110 Using a Venn diagram to understand the multiplication rule for probability  
 mstat107 Outcomes and event probability: Conditional probability  
 mstat105 Computing conditional probability using a two-way frequency table  
 mstat106 Computing conditional probability to make an inference using a two-way frequency table  
 stat116 Conditional probability: Basic  
 stat109 Intersection and conditional probability  
 stat174 Binomial problems: Basic  
 stat155 Binomial problems: Advanced  
 mstat114 Using a random number table to make a fair decision

### Limits and Continuity

pcalc901 Estimating a limit numerically  
 pcalc902 Finding limits from a graph  
 pcalc905 Finding a limit by using the limit laws: Problem type 1  
 pcalc904 Finding limits for a piecewise-defined function  
 pcalc906 Finding a limit by using the limit laws: Problem type 2  
 pcalc907 Finding a limit by using the limit laws: Problem type 3  
 pcalc911 Squeeze Theorem  
 pcalc903 Determining points of discontinuity from a graph  
 pcalc914 Determining a parameter to make a function continuous  
 pcalc915 Infinite limits and graphs  
 pcalc910 Limits at infinity and graphs

pcalc908 Limits at infinity and rational functions  
pcalc909 Infinite limits and rational functions  
pcalc913 Finding a limit of a trigonometric function by using continuity  
pcalc912 Finding a limit by using special trigonometric limits

## B.44 PreCalculus for College Readiness

### Algebra and Geometry Review

arith687 Fractional position on a number line  
arith605 Plotting rational numbers on a number line  
arith691 Ordering integers  
arith602 Estimating a square root  
arith712 Ordering real numbers  
alge001 Identifying numbers as integers or non-integers  
alge002 Identifying numbers as rational or irrational  
arith116 Signed fraction addition or subtraction: Basic  
arith864 Signed fraction subtraction involving double negation  
arith106 Signed fraction addition or subtraction: Advanced  
arith811 Addition and subtraction of 3 fractions involving signs  
arith822 Signed fraction multiplication: Basic  
arith105 Signed fraction multiplication: Advanced  
arith814 Signed fraction division  
arith104 Operations with absolute value: Problem type 2  
alge694 Computing the distance between two integers on a number line  
arith702 Exponents and integers: Problem type 1  
arith703 Exponents and integers: Problem type 2  
arith704 Exponents and signed fractions  
arith118 Order of operations with integers  
arith600 Order of operations with integers and exponents  
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
alge004 Evaluating a quadratic expression: Integers  
alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
mstat065 Converting between temperatures in Fahrenheit and Celsius  
alge187 Properties of addition  
alge188 Properties of real numbers  
alge604 Distributive property: Integer coefficients  
alge608 Using distribution and combining like terms to simplify: Univariate  
alge667 Identifying properties used to simplify an algebraic expression  
alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
alge821 Understanding the product rule of exponents  
alge024 Introduction to the product rule of exponents  
alge311 Product rule with positive exponents: Univariate  
alge030 Product rule with positive exponents: Multivariate  
arith029 Ordering numbers with positive exponents  
alge826 Understanding the power rules of exponents  
alge306 Introduction to the power of a power rule of exponents  
alge305 Introduction to the power of a product rule of exponents  
alge307 Power rules with positive exponents: Multivariate products  
alge308 Power rules with positive exponents: Multivariate quotients  
alge756 Power and product rules with positive exponents  
alge451 Simplifying a ratio of multivariate monomials: Basic  
alge827 Introduction to the quotient rule of exponents  
alge452 Simplifying a ratio of univariate monomials  
alge026 Quotient of expressions involving exponents  
alge453 Simplifying a ratio of multivariate monomials: Advanced  
alge927 Power and quotient rules with positive exponents  
alge790 Evaluating expressions with exponents of zero

arith729 Evaluating an expression with a negative exponent: Whole number base  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge961 Introduction to the product rule with negative exponents  
 alge028 Product rule with negative exponents  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge926 Quotient rule with negative exponents: Problem type 2  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge928 Power and quotient rules with negative exponents: Problem type 1  
 alge929 Power and quotient rules with negative exponents: Problem type 2  
 alge757 Power, product, and quotient rules with negative exponents  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent  
 scinot012 Converting between scientific notation and standard form in a real-world situation  
 scinot008 Multiplying numbers written in scientific notation: Basic  
 scinot009 Multiplying numbers written in scientific notation: Advanced  
 scinot019 Multiplying numbers written in decimal form or scientific notation in a real-world situation  
 scinot010 Dividing numbers written in scientific notation: Basic  
 scinot011 Dividing numbers written in scientific notation: Advanced  
 scinot013 Finding the scale factor between numbers given in scientific notation in a real-world situation  
 alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge932 Simplifying a sum or difference of multivariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge081 Multiplying conjugate binomials: Multivariate  
 alge032 Squaring a binomial: Univariate  
 alge068 Squaring a binomial: Multivariate  
 alge973 Multiplying binomials with negative coefficients  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 arith034 Prime numbers  
 arith035 Prime factorization  
 arith033 Greatest common factor of 2 numbers  
 alge605 Factoring a linear binomial  
 alge736 Introduction to the GCF of two monomials  
 alge930 Greatest common factor of three univariate monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge949 Factoring out a binomial from a polynomial: GCF factoring, basic  
 alge923 Factoring a univariate polynomial by grouping: Problem type 1  
 alge950 Factoring a univariate polynomial by grouping: Problem type 2  
 alge951 Factoring a multivariate polynomial by grouping: Problem type 1  
 alge952 Factoring a multivariate polynomial by grouping: Problem type 2  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge942 Factoring a quadratic in two variables with leading coefficient 1  
 alge936 Factoring out a constant before factoring a quadratic  
 alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1  
 alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
 alge941 Factoring a quadratic with leading coefficient greater than 1: Problem type 3  
 alge978 Factoring a quadratic by the ac-method



alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
alge937 Factoring a quadratic with a negative leading coefficient  
alge944 Factoring a perfect square trinomial with leading coefficient 1  
alge945 Factoring a perfect square trinomial with leading coefficient greater than 1  
alge946 Factoring a perfect square trinomial in two variables  
alge290 Factoring a difference of squares in one variable: Basic  
alge947 Factoring a difference of squares in one variable: Advanced  
alge839 Factoring a difference of squares in two variables  
alge948 Factoring a polynomial involving a GCF and a difference of squares: Univariate  
alge833 Factoring a polynomial involving a GCF and a difference of squares: Multivariate  
alge041 Factoring a product of a quadratic trinomial and a monomial  
alge042 Factoring with repeated use of the difference of squares formula  
alge044 Factoring a sum or difference of two cubes  
pcalc577 Factoring out binomials from a polynomial: GCF factoring, advanced  
pcalc578 Using substitution to factor polynomials  
alge049 Restriction on a variable in a denominator: Linear  
alge454 Simplifying a ratio of factored polynomials: Linear factors  
alge455 Simplifying a ratio of factored polynomials: Factors with exponents  
alge456 Simplifying a ratio of polynomials using GCF factoring  
alge457 Simplifying a ratio of linear polynomials: 1, -1, and no simplification  
alge458 Simplifying a ratio of polynomials by factoring a quadratic with leading coefficient 1  
alge710 Simplifying a ratio of polynomials: Problem type 1  
alge682 Simplifying a ratio of polynomials: Problem type 2  
alge459 Simplifying a ratio of polynomials: Problem type 3  
alge034 Simplifying a ratio of multivariate polynomials  
alge053 Multiplying rational expressions involving multivariate monomials  
alge460 Multiplying rational expressions made up of linear expressions  
alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
alge461 Multiplying rational expressions involving quadratics with leading coefficients greater than 1  
alge462 Multiplying rational expressions involving multivariate quadratics  
alge054 Dividing rational expressions involving multivariate monomials  
alge463 Dividing rational expressions involving linear expressions  
alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
alge464 Dividing rational expressions involving quadratics with leading coefficients greater than 1  
alge465 Dividing rational expressions involving multivariate quadratics  
alge466 Multiplication and division of 3 rational expressions  
arith070 Least common multiple of 2 numbers  
arith804 Least common multiple of 3 numbers  
alge737 Introduction to the LCM of two monomials  
alge055 Least common multiple of two monomials  
alge427 Finding the LCD of rational expressions with linear denominators: Relatively prime  
alge428 Finding the LCD of rational expressions with linear denominators: Common factors  
alge429 Finding the LCD of rational expressions with quadratic denominators  
alge430 Writing equivalent rational expressions with monomial denominators  
alge431 Writing equivalent rational expressions with polynomial denominators  
alge304 Writing equivalent rational expressions involving opposite factors  
alge432 Introduction to adding fractions with variables and common denominators  
alge433 Adding rational expressions with common denominators and monomial numerators  
alge056 Adding rational expressions with common denominators and binomial numerators  
alge434 Adding rational expressions with common denominators and GCF factoring  
alge435 Adding rational expressions with common denominators and quadratic factoring  
alge436 Adding rational expressions with different denominators and a single occurrence of a variable  
alge437 Adding rational expressions with denominators  $ax$  and  $bx$ : Basic  
alge438 Adding rational expressions with denominators  $ax$  and  $bx$ : Advanced  
alge439 Adding rational expressions with denominators  $axn$  and  $bxm$   
alge440 Adding rational expressions with multivariate monomial denominators: Basic  
alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
alge441 Adding rational expressions with linear denominators without common factors: Basic  
alge442 Adding rational expressions with linear denominators without common factors: Advanced  
alge443 Adding rational expressions with linear denominators with common factors: Basic  
alge444 Adding rational expressions with linear denominators with common factors: Advanced  
alge445 Adding rational expressions with denominators  $ax-b$  and  $b-ax$

alge661 Adding rational expressions involving different quadratic denominators  
alge446 Adding 3 rational expressions with different quadratic denominators  
arith695 Complex fraction without variables: Problem type 1  
arith696 Complex fraction without variables: Problem type 2  
alge470 Complex fraction involving univariate monomials  
alge058 Complex fraction involving multivariate monomials  
alge471 Complex fraction: GCF factoring  
alge472 Complex fraction: Quadratic factoring  
alge473 Complex fraction made of sums involving rational expressions: Problem type 1  
alge474 Complex fraction made of sums involving rational expressions: Problem type 2  
alge475 Complex fraction made of sums involving rational expressions: Problem type 3  
alge476 Complex fraction made of sums involving rational expressions: Problem type 4  
alge477 Complex fraction made of sums involving rational expressions: Problem type 5  
alge478 Complex fraction made of sums involving rational expressions: Problem type 6  
alge479 Complex fraction made of sums involving rational expressions: Multivariate  
alge480 Complex fraction with negative exponents: Problem type 1  
alge481 Complex fraction with negative exponents: Problem type 2  
alge162 Complex fraction that contains a complex fraction  
alge413 Finding all square roots of a number  
arith601 Square root of a rational perfect square  
arith760 Square roots of perfect squares with signs  
arith761 Square roots of integers raised to even exponents  
alge415 Introduction to simplifying a radical expression with an even exponent  
alge264 Square root of a perfect square monomial  
alge603 Introduction to solving an absolute value equation  
alge537 Using absolute value to simplify square roots of perfect square monomials  
arith094 Cube root of an integer  
alge549 Finding nth roots of perfect nth powers with signs  
arith768 Finding the nth root of a perfect nth power fraction  
alge550 Finding the nth root of a perfect nth power monomial  
alge538 Using absolute value to simplify higher radical expressions  
alge812 Converting between radical form and exponent form  
alge560 Rational exponents: Unit fraction exponents and whole number bases  
alge561 Rational exponents: Unit fraction exponents and bases involving signs  
alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
alge251 Rational exponents: Negative exponents and fractional bases  
alge558 Rational exponents: Product rule  
alge559 Rational exponents: Quotient rule  
alge773 Rational exponents: Products and quotients with negative exponents  
alge562 Rational exponents: Power of a power rule  
alge249 Rational exponents: Powers of powers with negative exponents  
arith093 Simplifying the square root of a whole number less than 100  
arith762 Simplifying the square root of a whole number greater than 100  
alge080 Simplifying a radical expression with an even exponent  
alge520 Introduction to simplifying a radical expression with an odd exponent  
alge521 Simplifying a radical expression with an odd exponent  
alge275 Simplifying a radical expression with two variables  
alge273 Simplifying a higher root of a whole number  
alge551 Introduction to simplifying a higher radical expression  
alge552 Simplifying a higher radical expression: Univariate  
alge811 Simplifying a higher radical expression: Multivariate  
arith767 Introduction to square root addition or subtraction  
arith032 Square root addition or subtraction  
alge533 Square root addition or subtraction with three terms  
alge531 Introduction to simplifying a sum or difference of radical expressions: Univariate  
alge532 Simplifying a sum or difference of radical expressions: Univariate  
alge084 Simplifying a sum or difference of radical expressions: Multivariate  
alge554 Simplifying a sum or difference of higher roots  
alge555 Simplifying a sum or difference of higher radical expressions  
arith764 Introduction to square root multiplication  
arith765 Square root multiplication: Basic  
arith039 Square root multiplication: Advanced



alge522 Introduction to simplifying a product of radical expressions: Univariate  
 alge523 Simplifying a product of radical expressions: Univariate  
 alge640 Simplifying a product of radical expressions: Multivariate  
 alge082 Simplifying a product of radical expressions: Multivariate, fractional expressions  
 alge556 Introduction to simplifying a product of higher roots  
 alge557 Simplifying a product of higher radical expressions  
 alge525 Introduction to simplifying a product involving square roots using the distributive property  
 alge526 Simplifying a product involving square roots using the distributive property: Basic  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge984 Classifying sums and products as rational or irrational  
 arith766 Simplifying a quotient of square roots  
 alge530 Simplifying a quotient involving a sum or difference with a square root  
 alge527 Rationalizing a denominator: Quotient involving square roots  
 alge528 Rationalizing a denominator: Square root of a fraction  
 alge529 Rationalizing a denominator: Quotient involving a monomial  
 alge534 Rationalizing a denominator using conjugates: Integer numerator  
 alge535 Rationalizing a denominator using conjugates: Square root in numerator  
 alge536 Rationalizing a denominator using conjugates: Variable in denominator  
 alge564 Rationalizing a denominator: Quotient involving a higher radical  
 alge775 Rationalizing a denominator: Quotient involving higher radicals and monomials  
 alge563 Simplifying products or quotients of higher radicals with different indices: Univariate  
 alge776 Simplifying products or quotients of higher radicals with different indices: Multivariate  
 geom340 Area of a piecewise rectangular figure  
 geom142 Word problem involving the area between two rectangles  
 geom801 Area of a triangle  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom016 Circumference of a circle  
 geom301 Perimeter involving rectangles and circles  
 geom802 Circumference and area of a circle  
 geom477 Circumference and area of a circle: Exact answers in terms of pi  
 geom302 Area involving rectangles and circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom311 Volume of a rectangular prism  
 geom090 Volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom035 Volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom622 Volume of a cone  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom841 Volume of a sphere  
 geom031 Surface area of a cube or a rectangular prism  
 geom091 Surface area of a triangular prism  
 geom621 Surface area of a cylinder  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom842 Surface area of a sphere  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem

### Equations and Inequalities

alge836 Additive property of equality with signed fractions  
 alge012 Multiplicative property of equality with signed fractions  
 alge837 Solving a multi-step equation given in fractional form  
 alge986 Identifying properties used to solve a linear equation  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution

alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
 alge208 Solving a two-step equation with signed fractions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge840 Solving a proportion of the form  $(x+a)\div b = c\div d$   
 alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
 alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
 alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
 alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
 alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
 alge518 Solving for a variable inside parentheses in terms of other variables  
 alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
 alge016 Translating a sentence into a one-step equation  
 alge841 Translating a sentence into a multi-step equation  
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge792 Solving a word problem with three unknowns using a linear equation  
 alge842 Solving a word problem involving consecutive integers  
 alge730 Writing a multi-step equation for a real-world situation  
 alge794 Solving a value mixture problem using a linear equation  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 alge796 Solving a distance, rate, time problem using a linear equation  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom838 Circumference ratios  
 geom530 Solving equations involving vertical angles  
 geom628 Finding angle measures of a triangle given angles with variables  
 stat803 Finding the value for a new score that will yield a given mean  
 arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
 arith847 Finding the sale price given the original price and percent discount  
 arith848 Finding the total cost including tax or markup  
 arith031 Finding the original price given the sale price and percent discount  
 arith854 Computing a percent mixture  
 alge795 Solving a percent mixture problem using a linear equation  
 arith232 Finding simple interest without a calculator  
 arith514 Converting a repeating decimal to a fraction  
 alge864 Solving an absolute value equation: Problem type 1  
 alge865 Solving an absolute value equation: Problem type 2  
 alge866 Solving an absolute value equation: Problem type 3  
 alge867 Solving an absolute value equation: Problem type 4  
 alge167 Solving an absolute value equation of the form  $-ax+b = -cx+d$   
 alge845 Translating a sentence into a one-step inequality  
 alge846 Translating a sentence into a multi-step inequality  
 alge748 Writing an inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line  
 set001 Set builder notation  
 set004 Set builder and interval notation  
 set002 Union and intersection of finite sets

set005 Union and intersection of intervals  
alge844 Identifying solutions to a two-step linear inequality in one variable  
alge852 Additive property of inequality with signed fractions  
alge964 Multiplicative property of inequality with signed fractions  
alge855 Solving a two-step linear inequality: Problem type 1  
alge856 Solving a two-step linear inequality: Problem type 2  
alge857 Solving a two-step linear inequality with a fractional coefficient  
alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
alge860 Solving inequalities with no solution or all real numbers as solutions  
alge746 Solving a compound linear inequality: Graph solution, basic  
alge747 Solving a compound linear inequality: Interval notation  
alge749 Solving a decimal word problem using a two-step linear inequality  
alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
alge868 Solving an absolute value inequality: Problem type 1  
alge943 Writing an absolute value inequality given a graph on the number line  
alge869 Solving an absolute value inequality: Problem type 2  
alge870 Solving an absolute value inequality: Problem type 3  
alge871 Solving an absolute value inequality: Problem type 4  
alge872 Solving an absolute value inequality: Problem type 5  
alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
alge421 Solving a rational equation that simplifies to linear: Denominators  $ax$  and  $bx$   
alge422 Solving a rational equation that simplifies to linear: Like binomial denominators  
alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
alge508 Solving for a variable in terms of other variables in a rational equation: Problem type 1  
alge509 Solving for a variable in terms of other variables in a rational equation: Problem type 2  
alge510 Solving for a variable in terms of other variables in a rational equation: Problem type 3  
arith610 Word problem on proportions: Problem type 1  
arith611 Word problem on proportions: Problem type 2  
geom037 Similar polygons  
geom038 Similar right triangles  
geom337 Indirect measurement  
geom133 Ratio of volumes  
arith612 Word problem involving multiple rates  
alge770 Solving a work problem using a rational equation  
alge450 Solving a distance, rate, time problem using a rational equation  
alge059 Ordering fractions with variables  
alge778 Using  $i$  to rewrite square roots of negative numbers  
alge779 Simplifying a product and quotient involving square roots of negative numbers  
pcalc048 Adding or subtracting complex numbers  
pcalc049 Multiplying complex numbers  
pcalc050 Dividing complex numbers  
pcalc053 Simplifying a power of  $i$   
alge681 Solving an equation written in factored form  
alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
alge045 Finding the roots of a quadratic equation with leading coefficient 1  
alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
alge211 Solving a quadratic equation needing simplification  
alge046 Roots of a product of polynomials  
alge163 Writing a quadratic equation given the roots and the leading coefficient  
alge703 Solving a word problem using a quadratic equation with rational roots  
alge713 Using the Pythagorean Theorem and a quadratic equation to find side lengths of a right triangle  
alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
alge227 Solving a quadratic equation using the square root property: Exact answers, advanced  
alge094 Completing the square  
alge780 Solving a quadratic equation by completing the square: Exact answers  
alge095 Applying the quadratic formula: Exact answers

alge963 Applying the quadratic formula: Decimal answers  
 pcalc051 Solving a quadratic equation with complex roots  
 alge214 Discriminant of a quadratic equation  
 alge193 Discriminant of a quadratic equation with parameter  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge093 Solving an equation using the odd-root property: Problem type 1  
 alge228 Solving an equation using the odd-root property: Problem type 2  
 alge467 Restriction on a variable in a denominator: Quadratic  
 alge423 Solving a rational equation that simplifies to linear: Factorable quadratic denominator  
 alge424 Solving a rational equation that simplifies to quadratic: Proportional form, basic  
 alge425 Solving a rational equation that simplifies to quadratic: Denominator  $x$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 alge426 Solving a rational equation that simplifies to quadratic: Factorable quadratic denominator  
 alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced  
 alge400 Introduction to solving a radical equation  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge402 Solving a radical equation that simplifies to a linear equation: One radical, advanced  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge403 Solving a radical equation that simplifies to a quadratic equation: One radical, basic  
 alge404 Solving a radical equation that simplifies to a quadratic equation: One radical, advanced  
 alge411 Solving a radical equation with a quadratic expression under the radical  
 alge405 Solving a radical equation with two radicals that simplifies to  $\sqrt{x} = a$   
 alge182 Solving a radical equation that simplifies to a quadratic equation: Two radicals  
 alge412 Algebraic symbol manipulation with radicals  
 alge542 Word problem involving radical equations: Basic  
 alge409 Word problem involving radical equations: Advanced  
 alge410 Solving an equation with a root index greater than 2: Problem type 1  
 alge417 Solving an equation with a root index greater than 2: Problem type 2  
 alge416 Solving an equation with exponent  $1/a$ : Problem type 1  
 alge418 Solving an equation with exponent  $1/a$ : Problem type 2  
 alge230 Solving an equation with positive rational exponent  
 alge231 Solving an equation with negative rational exponent  
 alge781 Solving an equation that can be written in quadratic form: Problem type 1  
 alge782 Solving an equation that can be written in quadratic form: Problem type 2

## Graphs and Functions

alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 arith405 Naming the quadrant or axis of a point given its coordinates  
 arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
 geom437 Finding the area of a triangle or parallelogram in the coordinate plane  
 alge850 Table for a linear equation  
 alge132 Distance between two points in the plane: Exact answers  
 alge324 Distance between two points in the plane: Decimal answers  
 geom323 Identifying scalene, isosceles, and equilateral triangles given coordinates of their vertices  
 alge191 Midpoint of a line segment in the plane  
 alge414 Finding an endpoint of a line segment given the other endpoint and the midpoint  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
 alge924 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Basic  
 alge210 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Advanced  
 alge197 Graphing a line given its  $x$ - and  $y$ -intercepts

alge881 Graphing a line by first finding its x- and y-intercepts  
pcalc750 Finding intercepts of a nonlinear function given its graph  
pcalc678 Finding x- and y-intercepts of the graph of a nonlinear equation  
alge913 Graphing an absolute value equation of the form  $y = A|x - h| + k$   
alge954 Graphing a parabola of the form  $y = ax^2$   
alge955 Graphing a parabola of the form  $y = ax^2 + c$   
alge262 Graphing a cubic function of the form  $y = ax^3$   
pcalc416 Determining if graphs have symmetry with respect to the x-axis, y-axis, or origin  
pcalc679 Testing an equation for symmetry about the axes and origin  
alge875 Classifying slopes given graphs of lines  
alge886 Finding slope given the graph of a line on a grid  
alge887 Finding slope given two points on the line  
alge885 Finding the slope of horizontal and vertical lines  
alge888 Finding the coordinate that yields a given slope  
alge259 Graphing a line given its slope and y-intercept  
alge196 Graphing a line through a given point with a given slope  
alge876 Identifying linear equations: Advanced  
alge874 Identifying linear functions given ordered pairs  
alge891 Rewriting a linear equation in the form  $Ax + By = C$   
alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
alge882 Graphing a line by first finding its slope and y-intercept  
alge258 Writing an equation of a line given its slope and y-intercept  
alge892 Writing an equation and graphing a line given its slope and y-intercept  
alge314 Finding the slope, y-intercept, and equation for a linear function given a table of values  
alge893 Writing an equation in slope-intercept form given the slope and a point  
alge318 Finding the slope and a point on a line given its equation in point-slope form  
alge883 Graphing a line given its equation in point-slope form  
alge894 Writing an equation in point-slope form given the slope and a point  
alge313 Writing an equation in standard form given the slope and a point  
alge070 Writing an equation of a line given the y-intercept and another point  
alge072 Writing the equation of the line through two given points  
alge073 Writing the equations of vertical and horizontal lines through a given point  
alge322 Comparing linear functions to the parent function  $y = x$   
geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
alge895 Identifying parallel and perpendicular lines from equations  
geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
geom462 Identifying parallel and perpendicular lines from coordinates  
geom322 Identifying coordinates that give right triangles  
alge897 Writing and evaluating a function that models a real-world situation: Advanced  
alge654 Graphing ordered pairs and writing an equation from a table of values in context  
alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
alge817 Finding the initial amount and rate of change given a table for a linear function  
alge818 Finding the initial amount and rate of change given a graph of a linear function  
alge992 Combining functions to write a new function that models a real-world situation  
alge987 Comparing properties of linear functions given in different forms  
alge989 Interpreting the parameters of a linear function that models a real-world situation  
alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
alge806 Application problem with a linear function: Finding a coordinate given two points  
alge991 Solving a linear equation by graphing  
mstat094 Constructing a scatter plot  
mstat030 Sketching the line of best fit  
mstat023 Scatter plots and correlation  
mstat068 Predictions from the line of best fit  
mstat067 Approximating the equation of a line of best fit and making predictions  
mstat069 Computing residuals  
mstat070 Interpreting residual plots  
mstat093 Classifying linear and nonlinear relationships from scatter plots  
mstat071 Linear relationship and the correlation coefficient  
mstat096 Identifying outliers and clustering in scatter plots  
mstat095 Finding outliers in a data set

alge914 Identifying solutions to a system of linear equations  
 alge725 Graphically solving a system of linear equations  
 pcalc820 Using a graphing calculator to solve a system of linear equations: Basic  
 pcalc821 Using a graphing calculator to solve a system of linear equations: Advanced  
 alge317 Writing a system of linear equations given its graph  
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 geom496 Identifying the center and radius to graph a circle given its equation in standard form  
 geom497 Identifying the center and radius to graph a circle given its equation in general form: Basic  
 geom668 Identifying the center and radius to graph a circle given its equation in general form: Advanced  
 geom499 Writing the equation of a circle centered at the origin given its radius or a point on the circle  
 geom495 Writing an equation of a circle and identifying points that lie on the circle  
 geom498 Writing an equation of a circle given its center and radius or diameter  
 geom493 Deriving the equation of a circle using the Pythagorean Theorem  
 pcalc065 Writing an equation of a circle given its center and a point on the circle  
 pcalc066 Writing an equation of a circle given the endpoints of a diameter  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 alge468 Evaluating a rational function: Problem type 1  
 alge469 Evaluating a rational function: Problem type 2  
 alge539 Table for a square root function  
 alge546 Evaluating a cube root function  
 pcalc682 Evaluating functions: Absolute value, rational, radical  
 fun030 Evaluating a piecewise-defined function  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 pcalc571 Variable expressions as inputs of functions: Problem type 2  
 pcalc411 Variable expressions as inputs of functions: Problem type 3  
 fun016 Domain and range from ordered pairs  
 alge715 Domain of a rational function: Excluded values  
 pcalc412 Domain of a rational function: Interval notation  
 alge540 Domain of a square root function: Basic  
 pcalc763 Domain of a square root function: Advanced  
 alge547 Domains of higher root functions  
 pcalc754 Finding the domain of a fractional function involving radicals  
 pcalc924 Determining whether an equation defines a function: Basic  
 pcalc757 Determining whether an equation defines a function: Advanced  
 alge294 Finding outputs of a one-step function that models a real-world situation: Function notation  
 alge295 Finding outputs of a two-step function with decimals that models a real-world situation: Function notation  
 alge296 Finding inputs and outputs of a two-step function that models a real-world situation: Function notation  
 alge990 Domain and range of a linear function that models a real-world situation  
 pcalc471 Rewriting a multivariate function as a univariate function given a relationship between its variables  
 pcalc753 Finding a difference quotient for a linear or quadratic function  
 pcalc414 Finding a difference quotient for a rational function  
 fun026 Finding an output of a function from its graph  
 pcalc761 Finding inputs and outputs of a function from its graph  
 fun007 Domain and range from the graph of a discrete relation  
 alge312 Finding domain and range from a linear graph in context  
 fun024 Domain and range from the graph of a continuous function  
 fun025 Domain and range from the graph of a piecewise function  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 pcalc751 Finding where a function is increasing, decreasing, or constant given the graph: Interval notation  
 pcalc752 Finding local maxima and minima of a function given the graph  
 pcalc439 Finding the absolute maximum and minimum of a function given the graph  
 pcalc417 Finding values and intervals where the graph of a function is zero, positive, or negative  
 mstat018 Choosing a graph to fit a narrative: Basic  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge896 Graphing an integer function and finding its range for a given domain  
 alge570 Graphing a function of the form  $f(x) = ax + b$ : Integer slope



alge571 Graphing a function of the form  $f(x) = ax + b$ : Fractional slope  
alge900 Graphing an absolute value equation in the plane: Basic  
alge168 Graphing an absolute value equation in the plane: Advanced  
alge572 Graphing a function of the form  $f(x) = ax^2$   
alge573 Graphing a function of the form  $f(x) = ax^2 + c$   
alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
alge543 Graphing a square root function: Problem type 1  
alge544 Graphing a square root function: Problem type 2  
alge545 Graphing a square root function: Problem type 3  
alge548 Graphing a cube root function  
pcalc443 Matching parent graphs with their equations  
fun031 Graphing a piecewise-defined function: Problem type 1  
pcalc444 Graphing a piecewise-defined function: Problem type 2  
pcalc568 Graphing a piecewise-defined function: Problem type 3  
pcalc114 Even and odd functions: Problem type 1  
pcalc440 Even and odd functions: Problem type 2  
pcalc768 Finding the average rate of change of a function  
alge998 Finding the average rate of change of a function given its graph  
pcalc442 Word problem involving average rate of change  
pcalc441 Writing the equation of a secant line  
pcalc467 Translating the graph of a parabola: One step  
pcalc465 Translating the graph of a parabola: Two steps  
alge723 How the leading coefficient affects the shape of a parabola  
pcalc468 Translating the graph of an absolute value function: One step  
alge899 Translating the graph of an absolute value function: Two steps  
alge901 How the leading coefficient affects the graph of an absolute value function  
alge185 Writing an equation for a function after a vertical translation  
pcalc469 Translating the graph of a function: One step  
pcalc770 Translating the graph of a function: Two steps  
pcalc569 Transforming the graph of a function by reflecting over an axis  
pcalc470 Transforming the graph of a function by shrinking or stretching  
pcalc570 Transforming the graph of a function using more than one transformation  
pcalc466 Transforming the graph of a quadratic, cubic, square root, or absolute value function  
fun020 Writing an equation for a function after a vertical and horizontal translation  
fun019 Sum, difference, and product of two functions  
alge786 Quotient of two functions: Basic  
pcalc413 Quotient of two functions: Advanced  
pcalc756 Combining functions: Advanced  
alge716 Introduction to the composition of two functions  
fun022 Composition of two functions: Basic  
pcalc484 Composition of a function with itself  
pcalc776 Expressing a function as a composition of two functions  
fun021 Composition of two functions: Domain and range  
alge129 Composition of two functions: Advanced  
pcalc483 Composition of two rational functions  
pcalc485 Word problem involving composition of two functions  
fun011 Horizontal line test  
pcalc777 Determining whether two functions are inverses of each other  
fun012 Inverse functions: Linear, discrete  
pcalc573 Inverse functions: Quadratic, square root  
pcalc572 Inverse functions: Cubic, cube root  
alge130 Inverse functions: Rational  
pcalc486 Graphing the inverse of a function given its graph  
pcalc487 Finding, evaluating, and interpreting an inverse function for a given linear relationship

### Polynomial and Rational Functions

alge974 Finding the vertex, x-intercepts, and axis of symmetry from the graph of a parabola  
alge569 Graphing a parabola of the form  $y = x^2 + bx + c$   
pcalc574 Graphing a parabola of the form  $y = a(x-h)^2 + k$

pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients  
 alge323 Finding the zeros of a quadratic function given its equation  
 pcalc714 Using a graphing calculator to find the zeros of a quadratic function  
 alge320 Writing a quadratic function given its zeros  
 alge277 Finding the x-intercept(s) and the vertex of a parabola  
 pcalc793 Using a graphing calculator to find the x-intercept(s) and vertex of a quadratic function  
 alge319 Rewriting a quadratic function in standard form  
 pcalc550 Rewriting a quadratic function to find its vertex and sketch its graph  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 pcalc551 Word problem involving optimizing area by using a quadratic function  
 pcalc415 Domain and range from the graph of a quadratic function  
 pcalc762 Range of a quadratic function  
 pcalc680 Writing the equation of a quadratic function given its graph  
 alge957 Solving a quadratic equation by graphing  
 alge996 Comparing properties of quadratic functions given in different forms  
 alge702 Classifying the graph of a function  
 mstat102 Choosing a quadratic model and using it to make a prediction  
 pcalc546 Identifying polynomial functions  
 pcalc764 Finding zeros of a polynomial function written in factored form  
 pcalc547 Finding zeros and their multiplicities given a polynomial function written in factored form  
 pcalc766 Finding a polynomial of a given degree with given zeros: Real zeros  
 pcalc765 Finding x- and y-intercepts given a polynomial function  
 pcalc782 Determining the end behavior of the graph of a polynomial function  
 pcalc548 Determining end behavior and intercepts to graph a polynomial function  
 pcalc783 Matching graphs with polynomial functions  
 pcalc738 Inferring properties of a polynomial function from its graph  
 pcalc794 Using a graphing calculator to find local extrema of a polynomial function  
 pcalc115 Using a graphing calculator to solve a word problem involving a local extremum of a polynomial function  
 alge759 Dividing a polynomial by a monomial: Univariate  
 alge760 Dividing a polynomial by a monomial: Multivariate  
 alge761 Polynomial long division: Problem type 1  
 alge762 Polynomial long division: Problem type 2  
 alge763 Polynomial long division: Problem type 3  
 pcalc117 Synthetic division  
 pcalc786 Using the remainder theorem to evaluate a polynomial  
 pcalc787 The Factor Theorem  
 pcalc118 Remainder theorem: Advanced  
 alge985 Closure properties of integers and polynomials  
 pcalc741 Using a given zero to write a polynomial as a product of linear factors: Real zeros  
 pcalc758 Finding all possible rational zeros using the rational zeros theorem: Problem type 1  
 pcalc759 Finding all possible rational zeros using the rational zeros theorem: Problem type 2  
 pcalc788 Descartes' Rule of Signs  
 pcalc743 Using the rational zeros theorem to find all zeros of a polynomial: Rational zeros  
 pcalc744 Using the rational zeros theorem to find all zeros of a polynomial: Irrational zeros  
 pcalc795 Using a graphing calculator to find zeros of a polynomial function  
 pcalc704 Using a graphing calculator to solve a word problem involving a polynomial of degree 3  
 pcalc785 Multiplying expressions involving complex conjugates  
 pcalc767 Finding a polynomial of a given degree with given zeros: Complex zeros  
 pcalc742 Using a given zero to write a polynomial as a product of linear factors: Complex zeros  
 pcalc745 Using the rational zeros theorem to find all zeros of a polynomial: Complex zeros  
 pcalc703 Using the conjugate zeros theorem to find all zeros of a polynomial  
 pcalc705 Linear factors theorem and conjugate zeros theorem  
 pcalc552 Finding the intercepts, asymptotes, domain, and range from the graph of a rational function  
 pcalc917 Finding the asymptotes of a rational function: Constant over linear  
 pcalc918 Finding the asymptotes of a rational function: Linear over linear  
 pcalc790 Finding horizontal and vertical asymptotes of a rational function: Quadratic numerator or denominator  
 pcalc562 Finding the asymptotes of a rational function: Quadratic over linear  
 alge515 Graphing a rational function: Constant over linear  
 alge516 Graphing a rational function: Linear over linear

pcalc553 Transforming the graph of a rational function  
 pcalc109 Graphing a rational function: Quadratic over linear  
 pcalc792 Graphing rational functions with holes  
 pcalc791 Matching graphs with rational functions: Two vertical asymptotes  
 pcalc557 Graphing a rational function with more than one vertical asymptote  
 pcalc706 Writing the equation of a rational function given its graph  
 pcalc556 Using a graphing calculator to solve a word problem involving a local extremum of a rational function  
 alge784 Solving a quadratic inequality written in factored form  
 alge771 Solving a quadratic inequality  
 pcalc558 Solving a polynomial inequality: Problem type 1  
 pcalc560 Solving a polynomial inequality: Problem type 2  
 pcalc561 Solving a polynomial inequality: Problem type 3  
 pcalc559 Solving a polynomial inequality: Problem type 4  
 alge783 Solving a rational inequality: Problem type 1  
 pcalc677 Solving a rational inequality: Problem type 2  
 alge982 Identifying direct variation equations  
 alge938 Identifying direct variation from ordered pairs and writing equations  
 alge904 Writing a direct variation equation  
 alge175 Word problem on direct variation  
 alge828 Interpreting direct variation from a graph  
 alge905 Writing an inverse variation equation  
 alge903 Identifying direct and inverse variation equations  
 alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
 alge176 Word problem on inverse variation  
 alge220 Word problem on inverse proportions  
 pcalc681 Writing an equation that models variation  
 alge772 Word problem on combined variation

### Exponential and Logarithmic Functions

alge971 Table for an exponential function  
 pcalc488 Graphing an exponential function:  $f(x)=bx$   
 pcalc489 Graphing an exponential function:  $f(x) = a(b)x$   
 pcalc567 Graphing an exponential function:  $f(x)=b-x$  or  $f(x)=-bax$   
 pcalc922 Translating the graph of an exponential function  
 alge321 Finding domain and range from the graph of an exponential function  
 pcalc797 The graph, domain, and range of an exponential function  
 pcalc490 Transforming the graph of a natural exponential function  
 pcalc103 Graphing an exponential function and its asymptote:  $f(x) = a(e)x-b + c$   
 pcalc491 Using a calculator to evaluate exponential expressions  
 alge830 Evaluating an exponential function that models a real-world situation  
 pcalc555 Using a calculator to evaluate exponential expressions involving base  $e$   
 pcalc919 Evaluating an exponential function with base  $e$  that models a real-world situation  
 arith853 Introduction to compound interest  
 arith910 Calculating and comparing simple interest and compound interest  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest  
 alge966 Finding the initial amount and rate of change given an exponential function  
 alge968 Writing an equation that models exponential growth or decay  
 alge967 Writing an exponential function rule given a table of ordered pairs  
 mstat103 Choosing an exponential model and using it to make a prediction  
 alge993 Comparing linear, polynomial, and exponential functions  
 pcalc492 Using a calculator to evaluate natural and common logarithmic expressions  
 pcalc493 Converting between logarithmic and exponential equations  
 pcalc494 Converting between natural logarithmic and exponential equations  
 pcalc495 Evaluating logarithmic expressions  
 alge233 Solving an equation of the form  $\log_b a = c$   
 pcalc923 Translating the graph of a logarithmic function  
 alge788 Graphing a logarithmic function: Basic  
 pcalc800 The graph, domain, and range of a logarithmic function

pcalc801 Domain of a logarithmic function: Advanced  
 pcalc104 Graphing a logarithmic function: Advanced  
 pcalc708 Basic properties of logarithms  
 pcalc511 Using properties of logarithms to evaluate expressions  
 pcalc779 Expanding a logarithmic expression: Problem type 1  
 pcalc521 Expanding a logarithmic expression: Problem type 2  
 pcalc522 Expanding a logarithmic expression: Problem type 3  
 alge787 Writing an expression as a single logarithm  
 pcalc612 Change of base for logarithms: Problem type 1  
 pcalc613 Change of base for logarithms: Problem type 2  
 pcalc513 Solving a multi-step equation involving a single logarithm: Problem type 1  
 pcalc510 Solving a multi-step equation involving a single logarithm: Problem type 2  
 pcalc804 Solving a multi-step equation involving natural logarithms  
 alge113 Solving an equation involving logarithms on both sides: Problem type 1  
 pcalc805 Solving an equation involving logarithms on both sides: Problem type 2  
 alge301 Solving an exponential equation by finding common bases: Linear exponents  
 alge482 Solving an exponential equation by finding common bases: Linear and quadratic exponents  
 pcalc920 Solving an exponential equation by using logarithms: Decimal answers, basic  
 pcalc921 Solving an exponential equation by using natural logarithms: Decimal answers  
 pcalc523 Solving an exponential equation by using logarithms: Decimal answers, advanced  
 alge111 Solving an exponential equation by using logarithms: Exact answers in logarithmic form  
 pcalc802 Solving an exponential equation by using substitution and quadratic factoring  
 alge178 Finding the time to reach a limit in a word problem on exponential growth or decay  
 pcalc524 Finding the time in a word problem on compound interest  
 pcalc508 Finding the time given an exponential function with base  $e$  that models a real-world situation  
 pcalc525 Finding the final amount in a word problem on continuous compound interest  
 pcalc527 Finding the initial amount in a word problem on continuous compound interest  
 pcalc526 Finding the final amount in a word problem on continuous exponential growth or decay  
 pcalc615 Finding the rate or time in a word problem on continuous exponential growth or decay  
 pcalc528 Finding half-life or doubling time  
 pcalc529 Writing and evaluating a function modeling continuous exponential growth or decay given doubling time or half-life  
 pcalc530 Writing and evaluating a function modeling continuous exponential growth or decay given two outputs

### Trigonometric Functions

pcalc001 Converting degrees-minutes-seconds to decimal degrees  
 pcalc661 Converting a decimal degree to degrees-minutes-seconds  
 pcalc002 Converting between degree and radian measure: Problem type 1  
 pcalc621 Converting between degree and radian measure: Problem type 2  
 pcalc006 Sketching an angle in standard position  
 pcalc622 Coterminal angles  
 pcalc005 Arc length and central angle measure  
 pcalc623 Area of a sector of a circle  
 pcalc624 Angular and linear speed  
 pcalc627 Finding coordinates on the unit circle for special angles  
 pcalc625 Finding a point on the unit circle given one coordinate  
 pcalc629 Trigonometric functions and special angles: Problem type 1  
 pcalc628 Finding trigonometric ratios from a point on the unit circle  
 pcalc630 Trigonometric functions and special angles: Problem type 2  
 pcalc631 Trigonometric functions and special angles: Problem type 3  
 pcalc409 Evaluating expressions involving sine and cosine  
 pcalc427 Even and odd properties of trigonometric functions  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc408 Using a calculator to approximate cosecant, secant, and cotangent values  
 pcalc410 Evaluating a sinusoidal function that models a real-world situation  
 geom506 Special right triangles: Exact answers  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio

pcalc008 Finding trigonometric ratios given a right triangle  
 geom317 Understanding trigonometric ratios through similar right triangles  
 geom316 Relationship between the sines and cosines of complementary angles  
 geom318 Using similar right triangles to find trigonometric ratios  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc642 Solving a right triangle  
 pcalc473 Using trigonometry to find a length in a word problem with two right triangles  
 pcalc626 Reference angles: Problem type 1  
 pcalc632 Reference angles: Problem type 2  
 pcalc671 Determining the location of a terminal point given the signs of trigonometric values  
 pcalc011 Finding values of trigonometric functions given information about an angle: Problem type 1  
 pcalc012 Finding values of trigonometric functions given information about an angle: Problem type 2  
 pcalc013 Finding values of trigonometric functions given information about an angle: Problem type 3  
 pcalc426 Finding values of trigonometric functions given information about an angle: Problem type 4  
 pcalc445 Sketching the graph of  $y = a \sin(x)$  or  $y = a \cos(x)$   
 pcalc446 Sketching the graph of  $y = \sin(bx)$  or  $y = \cos(bx)$   
 pcalc447 Sketching the graph of  $y = \sin(x) + d$  or  $y = \cos(x) + d$   
 pcalc448 Sketching the graph of  $y = \sin(x+c)$  or  $y = \cos(x+c)$   
 pcalc107 Sketching the graph of  $y = a \sin(x+c)$  or  $y = a \cos(x+c)$   
 pcalc106 Sketching the graph of  $y = a \sin(bx)$  or  $y = a \cos(bx)$   
 pcalc014 Sketching the graph of  $y = a \sin(bx+c)$  or  $y = a \cos(bx+c)$   
 pcalc438 Sketching the graph of  $y = a \sin(bx) + d$  or  $y = a \cos(bx) + d$   
 pcalc633 Amplitude and period of sine and cosine functions  
 pcalc634 Amplitude, period, and phase shift of sine and cosine functions  
 pcalc635 Writing the equation of a sine or cosine function given its graph: Problem type 1  
 pcalc636 Writing the equation of a sine or cosine function given its graph: Problem type 2  
 pcalc640 Word problem involving a sine or cosine function: Problem type 1  
 pcalc641 Word problem involving a sine or cosine function: Problem type 2  
 pcalc474 Sketching a graph of a damped sine or cosine function  
 pcalc428 Domains and ranges of trigonometric functions  
 pcalc637 Matching graphs and equations for secant, cosecant, tangent, and cotangent functions  
 pcalc017 Sketching the graph of a secant or cosecant function: Problem type 1  
 pcalc638 Sketching the graph of a secant or cosecant function: Problem type 2  
 pcalc105 Sketching the graph of a tangent or cotangent function: Problem type 1  
 pcalc015 Sketching the graph of a tangent or cotangent function: Problem type 2  
 pcalc016 Values of inverse trigonometric functions  
 pcalc018 Composition of a trigonometric function with its inverse trigonometric function: Problem type 1  
 pcalc419 Composition of a trigonometric function with its inverse trigonometric function: Problem type 2  
 pcalc420 Composition of a trigonometric function with the inverse of another trigonometric function: Problem type 1  
 pcalc421 Composition of a trigonometric function with the inverse of another trigonometric function: Problem type 2  
 pcalc036 Composition of a trigonometric function with the inverse of another trigonometric function: Problem type 3  
 pcalc423 Composition of trigonometric functions with variable expressions as inputs: Problem type 1  
 pcalc422 Composition of trigonometric functions with variable expressions as inputs: Problem type 2  
 pcalc418 Using a calculator to approximate inverse trigonometric values

### Trigonometric Identities and Equations

pcalc648 Simplifying trigonometric expressions  
 pcalc666 Using cofunction identities  
 pcalc110 Verifying a trigonometric identity  
 pcalc034 Proving trigonometric identities: Problem type 1  
 pcalc404 Proving trigonometric identities: Problem type 2  
 pcalc405 Proving trigonometric identities: Problem type 3  
 pcalc429 Proving trigonometric identities: Problem type 4

pcalc406 Proving trigonometric identities using odd and even properties  
 pcalc029 Sum and difference identities: Problem type 1  
 pcalc663 Sum and difference identities: Problem type 2  
 pcalc664 Sum and difference identities: Problem type 3  
 pcalc430 Sum and difference identities: Problem type 4  
 pcalc431 Proving trigonometric identities using sum and difference properties: Problem type 1  
 pcalc432 Proving trigonometric identities using sum and difference properties: Problem type 2  
 pcalc030 Double-angle identities: Problem type 1  
 pcalc667 Double-angle identities: Problem type 2  
 pcalc434 Double-angle identities: Problem type 3  
 pcalc437 Power-reducing identities  
 pcalc662 Half-angle identities: Problem type 1  
 pcalc665 Half-angle identities: Problem type 2  
 pcalc124 Product-to-sum and sum-to-product identities: Problem type 1  
 pcalc674 Product-to-sum and sum-to-product identities: Problem type 2  
 pcalc402 Proving trigonometric identities using double-angle properties  
 pcalc436 Proving trigonometric identities using sum-to-product formulas  
 pcalc650 Finding solutions in an interval for a basic equation involving sine or cosine  
 pcalc651 Finding solutions in an interval for a basic tangent, cotangent, secant, or cosecant equation  
 pcalc660 Solving a basic trigonometric equation using a calculator  
 pcalc020 Solving a basic trigonometric equation involving sine or cosine  
 pcalc021 Solving a basic trigonometric equation involving tangent, cotangent, secant, or cosecant  
 pcalc670 Finding solutions in an interval for a trigonometric equation in factored form  
 pcalc652 Finding solutions in an interval for a trigonometric equation with a squared function: Problem type 1  
 pcalc653 Finding solutions in an interval for a trigonometric equation with a squared function: Problem type 2  
 pcalc654 Finding solutions in an interval for a trigonometric equation using Pythagorean identities: Problem type 1  
 pcalc424 Finding solutions in an interval for a trigonometric equation using Pythagorean identities: Problem type 2  
 pcalc657 Finding solutions in an interval for an equation with sine and cosine using double-angle identities  
 pcalc668 Solving a trigonometric equation modeling a real-world situation  
 pcalc811 Using a graphing calculator to solve a trigonometric equation  
 pcalc127 Using a graphing calculator to solve a trigonometric inequality  
 pcalc022 Solving a trigonometric equation involving a squared function: Problem type 1  
 pcalc023 Solving a trigonometric equation involving a squared function: Problem type 2  
 pcalc024 Solving a trigonometric equation involving more than one function  
 pcalc025 Solving a trigonometric equation involving an angle multiplied by a constant  
 pcalc655 Finding solutions in an interval for a trigonometric equation with an angle multiplied by a constant  
 pcalc656 Finding solutions in an interval for an equation with sine and cosine using sum and difference identities  
 pcalc026 Solving a trigonometric equation using sum and difference identities  
 pcalc027 Solving a trigonometric equation using double-angle identities  
 pcalc028 Solving a trigonometric equation using half-angle identities

### Additional Topics in Trigonometry

pcalc031 Solving a triangle with the law of sines: Problem type 1  
 pcalc032 Solving a triangle with the law of sines: Problem type 2  
 pcalc644 Solving a word problem using the law of sines  
 geom320 Proving the law of sines  
 pcalc033 Solving a triangle with the law of cosines  
 geom409 Proving the law of cosines  
 pcalc645 Solving a word problem using the law of cosines  
 geom439 Using trigonometry to find the area of a right triangle  
 pcalc646 Finding the area of a triangle using trigonometry  
 geom319 Expressing the area of a triangle in terms of the sine of one of its angles  
 pcalc647 Heron's formula  
 vector028 Writing a position vector in  $a\mathbf{i}+b\mathbf{j}$  form given its graph  
 vector014 Writing a vector in  $a\mathbf{i}+b\mathbf{j}$  form given its initial and terminal points  
 vector013 Writing a vector in component form given its initial and terminal points  
 vector015 Magnitude of a vector given in  $a\mathbf{i}+b\mathbf{j}$  form



pcalc060 Magnitude of a vector given in component form  
 vector016 Vector addition and scalar multiplication:  $a_i + b_j$  form  
 vector017 Linear combination of vectors:  $a_i + b_j$  form  
 geom856 Vector addition and scalar multiplication: Component form  
 vector008 Linear combination of vectors: Component form  
 pcalc729 Unit vectors  
 pcalc739 Multiplication of a vector by a scalar: Geometric approach  
 geom857 Vector addition: Geometric approach  
 vector007 Vector subtraction: Geometric approach  
 vector002 Finding the magnitude and direction of a vector given its graph  
 vector005 Finding the components of a vector given its graph  
 vector019 Finding the direction angle of a vector given in  $a_i + b_j$  form  
 vector018 Writing a vector given its magnitude and direction angle  
 vector020 Writing a vector to represent a force pushing or pulling an object  
 vector021 Finding the magnitude and direction angle of the resultant force of two vectors  
 vector011 Finding magnitudes of forces related to a sum of three vectors  
 vector012 Finding magnitudes of forces related to an object suspended by cables  
 vector023 Dot product of vectors given in  $a_i + b_j$  form  
 vector009 Dot product of vectors given in component form  
 pcalc730 Finding the angle between two vectors given in component form  
 vector024 Classifying vector relationships by finding the angle between two vectors given in  $a_i + b_j$  form  
 vector010 Using the dot product to find perpendicular vectors  
 vector006 Finding the component of a vector along another vector  
 vector025 Decomposing a vector into two orthogonal vectors  
 vector026 Finding the amount of work done given a force vector and a distance  
 vector027 Finding magnitudes of forces related to an object on a ramp  
 pcalc449 Plotting points in polar coordinates  
 pcalc450 Multiple representations of polar coordinates  
 pcalc056 Converting rectangular coordinates to polar coordinates: Special angles  
 pcalc451 Converting rectangular coordinates to polar coordinates: Decimal answers  
 pcalc057 Converting polar coordinates to rectangular coordinates  
 pcalc058 Converting an equation written in rectangular form to one written in polar form  
 pcalc452 Converting an equation written in polar form to one written in rectangular form: Problem type 1  
 pcalc453 Converting an equation written in polar form to one written in rectangular form: Problem type 2  
 pcalc454 Graphing a polar equation: Basic  
 pcalc455 Graphing a polar equation: Circle  
 pcalc456 Graphing a polar equation: Limacon  
 pcalc457 Graphing a polar equation: Rose  
 pcalc458 Graphing a polar equation: Lemniscate  
 pcalc459 Matching polar equations with their graphs  
 pcalc460 Identifying symmetries of graphs given their polar equations  
 pcalc461 Plotting complex numbers  
 pcalc462 Writing a complex number in standard form given its trigonometric form  
 pcalc472 Writing a complex number in trigonometric form: Special angles  
 pcalc052 Writing a complex number in trigonometric form: Decimal answers  
 pcalc463 Multiplying and dividing complex numbers in trigonometric form  
 pcalc464 De Moivre's Theorem: Answers in trigonometric form  
 pcalc054 De Moivre's theorem: Answers in standard form  
 pcalc807 Finding the  $n$ th roots of a number: Problem type 1  
 pcalc808 Finding the  $n$ th roots of a number: Problem type 2

### Systems of Equations and Matrices

alge075 Classifying systems of linear equations from graphs  
 alge916 Solving a system of linear equations with fractional coefficients  
 alge917 Solving a system of linear equations with decimal coefficients  
 alge752 Solving a  $2 \times 2$  system of linear equations that is inconsistent or consistent dependent  
 alge077 Creating an inconsistent system of linear equations  
 alge988 Identifying the operations used to create equivalent systems of equations  
 pcalc099 Consistency and independence of a system of linear equations

alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 pcalc496 Introduction to solving a 3x3 system of linear equations  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 pcalc497 Solving a 3x3 system of linear equations: Problem type 2  
 pcalc498 Solving a 3x3 system of linear equations that is inconsistent or consistent dependent  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 pcalc549 Solving a word problem using a 3x3 system of linear equations: Problem type 2  
 pcalc037 Scalar multiplication of a matrix  
 pcalc038 Addition or subtraction of matrices  
 pcalc740 Linear combination of matrices  
 pcalc507 Squaring and multiplying 2x2 matrices  
 pcalc039 Multiplication of matrices: Basic  
 pcalc710 Multiplication of matrices: Advanced  
 pcalc503 Word problem involving multiplication of matrices  
 pcalc504 Finding the inverse of a 2x2 matrix  
 pcalc505 Finding the inverse of a 3x3 matrix  
 pcalc042 Finding the determinant of a 2x2 matrix  
 pcalc043 Finding the determinant of a 3x3 matrix  
 pcalc564 Completing Gauss-Jordan elimination with a 2x2 matrix  
 pcalc712 Gauss-Jordan elimination with a 2x2 matrix  
 pcalc500 Writing solutions to 3x3 systems of linear equations from augmented matrices  
 pcalc499 Completing Gauss-Jordan elimination with a 3x3 matrix  
 pcalc046 Solving a system of linear equations given its augmented matrix  
 pcalc502 Finding the inverse of a matrix to solve a 2x2 system of linear equations  
 pcalc711 Using the inverse of a matrix to solve a 3x3 system of linear equations  
 pcalc045 Using Cramer's rule to solve a 2x2 system of linear equations  
 pcalc047 Using Cramer's rule to solve a 3x3 system of linear equations  
 pcalc531 Introduction to partial fraction decomposition with distinct linear factors  
 pcalc812 Partial fraction decomposition with distinct linear factors  
 pcalc813 Partial fraction decomposition with repeated linear factors  
 pcalc814 Partial fraction decomposition with an irreducible quadratic factor  
 pcalc533 Partial fraction decomposition with repeated, irreducible quadratic factors  
 alge994 Graphically solving a system of linear and quadratic equations  
 pcalc716 Using a graphing calculator to solve a system of linear and quadratic equations: Basic  
 pcalc796 Using a graphing calculator to solve a system of equations  
 pcalc806 Using a graphing calculator to solve an exponential or logarithmic equation  
 alge995 Solving a system of linear and quadratic equations  
 pcalc098 Solving a system of nonlinear equations: Problem type 1  
 pcalc534 Solving a system of nonlinear equations: Problem type 2  
 pcalc535 Solving a word problem involving geometry using a system of nonlinear equations  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge315 Writing an inequality given its graph in the plane: Horizontal or vertical boundary line  
 alge316 Writing an inequality given its graph in the plane: Slanted boundary line  
 pcalc748 Graphing a quadratic inequality: Problem type 1  
 pcalc749 Graphing a quadratic inequality: Problem type 2  
 pcalc536 Graphing an inequality involving a circle  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced  
 alge922 Graphing a system of three linear inequalities  
 pcalc096 Graphing a system of nonlinear inequalities: Problem type 1  
 alge729 Writing a multi-step inequality for a real-world situation  
 pcalc093 Solving a word problem using a system of linear inequalities: Problem type 1

pccalc537 Solving a word problem using a system of linear inequalities: Problem type 2  
 pccalc095 Linear programming  
 pccalc094 Solving a word problem using linear programming

### Conic Sections

pccalc566 Graphing a parabola of the form  $y^2 = ax$  or  $x^2 = ay$   
 pccalc575 Graphing a parabola of the form  $x=a(y-k)^2+h$  or  $y=a(x-h)^2+k$   
 pccalc067 Graphing a parabola of the form  $ay^2 + by + cx + d = 0$  or  $ax^2 + bx + cy + d = 0$   
 pccalc068 Writing an equation of a parabola given the vertex and the focus  
 pccalc475 Writing an equation of a parabola given the focus and the directrix  
 geom494 Deriving the equation of a parabola given its focus and directrix  
 pccalc476 Finding the vertex, focus, directrix, and axis of symmetry of a parabola  
 pccalc069 Finding the focus of a parabola of the form  $ay^2 + by + cx + d = 0$  or  $ax^2 + bx + cy + d = 0$   
 pccalc477 Writing an equation of a parabola given its graph  
 pccalc478 Word problem involving a parabola  
 pccalc734 Graphing an ellipse given its equation in standard form  
 pccalc070 Graphing an ellipse centered at the origin:  $Ax^2 + By^2 = C$   
 pccalc071 Graphing an ellipse given its equation in general form  
 pccalc479 Finding the center, vertices, and foci of an ellipse  
 pccalc072 Finding the foci of an ellipse given its equation in general form  
 pccalc074 Writing an equation of an ellipse given the center, an endpoint of an axis, and the length of the other axis  
 pccalc073 Writing an equation of an ellipse given the foci and the major axis length  
 pccalc097 Graphing a system of nonlinear inequalities: Problem type 2  
 pccalc480 Word problem involving an ellipse  
 pccalc735 Graphing a hyperbola given its equation in standard form  
 pccalc075 Graphing a hyperbola centered at the origin:  $Ax^2 - By^2 - C = 0$   
 pccalc076 Graphing a hyperbola given its equation in general form  
 pccalc481 Finding the center, vertices, foci, and asymptotes of a hyperbola  
 pccalc077 Finding the foci of a hyperbola given its equation in general form  
 pccalc078 Writing an equation of a hyperbola given the foci and the vertices  
 pccalc482 Writing an equation of a hyperbola given the foci and the asymptotes: Basic  
 pccalc079 Writing an equation of a hyperbola given the foci and the asymptotes: Advanced  
 pccalc736 Classifying conics given their equations  
 pccalc538 Completing a table and choosing a graph given a pair of parametric equations  
 pccalc539 Writing the equation of a line and sketching its graph given its parametric equations  
 pccalc540 Writing the equation of a parabola and sketching its graph given its parametric equations  
 pccalc541 Writing the equation of a circle or ellipse and sketching its graph given its parametric equations  
 pccalc542 Graphing a pair of parametric equations with a restricted domain: Line or parabola  
 pccalc563 Graphing a pair of parametric equations with a restricted domain: Circle  
 pccalc565 Graphing a pair of parametric equations with a restricted domain: Ellipse  
 pccalc544 Completing pairs of parametric equations  
 pccalc545 Word problem involving parametric equations for projectile motion: Problem type 1  
 pccalc576 Word problem involving parametric equations for projectile motion: Problem type 2

### Sequences, Series, and Probability

alge644 Finding the first terms of an arithmetic sequence using an explicit rule  
 alge645 Finding the first terms of a geometric sequence using an explicit rule  
 pccalc080 Finding the first terms of a sequence using an explicit rule with multiple occurrences of  $n$   
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge908 Finding the first terms of a sequence using a recursive rule  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pccalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 pccalc715 Finding a specified term of an arithmetic sequence given two terms of the sequence  
 alge909 Writing an explicit rule for an arithmetic sequence

alge910 Writing a recursive rule for an arithmetic sequence  
 pcalc718 Sum of the first  $n$  terms of an arithmetic sequence  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc717 Finding a specified term of a geometric sequence given two terms of the sequence  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge911 Writing recursive rules for arithmetic and geometric sequences  
 pcalc719 Sum of the first  $n$  terms of a geometric sequence  
 pcalc720 Sum of an infinite geometric series  
 alge965 Identifying linear, quadratic, and exponential functions given ordered pairs  
 pcalc082 Factorial expressions  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 mstat017 Computing permutations and combinations  
 pcalc809 Introduction to permutations and combinations  
 pcalc810 Permutations and combinations: Problem type 1  
 pcalc089 Permutations and combinations: Problem type 2  
 pcalc090 Permutations and combinations: Problem type 3  
 pcalc087 Binomial formula  
 mstat099 Determining a sample space and outcomes for a simple event  
 mstat100 Determining a sample space and outcomes for a compound event  
 mstat010 Probability of an event  
 mstat046 Experimental and theoretical probability  
 stat106 Outcomes and event probability  
 mstat116 Probabilities of a permutation and a combination  
 mstat011 Area as probability  
 stat850 Probability of independent events  
 stat851 Probability of dependent events  
 stat117 Probabilities of draws with replacement  
 stat118 Probabilities of draws without replacement  
 mstat042 Interpreting a Venn diagram of 2 sets  
 mstat043 Interpreting a Venn diagram of 3 sets  
 stat119 Venn diagrams: Two events  
 stat101 Venn diagrams: Word problems  
 stat112 Probabilities involving two dice  
 mstat115 Determining outcomes for compound events and complements of events  
 mstat109 Using a Venn diagram to understand the addition rule for probability  
 mstat108 Outcomes and event probability: Addition rule  
 stat114 Probability of intersection or union: Word problems  
 mstat104 Identifying independent events given values of probabilities  
 stat115 Independent events: Basic  
 stat120 Probability of union: Basic  
 mstat110 Using a Venn diagram to understand the multiplication rule for probability  
 mstat107 Outcomes and event probability: Conditional probability  
 mstat105 Computing conditional probability using a two-way frequency table  
 mstat106 Computing conditional probability to make an inference using a two-way frequency table  
 stat116 Conditional probability: Basic  
 stat109 Intersection and conditional probability  
 stat174 Binomial problems: Basic  
 stat155 Binomial problems: Advanced  
 mstat114 Using a random number table to make a fair decision

### Limits and Continuity

pcalc901 Estimating a limit numerically  
 pcalc902 Finding limits from a graph

pcalc905 Finding a limit by using the limit laws: Problem type 1  
 pcalc904 Finding limits for a piecewise-defined function  
 pcalc906 Finding a limit by using the limit laws: Problem type 2  
 pcalc907 Finding a limit by using the limit laws: Problem type 3  
 pcalc911 Squeeze Theorem  
 pcalc903 Determining points of discontinuity from a graph  
 pcalc914 Determining a parameter to make a function continuous  
 pcalc915 Infinite limits and graphs  
 pcalc910 Limits at infinity and graphs  
 pcalc908 Limits at infinity and rational functions  
 pcalc909 Infinite limits and rational functions  
 pcalc913 Finding a limit of a trigonometric function by using continuity  
 pcalc912 Finding a limit by using special trigonometric limits

## B.45 Trigonometry

### Algebra and Geometry Review

arith687 Fractional position on a number line  
 arith605 Plotting rational numbers on a number line  
 arith691 Ordering integers  
 arith602 Estimating a square root  
 arith712 Ordering real numbers  
 alge001 Identifying numbers as integers or non-integers  
 alge002 Identifying numbers as rational or irrational  
 arith116 Signed fraction addition or subtraction: Basic  
 arith864 Signed fraction subtraction involving double negation  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith811 Addition and subtraction of 3 fractions involving signs  
 arith822 Signed fraction multiplication: Basic  
 arith105 Signed fraction multiplication: Advanced  
 arith814 Signed fraction division  
 arith104 Operations with absolute value: Problem type 2  
 alge694 Computing the distance between two integers on a number line  
 arith702 Exponents and integers: Problem type 1  
 arith703 Exponents and integers: Problem type 2  
 arith704 Exponents and signed fractions  
 arith118 Order of operations with integers  
 arith600 Order of operations with integers and exponents  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 alge187 Properties of addition  
 alge188 Properties of real numbers  
 alge604 Distributive property: Integer coefficients  
 alge608 Using distribution and combining like terms to simplify: Univariate  
 alge667 Identifying properties used to simplify an algebraic expression  
 alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
 alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge311 Product rule with positive exponents: Univariate  
 alge030 Product rule with positive exponents: Multivariate  
 alge826 Understanding the power rules of exponents  
 alge306 Introduction to the power of a power rule of exponents  
 alge305 Introduction to the power of a product rule of exponents  
 alge307 Power rules with positive exponents: Multivariate products  
 alge308 Power rules with positive exponents: Multivariate quotients

alge756 Power and product rules with positive exponents  
 alge451 Simplifying a ratio of multivariate monomials: Basic  
 alge827 Introduction to the quotient rule of exponents  
 alge452 Simplifying a ratio of univariate monomials  
 alge026 Quotient of expressions involving exponents  
 alge453 Simplifying a ratio of multivariate monomials: Advanced  
 alge927 Power and quotient rules with positive exponents  
 alge790 Evaluating expressions with exponents of zero  
 arith729 Evaluating an expression with a negative exponent: Whole number base  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge961 Introduction to the product rule with negative exponents  
 alge028 Product rule with negative exponents  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge926 Quotient rule with negative exponents: Problem type 2  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge928 Power and quotient rules with negative exponents: Problem type 1  
 alge929 Power and quotient rules with negative exponents: Problem type 2  
 alge757 Power, product, and quotient rules with negative exponents  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent  
 scinot012 Converting between scientific notation and standard form in a real-world situation  
 scinot008 Multiplying numbers written in scientific notation: Basic  
 scinot009 Multiplying numbers written in scientific notation: Advanced  
 scinot019 Multiplying numbers written in decimal form or scientific notation in a real-world situation  
 scinot010 Dividing numbers written in scientific notation: Basic  
 scinot011 Dividing numbers written in scientific notation: Advanced  
 scinot013 Finding the scale factor between numbers given in scientific notation in a real-world situation  
 alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge932 Simplifying a sum or difference of multivariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge081 Multiplying conjugate binomials: Multivariate  
 alge032 Squaring a binomial: Univariate  
 alge068 Squaring a binomial: Multivariate  
 alge973 Multiplying binomials with negative coefficients  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 arith034 Prime numbers  
 arith035 Prime factorization  
 arith033 Greatest common factor of 2 numbers  
 alge605 Factoring a linear binomial  
 alge736 Introduction to the GCF of two monomials  
 alge930 Greatest common factor of three univariate monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge949 Factoring out a binomial from a polynomial: GCF factoring, basic  
 alge923 Factoring a univariate polynomial by grouping: Problem type 1  
 alge950 Factoring a univariate polynomial by grouping: Problem type 2  
 alge951 Factoring a multivariate polynomial by grouping: Problem type 1  
 alge952 Factoring a multivariate polynomial by grouping: Problem type 2



alge039 Factoring a quadratic with leading coefficient 1  
alge942 Factoring a quadratic in two variables with leading coefficient 1  
alge936 Factoring out a constant before factoring a quadratic  
alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1  
alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
alge941 Factoring a quadratic with leading coefficient greater than 1: Problem type 3  
alge978 Factoring a quadratic by the ac-method  
alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
alge937 Factoring a quadratic with a negative leading coefficient  
alge944 Factoring a perfect square trinomial with leading coefficient 1  
alge945 Factoring a perfect square trinomial with leading coefficient greater than 1  
alge946 Factoring a perfect square trinomial in two variables  
alge290 Factoring a difference of squares in one variable: Basic  
alge947 Factoring a difference of squares in one variable: Advanced  
alge839 Factoring a difference of squares in two variables  
alge948 Factoring a polynomial involving a GCF and a difference of squares: Univariate  
alge833 Factoring a polynomial involving a GCF and a difference of squares: Multivariate  
alge041 Factoring a product of a quadratic trinomial and a monomial  
alge042 Factoring with repeated use of the difference of squares formula  
alge044 Factoring a sum or difference of two cubes  
pcalc577 Factoring out binomials from a polynomial: GCF factoring, advanced  
pcalc578 Using substitution to factor polynomials  
alge049 Restriction on a variable in a denominator: Linear  
alge454 Simplifying a ratio of factored polynomials: Linear factors  
alge455 Simplifying a ratio of factored polynomials: Factors with exponents  
alge456 Simplifying a ratio of polynomials using GCF factoring  
alge457 Simplifying a ratio of linear polynomials: 1, -1, and no simplification  
alge458 Simplifying a ratio of polynomials by factoring a quadratic with leading coefficient 1  
alge710 Simplifying a ratio of polynomials: Problem type 1  
alge682 Simplifying a ratio of polynomials: Problem type 2  
alge459 Simplifying a ratio of polynomials: Problem type 3  
alge034 Simplifying a ratio of multivariate polynomials  
alge053 Multiplying rational expressions involving multivariate monomials  
alge460 Multiplying rational expressions made up of linear expressions  
alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
alge461 Multiplying rational expressions involving quadratics with leading coefficients greater than 1  
alge462 Multiplying rational expressions involving multivariate quadratics  
alge054 Dividing rational expressions involving multivariate monomials  
alge463 Dividing rational expressions involving linear expressions  
alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
alge464 Dividing rational expressions involving quadratics with leading coefficients greater than 1  
alge465 Dividing rational expressions involving multivariate quadratics  
alge466 Multiplication and division of 3 rational expressions  
arith070 Least common multiple of 2 numbers  
arith804 Least common multiple of 3 numbers  
alge737 Introduction to the LCM of two monomials  
alge055 Least common multiple of two monomials  
alge427 Finding the LCD of rational expressions with linear denominators: Relatively prime  
alge428 Finding the LCD of rational expressions with linear denominators: Common factors  
alge429 Finding the LCD of rational expressions with quadratic denominators  
alge430 Writing equivalent rational expressions with monomial denominators  
alge431 Writing equivalent rational expressions with polynomial denominators  
alge304 Writing equivalent rational expressions involving opposite factors  
alge432 Introduction to adding fractions with variables and common denominators  
alge433 Adding rational expressions with common denominators and monomial numerators  
alge056 Adding rational expressions with common denominators and binomial numerators  
alge434 Adding rational expressions with common denominators and GCF factoring  
alge435 Adding rational expressions with common denominators and quadratic factoring  
alge436 Adding rational expressions with different denominators and a single occurrence of a variable  
alge437 Adding rational expressions with denominators  $ax$  and  $bx$ : Basic  
alge438 Adding rational expressions with denominators  $ax$  and  $bx$ : Advanced  
alge439 Adding rational expressions with denominators  $axn$  and  $bxm$

alge440 Adding rational expressions with multivariate monomial denominators: Basic  
alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
alge441 Adding rational expressions with linear denominators without common factors: Basic  
alge442 Adding rational expressions with linear denominators without common factors: Advanced  
alge443 Adding rational expressions with linear denominators with common factors: Basic  
alge444 Adding rational expressions with linear denominators with common factors: Advanced  
alge445 Adding rational expressions with denominators  $ax-b$  and  $b-ax$   
alge661 Adding rational expressions involving different quadratic denominators  
alge446 Adding 3 rational expressions with different quadratic denominators  
arith695 Complex fraction without variables: Problem type 1  
arith696 Complex fraction without variables: Problem type 2  
alge470 Complex fraction involving univariate monomials  
alge058 Complex fraction involving multivariate monomials  
alge471 Complex fraction: GCF factoring  
alge472 Complex fraction: Quadratic factoring  
alge473 Complex fraction made of sums involving rational expressions: Problem type 1  
alge474 Complex fraction made of sums involving rational expressions: Problem type 2  
alge475 Complex fraction made of sums involving rational expressions: Problem type 3  
alge476 Complex fraction made of sums involving rational expressions: Problem type 4  
alge477 Complex fraction made of sums involving rational expressions: Problem type 5  
alge478 Complex fraction made of sums involving rational expressions: Problem type 6  
alge413 Finding all square roots of a number  
arith601 Square root of a rational perfect square  
arith760 Square roots of perfect squares with signs  
arith761 Square roots of integers raised to even exponents  
alge415 Introduction to simplifying a radical expression with an even exponent  
alge264 Square root of a perfect square monomial  
alge603 Introduction to solving an absolute value equation  
alge537 Using absolute value to simplify square roots of perfect square monomials  
arith094 Cube root of an integer  
alge549 Finding  $n$ th roots of perfect  $n$ th powers with signs  
arith768 Finding the  $n$ th root of a perfect  $n$ th power fraction  
alge550 Finding the  $n$ th root of a perfect  $n$ th power monomial  
alge538 Using absolute value to simplify higher radical expressions  
alge812 Converting between radical form and exponent form  
alge560 Rational exponents: Unit fraction exponents and whole number bases  
alge561 Rational exponents: Unit fraction exponents and bases involving signs  
alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
alge251 Rational exponents: Negative exponents and fractional bases  
alge558 Rational exponents: Product rule  
alge559 Rational exponents: Quotient rule  
alge773 Rational exponents: Products and quotients with negative exponents  
alge562 Rational exponents: Power of a power rule  
alge249 Rational exponents: Powers of powers with negative exponents  
arith093 Simplifying the square root of a whole number less than 100  
arith762 Simplifying the square root of a whole number greater than 100  
alge080 Simplifying a radical expression with an even exponent  
alge520 Introduction to simplifying a radical expression with an odd exponent  
alge521 Simplifying a radical expression with an odd exponent  
alge275 Simplifying a radical expression with two variables  
alge273 Simplifying a higher root of a whole number  
alge551 Introduction to simplifying a higher radical expression  
alge552 Simplifying a higher radical expression: Univariate  
alge811 Simplifying a higher radical expression: Multivariate  
arith767 Introduction to square root addition or subtraction  
arith032 Square root addition or subtraction  
alge533 Square root addition or subtraction with three terms  
alge531 Introduction to simplifying a sum or difference of radical expressions: Univariate  
alge532 Simplifying a sum or difference of radical expressions: Univariate  
alge084 Simplifying a sum or difference of radical expressions: Multivariate  
alge554 Simplifying a sum or difference of higher roots  
alge555 Simplifying a sum or difference of higher radical expressions

arith764 Introduction to square root multiplication  
 arith765 Square root multiplication: Basic  
 arith039 Square root multiplication: Advanced  
 alge522 Introduction to simplifying a product of radical expressions: Univariate  
 alge523 Simplifying a product of radical expressions: Univariate  
 alge640 Simplifying a product of radical expressions: Multivariate  
 alge082 Simplifying a product of radical expressions: Multivariate, fractional expressions  
 alge556 Introduction to simplifying a product of higher roots  
 alge557 Simplifying a product of higher radical expressions  
 alge525 Introduction to simplifying a product involving square roots using the distributive property  
 alge526 Simplifying a product involving square roots using the distributive property: Basic  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge984 Classifying sums and products as rational or irrational  
 arith766 Simplifying a quotient of square roots  
 alge530 Simplifying a quotient involving a sum or difference with a square root  
 alge527 Rationalizing a denominator: Quotient involving square roots  
 alge528 Rationalizing a denominator: Square root of a fraction  
 alge529 Rationalizing a denominator: Quotient involving a monomial  
 alge534 Rationalizing a denominator using conjugates: Integer numerator  
 alge535 Rationalizing a denominator using conjugates: Square root in numerator  
 alge536 Rationalizing a denominator using conjugates: Variable in denominator  
 alge564 Rationalizing a denominator: Quotient involving a higher radical  
 alge775 Rationalizing a denominator: Quotient involving higher radicals and monomials  
 alge563 Simplifying products or quotients of higher radicals with different indices: Univariate  
 alge776 Simplifying products or quotients of higher radicals with different indices: Multivariate  
 geom340 Area of a piecewise rectangular figure  
 geom142 Word problem involving the area between two rectangles  
 geom801 Area of a triangle  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom016 Circumference of a circle  
 geom301 Perimeter involving rectangles and circles  
 geom802 Circumference and area of a circle  
 geom477 Circumference and area of a circle: Exact answers in terms of pi  
 geom302 Area involving rectangles and circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom311 Volume of a rectangular prism  
 geom090 Volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom035 Volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom622 Volume of a cone  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom841 Volume of a sphere  
 geom031 Surface area of a cube or a rectangular prism  
 geom091 Surface area of a triangular prism  
 geom621 Surface area of a cylinder  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom842 Surface area of a sphere  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem

### Equations and Inequalities

alge836 Additive property of equality with signed fractions  
 alge012 Multiplicative property of equality with signed fractions  
 alge837 Solving a multi-step equation given in fractional form

alge986 Identifying properties used to solve a linear equation  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
 alge208 Solving a two-step equation with signed fractions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge840 Solving a proportion of the form  $(x+a)\div b = c\div d$   
 alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
 alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
 alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
 alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
 alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
 alge518 Solving for a variable inside parentheses in terms of other variables  
 alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
 alge016 Translating a sentence into a one-step equation  
 alge841 Translating a sentence into a multi-step equation  
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge792 Solving a word problem with three unknowns using a linear equation  
 alge842 Solving a word problem involving consecutive integers  
 alge730 Writing a multi-step equation for a real-world situation  
 alge794 Solving a value mixture problem using a linear equation  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 alge796 Solving a distance, rate, time problem using a linear equation  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom838 Circumference ratios  
 geom628 Finding angle measures of a triangle given angles with variables  
 arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
 arith847 Finding the sale price given the original price and percent discount  
 arith848 Finding the total cost including tax or markup  
 arith031 Finding the original price given the sale price and percent discount  
 arith854 Computing a percent mixture  
 alge795 Solving a percent mixture problem using a linear equation  
 arith232 Finding simple interest without a calculator  
 alge864 Solving an absolute value equation: Problem type 1  
 alge865 Solving an absolute value equation: Problem type 2  
 alge866 Solving an absolute value equation: Problem type 3  
 alge867 Solving an absolute value equation: Problem type 4  
 alge167 Solving an absolute value equation of the form  $-ax+b = -cx+d$   
 alge845 Translating a sentence into a one-step inequality  
 alge846 Translating a sentence into a multi-step inequality  
 alge748 Writing an inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line  
 set001 Set builder notation  
 set004 Set builder and interval notation  
 set002 Union and intersection of finite sets  
 set005 Union and intersection of intervals

alge844 Identifying solutions to a two-step linear inequality in one variable  
alge852 Additive property of inequality with signed fractions  
alge964 Multiplicative property of inequality with signed fractions  
alge855 Solving a two-step linear inequality: Problem type 1  
alge856 Solving a two-step linear inequality: Problem type 2  
alge857 Solving a two-step linear inequality with a fractional coefficient  
alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
alge860 Solving inequalities with no solution or all real numbers as solutions  
alge746 Solving a compound linear inequality: Graph solution, basic  
alge747 Solving a compound linear inequality: Interval notation  
alge749 Solving a decimal word problem using a two-step linear inequality  
alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
alge868 Solving an absolute value inequality: Problem type 1  
alge943 Writing an absolute value inequality given a graph on the number line  
alge869 Solving an absolute value inequality: Problem type 2  
alge870 Solving an absolute value inequality: Problem type 3  
alge871 Solving an absolute value inequality: Problem type 4  
alge872 Solving an absolute value inequality: Problem type 5  
alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
alge421 Solving a rational equation that simplifies to linear: Denominators  $ax$  and  $bx$   
alge422 Solving a rational equation that simplifies to linear: Like binomial denominators  
alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
alge508 Solving for a variable in terms of other variables in a rational equation: Problem type 1  
alge509 Solving for a variable in terms of other variables in a rational equation: Problem type 2  
alge510 Solving for a variable in terms of other variables in a rational equation: Problem type 3  
arith610 Word problem on proportions: Problem type 1  
arith611 Word problem on proportions: Problem type 2  
geom037 Similar polygons  
geom038 Similar right triangles  
geom337 Indirect measurement  
arith612 Word problem involving multiple rates  
alge770 Solving a work problem using a rational equation  
alge450 Solving a distance, rate, time problem using a rational equation  
alge778 Using  $i$  to rewrite square roots of negative numbers  
alge779 Simplifying a product and quotient involving square roots of negative numbers  
pcalc048 Adding or subtracting complex numbers  
pcalc049 Multiplying complex numbers  
pcalc050 Dividing complex numbers  
pcalc053 Simplifying a power of  $i$   
alge681 Solving an equation written in factored form  
alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
alge045 Finding the roots of a quadratic equation with leading coefficient 1  
alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
alge211 Solving a quadratic equation needing simplification  
alge046 Roots of a product of polynomials  
alge163 Writing a quadratic equation given the roots and the leading coefficient  
alge703 Solving a word problem using a quadratic equation with rational roots  
alge713 Using the Pythagorean Theorem and a quadratic equation to find side lengths of a right triangle  
alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
alge227 Solving a quadratic equation using the square root property: Exact answers, advanced  
alge094 Completing the square  
alge780 Solving a quadratic equation by completing the square: Exact answers  
alge095 Applying the quadratic formula: Exact answers  
alge963 Applying the quadratic formula: Decimal answers  
pcalc051 Solving a quadratic equation with complex roots  
alge214 Discriminant of a quadratic equation

alge193 Discriminant of a quadratic equation with parameter  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge093 Solving an equation using the odd-root property: Problem type 1  
 alge228 Solving an equation using the odd-root property: Problem type 2  
 alge784 Solving a quadratic inequality written in factored form  
 alge771 Solving a quadratic inequality  
 alge467 Restriction on a variable in a denominator: Quadratic  
 alge423 Solving a rational equation that simplifies to linear: Factorable quadratic denominator  
 alge424 Solving a rational equation that simplifies to quadratic: Proportional form, basic  
 alge425 Solving a rational equation that simplifies to quadratic: Denominator  $x$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 alge426 Solving a rational equation that simplifies to quadratic: Factorable quadratic denominator  
 alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced  
 alge400 Introduction to solving a radical equation  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge402 Solving a radical equation that simplifies to a linear equation: One radical, advanced  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge403 Solving a radical equation that simplifies to a quadratic equation: One radical, basic  
 alge404 Solving a radical equation that simplifies to a quadratic equation: One radical, advanced  
 alge411 Solving a radical equation with a quadratic expression under the radical  
 alge405 Solving a radical equation with two radicals that simplifies to  $\sqrt{x} = a$   
 alge182 Solving a radical equation that simplifies to a quadratic equation: Two radicals  
 alge412 Algebraic symbol manipulation with radicals  
 alge542 Word problem involving radical equations: Basic  
 alge409 Word problem involving radical equations: Advanced  
 alge410 Solving an equation with a root index greater than 2: Problem type 1  
 alge417 Solving an equation with a root index greater than 2: Problem type 2  
 alge416 Solving an equation with exponent  $1/a$ : Problem type 1  
 alge418 Solving an equation with exponent  $1/a$ : Problem type 2  
 alge230 Solving an equation with positive rational exponent  
 alge231 Solving an equation with negative rational exponent  
 alge781 Solving an equation that can be written in quadratic form: Problem type 1  
 alge782 Solving an equation that can be written in quadratic form: Problem type 2

## Graphs and Functions

alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 arith405 Naming the quadrant or axis of a point given its coordinates  
 arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
 geom437 Finding the area of a triangle or parallelogram in the coordinate plane  
 alge850 Table for a linear equation  
 alge132 Distance between two points in the plane: Exact answers  
 alge324 Distance between two points in the plane: Decimal answers  
 geom323 Identifying scalene, isosceles, and equilateral triangles given coordinates of their vertices  
 alge191 Midpoint of a line segment in the plane  
 alge414 Finding an endpoint of a line segment given the other endpoint and the midpoint  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
 alge924 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Basic  
 alge210 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Advanced  
 alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
 alge881 Graphing a line by first finding its  $x$ - and  $y$ -intercepts



pcalc750 Finding intercepts of a nonlinear function given its graph  
pcalc678 Finding x- and y-intercepts of the graph of a nonlinear equation  
alge913 Graphing an absolute value equation of the form  $y = A|x - h| + k$   
alge954 Graphing a parabola of the form  $y = ax^2 + bx + c$   
alge955 Graphing a parabola of the form  $y = ax^2 + c$   
alge262 Graphing a cubic function of the form  $y = ax^3 + bx^2 + cx + d$   
pcalc416 Determining if graphs have symmetry with respect to the x-axis, y-axis, or origin  
pcalc679 Testing an equation for symmetry about the axes and origin  
alge875 Classifying slopes given graphs of lines  
alge886 Finding slope given the graph of a line on a grid  
alge887 Finding slope given two points on the line  
alge885 Finding the slope of horizontal and vertical lines  
alge888 Finding the coordinate that yields a given slope  
alge259 Graphing a line given its slope and y-intercept  
alge196 Graphing a line through a given point with a given slope  
alge876 Identifying linear equations: Advanced  
alge874 Identifying linear functions given ordered pairs  
alge891 Rewriting a linear equation in the form  $Ax + By = C$   
alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
alge882 Graphing a line by first finding its slope and y-intercept  
alge258 Writing an equation of a line given its slope and y-intercept  
alge892 Writing an equation and graphing a line given its slope and y-intercept  
alge314 Finding the slope, y-intercept, and equation for a linear function given a table of values  
alge893 Writing an equation in slope-intercept form given the slope and a point  
alge318 Finding the slope and a point on a line given its equation in point-slope form  
alge883 Graphing a line given its equation in point-slope form  
alge894 Writing an equation in point-slope form given the slope and a point  
alge313 Writing an equation in standard form given the slope and a point  
alge070 Writing an equation of a line given the y-intercept and another point  
alge072 Writing the equation of the line through two given points  
alge073 Writing the equations of vertical and horizontal lines through a given point  
alge322 Comparing linear functions to the parent function  $y = x$   
geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
alge895 Identifying parallel and perpendicular lines from equations  
geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
geom462 Identifying parallel and perpendicular lines from coordinates  
geom322 Identifying coordinates that give right triangles  
alge897 Writing and evaluating a function that models a real-world situation: Advanced  
alge654 Graphing ordered pairs and writing an equation from a table of values in context  
alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
alge817 Finding the initial amount and rate of change given a table for a linear function  
alge818 Finding the initial amount and rate of change given a graph of a linear function  
alge992 Combining functions to write a new function that models a real-world situation  
alge987 Comparing properties of linear functions given in different forms  
alge989 Interpreting the parameters of a linear function that models a real-world situation  
alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
alge806 Application problem with a linear function: Finding a coordinate given two points  
alge914 Identifying solutions to a system of linear equations  
alge725 Graphically solving a system of linear equations  
pcalc820 Using a graphing calculator to solve a system of linear equations: Basic  
pcalc821 Using a graphing calculator to solve a system of linear equations: Advanced  
alge317 Writing a system of linear equations given its graph  
alge751 Solving a system of linear equations using substitution  
alge915 Solving a system of linear equations using elimination with addition  
alge076 Solving a system of linear equations using elimination with multiplication and addition  
alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
geom496 Identifying the center and radius to graph a circle given its equation in standard form  
geom497 Identifying the center and radius to graph a circle given its equation in general form: Basic  
geom668 Identifying the center and radius to graph a circle given its equation in general form: Advanced  
geom499 Writing the equation of a circle centered at the origin given its radius or a point on the circle

geom495 Writing an equation of a circle and identifying points that lie on the circle  
 geom498 Writing an equation of a circle given its center and radius or diameter  
 geom493 Deriving the equation of a circle using the Pythagorean Theorem  
 pcalc065 Writing an equation of a circle given its center and a point on the circle  
 pcalc066 Writing an equation of a circle given the endpoints of a diameter  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 alge468 Evaluating a rational function: Problem type 1  
 alge469 Evaluating a rational function: Problem type 2  
 alge539 Table for a square root function  
 alge546 Evaluating a cube root function  
 pcalc682 Evaluating functions: Absolute value, rational, radical  
 alge971 Table for an exponential function  
 fun030 Evaluating a piecewise-defined function  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 pcalc571 Variable expressions as inputs of functions: Problem type 2  
 pcalc411 Variable expressions as inputs of functions: Problem type 3  
 fun016 Domain and range from ordered pairs  
 alge715 Domain of a rational function: Excluded values  
 pcalc412 Domain of a rational function: Interval notation  
 alge540 Domain of a square root function: Basic  
 pcalc763 Domain of a square root function: Advanced  
 alge547 Domains of higher root functions  
 pcalc754 Finding the domain of a fractional function involving radicals  
 pcalc924 Determining whether an equation defines a function: Basic  
 pcalc757 Determining whether an equation defines a function: Advanced  
 alge294 Finding outputs of a one-step function that models a real-world situation: Function notation  
 alge295 Finding outputs of a two-step function with decimals that models a real-world situation: Function notation  
 alge296 Finding inputs and outputs of a two-step function that models a real-world situation: Function notation  
 alge990 Domain and range of a linear function that models a real-world situation  
 pcalc471 Rewriting a multivariate function as a univariate function given a relationship between its variables  
 pcalc753 Finding a difference quotient for a linear or quadratic function  
 pcalc414 Finding a difference quotient for a rational function  
 fun026 Finding an output of a function from its graph  
 pcalc761 Finding inputs and outputs of a function from its graph  
 fun007 Domain and range from the graph of a discrete relation  
 alge312 Finding domain and range from a linear graph in context  
 fun024 Domain and range from the graph of a continuous function  
 fun025 Domain and range from the graph of a piecewise function  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 pcalc751 Finding where a function is increasing, decreasing, or constant given the graph: Interval notation  
 pcalc752 Finding local maxima and minima of a function given the graph  
 pcalc439 Finding the absolute maximum and minimum of a function given the graph  
 pcalc417 Finding values and intervals where the graph of a function is zero, positive, or negative  
 mstat018 Choosing a graph to fit a narrative: Basic  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge896 Graphing an integer function and finding its range for a given domain  
 alge570 Graphing a function of the form  $f(x) = ax + b$ : Integer slope  
 alge571 Graphing a function of the form  $f(x) = ax + b$ : Fractional slope  
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge572 Graphing a function of the form  $f(x) = ax^2$   
 alge573 Graphing a function of the form  $f(x) = ax^2 + c$   
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 alge543 Graphing a square root function: Problem type 1  
 alge544 Graphing a square root function: Problem type 2  
 alge545 Graphing a square root function: Problem type 3  
 alge548 Graphing a cube root function  
 pcalc488 Graphing an exponential function:  $f(x)=bx$

pcalc443 Matching parent graphs with their equations  
fun031 Graphing a piecewise-defined function: Problem type 1  
pcalc444 Graphing a piecewise-defined function: Problem type 2  
pcalc568 Graphing a piecewise-defined function: Problem type 3  
pcalc114 Even and odd functions: Problem type 1  
pcalc440 Even and odd functions: Problem type 2  
pcalc768 Finding the average rate of change of a function  
alge998 Finding the average rate of change of a function given its graph  
pcalc442 Word problem involving average rate of change  
pcalc441 Writing the equation of a secant line  
pcalc467 Translating the graph of a parabola: One step  
pcalc465 Translating the graph of a parabola: Two steps  
alge723 How the leading coefficient affects the shape of a parabola  
pcalc468 Translating the graph of an absolute value function: One step  
alge899 Translating the graph of an absolute value function: Two steps  
alge901 How the leading coefficient affects the graph of an absolute value function  
alge185 Writing an equation for a function after a vertical translation  
pcalc469 Translating the graph of a function: One step  
pcalc770 Translating the graph of a function: Two steps  
pcalc569 Transforming the graph of a function by reflecting over an axis  
pcalc470 Transforming the graph of a function by shrinking or stretching  
pcalc570 Transforming the graph of a function using more than one transformation  
pcalc466 Transforming the graph of a quadratic, cubic, square root, or absolute value function  
fun020 Writing an equation for a function after a vertical and horizontal translation  
fun019 Sum, difference, and product of two functions  
alge786 Quotient of two functions: Basic  
pcalc413 Quotient of two functions: Advanced  
pcalc756 Combining functions: Advanced  
alge716 Introduction to the composition of two functions  
fun022 Composition of two functions: Basic  
pcalc484 Composition of a function with itself  
pcalc776 Expressing a function as a composition of two functions  
fun021 Composition of two functions: Domain and range  
alge129 Composition of two functions: Advanced  
pcalc483 Composition of two rational functions  
pcalc485 Word problem involving composition of two functions  
fun011 Horizontal line test  
pcalc777 Determining whether two functions are inverses of each other  
fun012 Inverse functions: Linear, discrete  
pcalc573 Inverse functions: Quadratic, square root  
pcalc572 Inverse functions: Cubic, cube root  
alge130 Inverse functions: Rational  
pcalc486 Graphing the inverse of a function given its graph  
pcalc487 Finding, evaluating, and interpreting an inverse function for a given linear relationship  
alge974 Finding the vertex, x-intercepts, and axis of symmetry from the graph of a parabola  
alge569 Graphing a parabola of the form  $y = x^2 + bx + c$   
pcalc574 Graphing a parabola of the form  $y = a(x-h)^2 + k$   
pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients  
alge323 Finding the zeros of a quadratic function given its equation  
pcalc714 Using a graphing calculator to find the zeros of a quadratic function  
alge320 Writing a quadratic function given its zeros  
alge277 Finding the x-intercept(s) and the vertex of a parabola  
pcalc793 Using a graphing calculator to find the x-intercept(s) and vertex of a quadratic function  
alge319 Rewriting a quadratic function in standard form  
pcalc550 Rewriting a quadratic function to find its vertex and sketch its graph  
pcalc775 Finding the maximum or minimum of a quadratic function  
alge785 Word problem involving the maximum or minimum of a quadratic function  
pcalc551 Word problem involving optimizing area by using a quadratic function  
pcalc415 Domain and range from the graph of a quadratic function  
pcalc762 Range of a quadratic function  
pcalc680 Writing the equation of a quadratic function given its graph

pcalc764 Finding zeros of a polynomial function written in factored form  
 pcalc765 Finding x- and y-intercepts given a polynomial function  
 pcalc794 Using a graphing calculator to find local extrema of a polynomial function  
 pcalc795 Using a graphing calculator to find zeros of a polynomial function

### Trigonometric Functions

pcalc001 Converting degrees-minutes-seconds to decimal degrees  
 pcalc661 Converting a decimal degree to degrees-minutes-seconds  
 pcalc002 Converting between degree and radian measure: Problem type 1  
 pcalc621 Converting between degree and radian measure: Problem type 2  
 pcalc006 Sketching an angle in standard position  
 pcalc622 Coterminal angles  
 pcalc005 Arc length and central angle measure  
 pcalc623 Area of a sector of a circle  
 pcalc624 Angular and linear speed  
 pcalc627 Finding coordinates on the unit circle for special angles  
 pcalc625 Finding a point on the unit circle given one coordinate  
 pcalc629 Trigonometric functions and special angles: Problem type 1  
 pcalc628 Finding trigonometric ratios from a point on the unit circle  
 pcalc630 Trigonometric functions and special angles: Problem type 2  
 pcalc631 Trigonometric functions and special angles: Problem type 3  
 pcalc409 Evaluating expressions involving sine and cosine  
 pcalc427 Even and odd properties of trigonometric functions  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc408 Using a calculator to approximate cosecant, secant, and cotangent values  
 pcalc410 Evaluating a sinusoidal function that models a real-world situation  
 geom506 Special right triangles: Exact answers  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc008 Finding trigonometric ratios given a right triangle  
 geom317 Understanding trigonometric ratios through similar right triangles  
 geom316 Relationship between the sines and cosines of complementary angles  
 geom318 Using similar right triangles to find trigonometric ratios  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc642 Solving a right triangle  
 pcalc473 Using trigonometry to find a length in a word problem with two right triangles  
 pcalc626 Reference angles: Problem type 1  
 pcalc632 Reference angles: Problem type 2  
 pcalc671 Determining the location of a terminal point given the signs of trigonometric values  
 pcalc011 Finding values of trigonometric functions given information about an angle: Problem type 1  
 pcalc012 Finding values of trigonometric functions given information about an angle: Problem type 2  
 pcalc013 Finding values of trigonometric functions given information about an angle: Problem type 3  
 pcalc426 Finding values of trigonometric functions given information about an angle: Problem type 4

### Trigonometric Graphs

pcalc445 Sketching the graph of  $y = a \sin(x)$  or  $y = a \cos(x)$   
 pcalc446 Sketching the graph of  $y = \sin(bx)$  or  $y = \cos(bx)$   
 pcalc447 Sketching the graph of  $y = \sin(x) + d$  or  $y = \cos(x) + d$   
 pcalc448 Sketching the graph of  $y = \sin(x+c)$  or  $y = \cos(x+c)$   
 pcalc107 Sketching the graph of  $y = a \sin(x+c)$  or  $y = a \cos(x+c)$   
 pcalc106 Sketching the graph of  $y = a \sin(bx)$  or  $y = a \cos(bx)$   
 pcalc014 Sketching the graph of  $y = a \sin(bx+c)$  or  $y = a \cos(bx+c)$

pcalc438 Sketching the graph of  $y = a \sin(bx) + d$  or  $y = a \cos(bx) + d$   
 pcalc633 Amplitude and period of sine and cosine functions  
 pcalc634 Amplitude, period, and phase shift of sine and cosine functions  
 pcalc635 Writing the equation of a sine or cosine function given its graph: Problem type 1  
 pcalc636 Writing the equation of a sine or cosine function given its graph: Problem type 2  
 pcalc640 Word problem involving a sine or cosine function: Problem type 1  
 pcalc641 Word problem involving a sine or cosine function: Problem type 2  
 pcalc474 Sketching a graph of a damped sine or cosine function  
 pcalc428 Domains and ranges of trigonometric functions  
 pcalc637 Matching graphs and equations for secant, cosecant, tangent, and cotangent functions  
 pcalc017 Sketching the graph of a secant or cosecant function: Problem type 1  
 pcalc638 Sketching the graph of a secant or cosecant function: Problem type 2  
 pcalc105 Sketching the graph of a tangent or cotangent function: Problem type 1  
 pcalc015 Sketching the graph of a tangent or cotangent function: Problem type 2

### Trigonometric Identities and Equations

pcalc016 Values of inverse trigonometric functions  
 pcalc018 Composition of a trigonometric function with its inverse trigonometric function: Problem type 1  
 pcalc419 Composition of a trigonometric function with its inverse trigonometric function: Problem type 2  
 pcalc420 Composition of a trigonometric function with the inverse of another trigonometric function: Problem type 1  
 pcalc421 Composition of a trigonometric function with the inverse of another trigonometric function: Problem type 2  
 pcalc036 Composition of a trigonometric function with the inverse of another trigonometric function: Problem type 3  
 pcalc423 Composition of trigonometric functions with variable expressions as inputs: Problem type 1  
 pcalc422 Composition of trigonometric functions with variable expressions as inputs: Problem type 2  
 pcalc418 Using a calculator to approximate inverse trigonometric values  
 pcalc648 Simplifying trigonometric expressions  
 pcalc666 Using cofunction identities  
 pcalc110 Verifying a trigonometric identity  
 pcalc034 Proving trigonometric identities: Problem type 1  
 pcalc404 Proving trigonometric identities: Problem type 2  
 pcalc405 Proving trigonometric identities: Problem type 3  
 pcalc429 Proving trigonometric identities: Problem type 4  
 pcalc406 Proving trigonometric identities using odd and even properties  
 pcalc029 Sum and difference identities: Problem type 1  
 pcalc663 Sum and difference identities: Problem type 2  
 pcalc664 Sum and difference identities: Problem type 3  
 pcalc430 Sum and difference identities: Problem type 4  
 pcalc431 Proving trigonometric identities using sum and difference properties: Problem type 1  
 pcalc432 Proving trigonometric identities using sum and difference properties: Problem type 2  
 pcalc030 Double-angle identities: Problem type 1  
 pcalc667 Double-angle identities: Problem type 2  
 pcalc434 Double-angle identities: Problem type 3  
 pcalc437 Power-reducing identities  
 pcalc662 Half-angle identities: Problem type 1  
 pcalc665 Half-angle identities: Problem type 2  
 pcalc124 Product-to-sum and sum-to-product identities: Problem type 1  
 pcalc674 Product-to-sum and sum-to-product identities: Problem type 2  
 pcalc402 Proving trigonometric identities using double-angle properties  
 pcalc436 Proving trigonometric identities using sum-to-product formulas  
 pcalc650 Finding solutions in an interval for a basic equation involving sine or cosine  
 pcalc651 Finding solutions in an interval for a basic tangent, cotangent, secant, or cosecant equation  
 pcalc660 Solving a basic trigonometric equation using a calculator  
 pcalc020 Solving a basic trigonometric equation involving sine or cosine  
 pcalc021 Solving a basic trigonometric equation involving tangent, cotangent, secant, or cosecant  
 pcalc670 Finding solutions in an interval for a trigonometric equation in factored form  
 pcalc652 Finding solutions in an interval for a trigonometric equation with a squared function: Problem type 1

pcalc653 Finding solutions in an interval for a trigonometric equation with a squared function: Problem type 2  
 pcalc654 Finding solutions in an interval for a trigonometric equation using Pythagorean identities: Problem type 1  
 pcalc424 Finding solutions in an interval for a trigonometric equation using Pythagorean identities: Problem type 2  
 pcalc657 Finding solutions in an interval for an equation with sine and cosine using double-angle identities  
 pcalc668 Solving a trigonometric equation modeling a real-world situation  
 pcalc811 Using a graphing calculator to solve a trigonometric equation  
 pcalc127 Using a graphing calculator to solve a trigonometric inequality  
 pcalc022 Solving a trigonometric equation involving a squared function: Problem type 1  
 pcalc023 Solving a trigonometric equation involving a squared function: Problem type 2  
 pcalc024 Solving a trigonometric equation involving more than one function  
 pcalc025 Solving a trigonometric equation involving an angle multiplied by a constant  
 pcalc655 Finding solutions in an interval for a trigonometric equation with an angle multiplied by a constant  
 pcalc656 Finding solutions in an interval for an equation with sine and cosine using sum and difference identities  
 pcalc026 Solving a trigonometric equation using sum and difference identities  
 pcalc027 Solving a trigonometric equation using double-angle identities  
 pcalc028 Solving a trigonometric equation using half-angle identities

### Triangles and Vectors

pcalc031 Solving a triangle with the law of sines: Problem type 1  
 pcalc032 Solving a triangle with the law of sines: Problem type 2  
 pcalc644 Solving a word problem using the law of sines  
 geom320 Proving the law of sines  
 pcalc033 Solving a triangle with the law of cosines  
 geom409 Proving the law of cosines  
 pcalc645 Solving a word problem using the law of cosines  
 geom439 Using trigonometry to find the area of a right triangle  
 pcalc646 Finding the area of a triangle using trigonometry  
 geom319 Expressing the area of a triangle in terms of the sine of one of its angles  
 pcalc647 Heron's formula  
 vector028 Writing a position vector in  $ai+bj$  form given its graph  
 vector014 Writing a vector in  $ai+bj$  form given its initial and terminal points  
 vector013 Writing a vector in component form given its initial and terminal points  
 vector015 Magnitude of a vector given in  $ai+bj$  form  
 pcalc060 Magnitude of a vector given in component form  
 vector016 Vector addition and scalar multiplication:  $ai+bj$  form  
 vector017 Linear combination of vectors:  $ai+bj$  form  
 geom856 Vector addition and scalar multiplication: Component form  
 vector008 Linear combination of vectors: Component form  
 pcalc729 Unit vectors  
 pcalc739 Multiplication of a vector by a scalar: Geometric approach  
 geom857 Vector addition: Geometric approach  
 vector007 Vector subtraction: Geometric approach  
 vector002 Finding the magnitude and direction of a vector given its graph  
 vector005 Finding the components of a vector given its graph  
 vector019 Finding the direction angle of a vector given in  $ai+bj$  form  
 vector018 Writing a vector given its magnitude and direction angle  
 vector020 Writing a vector to represent a force pushing or pulling an object  
 vector021 Finding the magnitude and direction angle of the resultant force of two vectors  
 vector011 Finding magnitudes of forces related to a sum of three vectors  
 vector012 Finding magnitudes of forces related to an object suspended by cables  
 vector023 Dot product of vectors given in  $ai+bj$  form  
 vector009 Dot product of vectors given in component form  
 pcalc730 Finding the angle between two vectors given in component form  
 vector024 Classifying vector relationships by finding the angle between two vectors given in  $ai + bj$  form  
 vector010 Using the dot product to find perpendicular vectors  
 vector006 Finding the component of a vector along another vector  
 vector025 Decomposing a vector into two orthogonal vectors



vector026 Finding the amount of work done given a force vector and a distance  
 vector027 Finding magnitudes of forces related to an object on a ramp

### Polar Coordinates and Complex Numbers

pcalc449 Plotting points in polar coordinates  
 pcalc450 Multiple representations of polar coordinates  
 pcalc056 Converting rectangular coordinates to polar coordinates: Special angles  
 pcalc451 Converting rectangular coordinates to polar coordinates: Decimal answers  
 pcalc057 Converting polar coordinates to rectangular coordinates  
 pcalc058 Converting an equation written in rectangular form to one written in polar form  
 pcalc452 Converting an equation written in polar form to one written in rectangular form: Problem type 1  
 pcalc453 Converting an equation written in polar form to one written in rectangular form: Problem type 2  
 pcalc454 Graphing a polar equation: Basic  
 pcalc455 Graphing a polar equation: Circle  
 pcalc456 Graphing a polar equation: Limacon  
 pcalc457 Graphing a polar equation: Rose  
 pcalc458 Graphing a polar equation: Lemniscate  
 pcalc459 Matching polar equations with their graphs  
 pcalc460 Identifying symmetries of graphs given their polar equations  
 pcalc461 Plotting complex numbers  
 pcalc462 Writing a complex number in standard form given its trigonometric form  
 pcalc472 Writing a complex number in trigonometric form: Special angles  
 pcalc052 Writing a complex number in trigonometric form: Decimal answers  
 pcalc463 Multiplying and dividing complex numbers in trigonometric form  
 pcalc464 De Moivre's Theorem: Answers in trigonometric form  
 pcalc054 De Moivre's theorem: Answers in standard form  
 pcalc807 Finding the nth roots of a number: Problem type 1  
 pcalc808 Finding the nth roots of a number: Problem type 2

### Conic Sections

pcalc566 Graphing a parabola of the form  $y^2 = ax$  or  $x^2 = ay$   
 pcalc575 Graphing a parabola of the form  $x = a(y-k)^2 + h$  or  $y = a(x-h)^2 + k$   
 pcalc067 Graphing a parabola of the form  $ay^2 + by + cx + d = 0$  or  $ax^2 + bx + cy + d = 0$   
 pcalc068 Writing an equation of a parabola given the vertex and the focus  
 pcalc475 Writing an equation of a parabola given the focus and the directrix  
 geom494 Deriving the equation of a parabola given its focus and directrix  
 pcalc476 Finding the vertex, focus, directrix, and axis of symmetry of a parabola  
 pcalc069 Finding the focus of a parabola of the form  $ay^2 + by + cx + d = 0$  or  $ax^2 + bx + cy + d = 0$   
 pcalc477 Writing an equation of a parabola given its graph  
 pcalc478 Word problem involving a parabola  
 pcalc734 Graphing an ellipse given its equation in standard form  
 pcalc070 Graphing an ellipse centered at the origin:  $Ax^2 + By^2 = C$   
 pcalc071 Graphing an ellipse given its equation in general form  
 pcalc479 Finding the center, vertices, and foci of an ellipse  
 pcalc072 Finding the foci of an ellipse given its equation in general form  
 pcalc074 Writing an equation of an ellipse given the center, an endpoint of an axis, and the length of the other axis  
 pcalc073 Writing an equation of an ellipse given the foci and the major axis length  
 pcalc480 Word problem involving an ellipse  
 pcalc735 Graphing a hyperbola given its equation in standard form  
 pcalc075 Graphing a hyperbola centered at the origin:  $Ax^2 - By^2 - C = 0$   
 pcalc076 Graphing a hyperbola given its equation in general form  
 pcalc481 Finding the center, vertices, foci, and asymptotes of a hyperbola  
 pcalc077 Finding the foci of a hyperbola given its equation in general form  
 pcalc078 Writing an equation of a hyperbola given the foci and the vertices  
 pcalc482 Writing an equation of a hyperbola given the foci and the asymptotes: Basic

pcalc079 Writing an equation of a hyperbola given the foci and the asymptotes: Advanced  
 pcalc736 Classifying conics given their equations  
 pcalc538 Completing a table and choosing a graph given a pair of parametric equations  
 pcalc539 Writing the equation of a line and sketching its graph given its parametric equations  
 pcalc540 Writing the equation of a parabola and sketching its graph given its parametric equations  
 pcalc541 Writing the equation of a circle or ellipse and sketching its graph given its parametric equations  
 pcalc542 Graphing a pair of parametric equations with a restricted domain: Line or parabola  
 pcalc563 Graphing a pair of parametric equations with a restricted domain: Circle  
 pcalc565 Graphing a pair of parametric equations with a restricted domain: Ellipse  
 pcalc544 Completing pairs of parametric equations  
 pcalc545 Word problem involving parametric equations for projectile motion: Problem type 1  
 pcalc576 Word problem involving parametric equations for projectile motion: Problem type 2

### Exponential and Logarithmic Functions

pcalc489 Graphing an exponential function:  $f(x) = a(b)^x$   
 pcalc567 Graphing an exponential function:  $f(x)=b \cdot x$  or  $f(x)=-bax$   
 pcalc922 Translating the graph of an exponential function  
 alge321 Finding domain and range from the graph of an exponential function  
 pcalc797 The graph, domain, and range of an exponential function  
 pcalc490 Transforming the graph of a natural exponential function  
 pcalc103 Graphing an exponential function and its asymptote:  $f(x) = a(e)^x - b + c$   
 pcalc491 Using a calculator to evaluate exponential expressions  
 alge830 Evaluating an exponential function that models a real-world situation  
 pcalc555 Using a calculator to evaluate exponential expressions involving base  $e$   
 pcalc919 Evaluating an exponential function with base  $e$  that models a real-world situation  
 arith853 Introduction to compound interest  
 arith910 Calculating and comparing simple interest and compound interest  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest  
 alge966 Finding the initial amount and rate of change given an exponential function  
 alge968 Writing an equation that models exponential growth or decay  
 alge967 Writing an exponential function rule given a table of ordered pairs  
 alge993 Comparing linear, polynomial, and exponential functions  
 pcalc492 Using a calculator to evaluate natural and common logarithmic expressions  
 pcalc493 Converting between logarithmic and exponential equations  
 pcalc494 Converting between natural logarithmic and exponential equations  
 pcalc495 Evaluating logarithmic expressions  
 alge233 Solving an equation of the form  $\log_b a = c$   
 pcalc923 Translating the graph of a logarithmic function  
 alge788 Graphing a logarithmic function: Basic  
 pcalc800 The graph, domain, and range of a logarithmic function  
 pcalc801 Domain of a logarithmic function: Advanced  
 pcalc104 Graphing a logarithmic function: Advanced  
 pcalc708 Basic properties of logarithms  
 pcalc511 Using properties of logarithms to evaluate expressions  
 pcalc779 Expanding a logarithmic expression: Problem type 1  
 pcalc521 Expanding a logarithmic expression: Problem type 2  
 pcalc522 Expanding a logarithmic expression: Problem type 3  
 alge787 Writing an expression as a single logarithm  
 pcalc612 Change of base for logarithms: Problem type 1  
 pcalc613 Change of base for logarithms: Problem type 2  
 pcalc513 Solving a multi-step equation involving a single logarithm: Problem type 1  
 pcalc510 Solving a multi-step equation involving a single logarithm: Problem type 2  
 pcalc804 Solving a multi-step equation involving natural logarithms  
 alge113 Solving an equation involving logarithms on both sides: Problem type 1  
 pcalc805 Solving an equation involving logarithms on both sides: Problem type 2  
 alge301 Solving an exponential equation by finding common bases: Linear exponents  
 alge482 Solving an exponential equation by finding common bases: Linear and quadratic exponents  
 pcalc920 Solving an exponential equation by using logarithms: Decimal answers, basic

pcalc921 Solving an exponential equation by using natural logarithms: Decimal answers  
 pcalc523 Solving an exponential equation by using logarithms: Decimal answers, advanced  
 alge111 Solving an exponential equation by using logarithms: Exact answers in logarithmic form  
 pcalc802 Solving an exponential equation by using substitution and quadratic factoring  
 pcalc806 Using a graphing calculator to solve an exponential or logarithmic equation  
 alge178 Finding the time to reach a limit in a word problem on exponential growth or decay  
 pcalc524 Finding the time in a word problem on compound interest  
 pcalc508 Finding the time given an exponential function with base  $e$  that models a real-world situation  
 pcalc525 Finding the final amount in a word problem on continuous compound interest  
 pcalc526 Finding the final amount in a word problem on continuous exponential growth or decay  
 pcalc527 Finding the initial amount in a word problem on continuous compound interest  
 pcalc615 Finding the rate or time in a word problem on continuous exponential growth or decay  
 pcalc528 Finding half-life or doubling time  
 pcalc529 Writing and evaluating a function modeling continuous exponential growth or decay given doubling time or half-life  
 pcalc530 Writing and evaluating a function modeling continuous exponential growth or decay given two outputs

## B.46 Math Intervention

### Whole Numbers

arith124 Whole number place value: Problem type 1  
 arith125 Whole number place value: Problem type 2  
 arith066 Expanded form  
 arith028 Numeral translation: Problem type 1  
 arith060 Numeral translation: Problem type 2  
 arith633 One-digit addition with carry  
 arith634 Addition of 3 or 4 one-digit numbers  
 arith635 Adding a 2-digit number and a 1-digit number with carry  
 arith001 Addition without carry  
 arith050 Addition with carry  
 arith630 Addition with carry to the hundreds place  
 arith012 Addition of large numbers  
 arith660 Finding the value of a collection of coins  
 arith661 Finding the value of a collection of bills and coins  
 arith636 Subtracting a 1-digit number from a 2-digit number  
 arith007 Subtraction without borrowing  
 arith006 Subtraction with borrowing  
 arith128 Adding or subtracting 10, 100, or 1000  
 arith682 Subtraction with multiple regrouping steps  
 arith637 Subtraction and regrouping with zeros  
 arith613 Word problem with addition or subtraction of whole numbers  
 arith008 One-digit multiplication  
 arith679 Multiplication by 10, 100, and 1000  
 arith675 Understanding multiplication of a one-digit number with a larger number  
 arith003 Multiplication without carry  
 arith004 Multiplication with carry  
 arith615 Introduction to multiplication of large numbers  
 arith632 Multiplication with trailing zeros: Problem type 1  
 arith638 Multiplication with trailing zeros: Problem type 2  
 arith014 Multiplication of large numbers  
 arith126 Multiplication as repeated addition  
 arith639 Using multiplication to find the number of squares  
 arith640 Using addition and multiplication to count the objects on a grid  
 arith641 Multiples: Problem type 1  
 arith642 Multiples: Problem type 2  
 arith075 Division facts  
 arith052 Division without carry

arith005 Division with carry  
 arith680 Division with trailing zeros: Problem type 1  
 arith649 Division with trailing zeros: Problem type 2  
 arith650 Division involving quotients with intermediate zeros  
 arith616 Quotient and remainder: Problem type 1  
 arith644 Word problem on quotient and remainder  
 arith617 Quotient and remainder: Problem type 2  
 arith631 Quotient and remainder: Problem type 3  
 arith023 Word problem with division of whole numbers and rounding  
 arith614 Word problem with multiplication or division of whole numbers  
 arith130 Word problem with multiplication and addition or subtraction of whole numbers  
 arith651 Introduction to inequalities  
 arith652 Comparing a numerical expression with a number  
 arith077 Ordering large numbers  
 arith078 Rounding to tens or hundreds  
 arith123 Rounding to hundreds or thousands  
 arith061 Rounding to thousands, ten thousands, or hundred thousands  
 arith101 Estimating a sum of whole numbers  
 arith102 Estimating a difference of whole numbers  
 arith677 Estimating a product  
 arith678 Estimating a quotient  
 arith645 Introduction to parentheses  
 arith681 Introduction to order of operations  
 arith048 Order of operations with whole numbers  
 arith646 Even and odd numbers  
 arith647 Divisibility rules for 2, 5, and 10  
 arith056 Factors  
 arith034 Prime numbers  
 arith035 Prime factorization  
 arith033 Greatest common factor of 2 numbers  
 arith070 Least common multiple of 2 numbers  
 arith655 Introduction to properties of addition  
 arith656 Introduction to properties of multiplication  
 arith653 Fact families for addition and subtraction  
 arith654 Fact families for multiplication and division  
 alge807 Finding the next terms of a sequence with whole numbers

## Fractions

arith623 Introduction to fractions  
 arith665 Understanding equivalent fractions  
 arith212 Equivalent fractions  
 arith666 Introduction to simplifying a fraction  
 arith067 Simplifying a fraction  
 arith044 Ordering fractions with the same denominator  
 arith091 Ordering fractions with the same numerator  
 arith092 Using a common denominator to order fractions  
 arith687 Fractional position on a number line  
 arith667 Plotting fractions on a number line  
 arith618 Addition or subtraction of fractions with the same denominator  
 arith109 Addition or subtraction of unit fractions  
 arith664 Introduction to addition or subtraction of fractions with different denominators  
 arith230 Addition or subtraction of fractions with different denominators  
 arith079 Product of a unit fraction and a whole number  
 arith086 Product of a fraction and a whole number: Problem type 1  
 arith119 Introduction to fraction multiplication  
 arith053 Fraction multiplication  
 arith088 The reciprocal of a number  
 arith694 Division involving a whole number and a fraction  
 arith022 Fraction division

arith662 Writing a mixed number and an improper fraction for a shaded region  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith215 Addition or subtraction of mixed numbers with the same denominator  
arith084 Addition of mixed numbers with the same denominator and carry  
arith216 Subtraction of mixed numbers with the same denominator and borrowing  
arith020 Mixed number multiplication: Problem type 1

### Decimals

arith127 Writing a decimal and a fraction for a shaded region  
arith110 Decimal place value: Tenths and hundredths  
arith220 Decimal place value: Hundreds to ten thousandths  
arith221 Rounding decimals  
arith129 Introduction to ordering decimals  
arith608 Ordering decimals  
arith670 Converting a decimal to a fraction: Basic  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith671 Converting a fraction with a denominator of 10, 100, or 1000 to a decimal  
arith222 Converting a fraction to a terminating decimal  
arith672 Converting a decimal to a mixed number  
arith624 Addition of aligned decimals  
arith668 Addition with money  
arith013 Decimal addition with 3 numbers  
arith625 Subtraction of aligned decimals  
arith669 Subtraction with money  
arith626 Word problem with one decimal operation: Problem type 1  
arith627 Word problem with one decimal operation: Problem type 2  
arith131 Estimating a decimal sum or difference  
arith082 Multiplication of a decimal by a power of ten  
arith017 Multiplication of a decimal by a whole number  
arith055 Decimal multiplication: Problem type 1  
arith628 Word problem with multiple decimal operations: Problem type 1  
arith083 Division of a decimal by a power of ten  
arith081 Division of a decimal by a whole number  
arith019 Division of a decimal by a 2-digit decimal  
arith064 Solving a word problem on proportions using a unit rate  
arith674 Finding the percentage of a grid that is shaded  
arith090 Converting a percentage to a fraction in simplest form  
arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
arith030 Finding a percentage of a whole number without a calculator: Basic

### Geometry

geom151 Measuring an angle with the protractor  
geom303 Acute, obtuse, and right angles  
geom306 Acute, obtuse, and right triangles  
geom001 Finding an angle measure of a triangle given two angles  
geom300 Perimeter of a square or a rectangle  
geom339 Perimeter of a polygon  
geom221 Finding the missing length in a figure  
geom866 Perimeter and area on a grid  
geom019 Area of a square or a rectangle  
geom350 Distinguishing between the area and perimeter of a rectangle  
geom868 Classifying solids  
geom311 Volume of a rectangular prism  
geom354 Volume of a rectangular prism made of unit cubes  
geom219 Nets of solids

**Measurement and Data**

mstat058 Choosing a measuring tool  
mstat059 Choosing U.S. Customary measurement units  
mstat062 Reading a positive temperature from a thermometer  
mstat033 Measuring length to the nearest inch  
mstat035 Conversions involving measurements in feet and inches  
unit005 U.S. Customary unit conversion with whole number values  
unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
mstat060 Choosing metric measurement units  
mstat063 Measuring length to the nearest centimeter  
unit001 Metric distance conversion with whole number values  
unit002 Metric mass or capacity conversion with whole number values  
time010 Telling time  
unit012 Time unit conversion with whole number values  
time009 Introduction to adding time  
time011 Introduction to elapsed time  
mstat005 Constructing a bar graph for non-numerical data  
mstat037 Constructing a line plot  
mstat056 Interpreting a tally table  
mstat057 Interpreting a pictograph table  
mstat024 Interpreting a bar graph  
mstat044 Interpreting a double bar graph  
mstat007 Interpreting a line graph  
mstat055 Finding the mode and range of a data set  
mstat001 Mean of a data set  
mstat028 Mean and median of a data set  
mstat031 Interpreting a stem-and-leaf plot  
mstat042 Interpreting a Venn diagram of 2 sets  
mstat054 Classifying likelihood  
mstat026 Introduction to the probability of an event

**Algebra**

mstat038 Reading the temperature from a thermometer  
alge286 Plotting integers on a number line  
arith691 Ordering integers  
arith200 Integer addition: Problem type 1  
arith108 Integer addition: Problem type 2  
arith688 Integer subtraction: Problem type 1  
arith231 Integer multiplication and division  
alge284 Evaluating an algebraic expression: Whole number addition or subtraction  
alge683 Evaluating an algebraic expression: Whole number multiplication or division  
alge285 Evaluating an algebraic expression: Whole numbers with two operations  
alge009 Additive property of equality with whole numbers  
alge800 Additive property of equality with decimals  
alge813 Introduction to solving an equation with multiplication or division  
alge008 Multiplicative property of equality with whole numbers  
alge281 Function tables with one-step rules  
alge282 Function tables with two-step rules  
mstat061 Describing an increasing or decreasing pattern from a table of values  
fun005 Writing a function rule given a table of ordered pairs: One-step rules  
alge278 Reading a point in quadrant 1  
alge279 Plotting a point in quadrant 1  
alge280 Graphing a line in quadrant 1  
arith233 Introduction to exponents  
arith692 Writing expressions using exponents



## B.47 Mastery of SAT Math

### Arithmetic Readiness

arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith070 Least common multiple of 2 numbers  
arith240 Word problem with common multiples  
arith067 Simplifying a fraction  
arith092 Using a common denominator to order fractions  
arith801 Finding the LCD of two fractions  
arith230 Addition or subtraction of fractions with different denominators  
arith086 Product of a fraction and a whole number: Problem type 1  
arith053 Fraction multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith697 Mixed arithmetic operations with fractions  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith110 Decimal place value: Tenths and hundredths  
arith221 Rounding decimals  
arith608 Ordering decimals  
arith609 Ordering fractions and decimals  
arith226 Converting between percentages and decimals  
arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
arith090 Converting a percentage to a fraction in simplest form  
arith686 Writing a ratio as a percentage  
mstat049 Computing a percentage from a table of values  
arith698 Applying the percent equation  
arith074 Finding the sale price without a calculator given the original price and percent discount  
arith031 Finding the original price given the sale price and percent discount  
arith225 Finding the percentage increase or decrease: Advanced  
arith232 Finding simple interest without a calculator

### Real Numbers

arith699 Writing a signed number for a real-world situation  
mstat038 Reading the temperature from a thermometer  
arith691 Ordering integers  
arith687 Fractional position on a number line  
arith605 Plotting rational numbers on a number line  
arith200 Integer addition: Problem type 1  
arith108 Integer addition: Problem type 2  
arith688 Integer subtraction: Problem type 1  
arith689 Integer subtraction: Problem type 2  
arith690 Integer subtraction: Problem type 3  
arith701 Word problem with addition or subtraction of integers  
arith116 Signed fraction addition or subtraction: Basic  
arith231 Integer multiplication and division  
arith822 Signed fraction multiplication: Basic  
arith118 Order of operations with integers  
arith702 Exponents and integers: Problem type 1  
arith703 Exponents and integers: Problem type 2  
arith704 Exponents and signed fractions  
arith600 Order of operations with integers and exponents  
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
alge004 Evaluating a quadratic expression: Integers

arith071 Absolute value of a number  
 arith104 Operations with absolute value: Problem type 2  
 alge001 Identifying numbers as integers or non-integers  
 alge002 Identifying numbers as rational or irrational  
 arith657 Understanding the distributive property  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge607 Combining like terms: Integer coefficients  
 alge663 Combining like terms: Advanced  
 alge293 Combining like terms in a quadratic expression  
 alge187 Properties of addition  
 alge188 Properties of real numbers

### Linear Equations and Inequalities

alge010 Additive property of equality with integers  
 alge266 Additive property of equality with a negative coefficient  
 alge008 Multiplicative property of equality with whole numbers  
 alge820 Multiplicative property of equality with fractions  
 alge825 Multiplicative property of equality with decimals  
 alge740 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge006 Solving a two-step equation with integers  
 alge208 Solving a two-step equation with signed fractions  
 alge824 Solving a two-step equation with signed decimals  
 alge200 Solving an equation to find the value of an expression  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge810 Introduction to algebraic symbol manipulation  
 alge743 Algebraic symbol manipulation: Problem type 1  
 alge744 Algebraic symbol manipulation: Problem type 2  
 alge733 Writing a one-step expression for a real-world situation  
 alge602 Writing a one-step variable expression for a real-world situation  
 alge291 Translating a phrase into a two-step expression  
 alge016 Translating a sentence into a one-step equation  
 alge730 Writing a multi-step equation for a real-world situation  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge792 Solving a word problem with three unknowns using a linear equation  
 alge794 Solving a value mixture problem using a linear equation  
 alge795 Solving a percent mixture problem using a linear equation  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 alge829 Word problem involving distance, rate, and time  
 alge218 Solving a word problem involving rates and time conversion  
 alge796 Solving a distance, rate, time problem using a linear equation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge166 Graphing a compound inequality on the number line

alge019 Solving a linear inequality: Problem type 1  
 alge020 Solving a linear inequality: Problem type 2  
 alge021 Solving a linear inequality: Problem type 3  
 alge207 Solving a linear inequality: Problem type 4  
 alge745 Solving a linear inequality: Problem type 5  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge748 Writing an inequality for a real-world situation  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
 alge270 Solving an absolute value equation of the form  $a-x = b$  or  $-x+a = b$   
 alge103 Solving an absolute value equation of the form  $-ax+b = c$   
 alge170 Solving an absolute value inequality: Basic

### Lines and Systems of Linear Equations

alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge850 Table for a linear equation  
 alge066 Finding a solution to a linear equation in two variables  
 alge216 Determining whether given points lie on one, both, or neither of 2 lines given equations  
 alge197 Graphing a line given its x- and y-intercepts  
 alge194 Graphing a line given its equation in slope-intercept form  
 alge195 Graphing a line given its equation in standard form  
 alge196 Graphing a line through a given point with a given slope  
 alge198 Graphing a vertical or horizontal line  
 alge069 Finding the y-intercept of a line given its equation  
 alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
 alge684 Finding slope given the graph of a line on a grid  
 alge685 Finding slope given two points on the line  
 alge631 Finding the slope of a line given its equation  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge071 Writing the equation of a line given the slope and a point on the line  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations  
 alge751 Solving a system of linear equations using substitution  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge752 Solving a 2x2 system of linear equations that is inconsistent or consistent dependent  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge184 Solving a value mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 alge079 Graphing a system of two linear inequalities: Basic

### Exponents, Polynomials, and Quadratics

alge790 Evaluating expressions with exponents of zero  
arith042 Evaluating an expression with a negative exponent: Positive fraction base  
arith043 Evaluating an expression with a negative exponent: Negative integer base  
alge791 Rewriting an algebraic expression without a negative exponent  
alge821 Understanding the product rule of exponents  
alge024 Introduction to the product rule of exponents  
alge030 Product rule with positive exponents: Multivariate  
alge028 Product rule with negative exponents  
alge827 Introduction to the quotient rule of exponents  
alge026 Quotient of expressions involving exponents  
alge755 Quotient rule with negative exponents: Problem type 1  
alge826 Understanding the power rules of exponents  
alge754 Introduction to the power rules of exponents  
alge027 Power rules with positive exponents  
alge025 Power of a power rule with negative exponents  
alge799 Power rules with negative exponents  
alge756 Power and product rules with positive exponents  
arith029 Ordering numbers with positive exponents  
arith036 Scientific notation with positive exponent  
arith037 Scientific notation with negative exponent  
scinot002 Multiplying and dividing numbers written in scientific notation  
alge758 Degree and leading coefficient of a univariate polynomial  
alge798 Simplifying a sum or difference of two univariate polynomials  
alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
alge835 Multiplying a multivariate polynomial by a monomial  
alge033 Multiplying binomials with leading coefficients of 1  
alge764 Multiplying conjugate binomials: Univariate  
alge765 Multiplying binomials in two variables  
alge032 Squaring a binomial: Univariate  
alge180 Multiplication involving binomials and trinomials in two variables  
alge759 Dividing a polynomial by a monomial: Univariate  
alge760 Dividing a polynomial by a monomial: Multivariate  
alge761 Polynomial long division: Problem type 1  
alge762 Polynomial long division: Problem type 2  
alge736 Introduction to the GCF of two monomials  
alge037 Greatest common factor of two multivariate monomials  
alge738 Factoring out a monomial from a polynomial: Univariate  
alge739 Factoring out a monomial from a polynomial: Multivariate  
alge039 Factoring a quadratic with leading coefficient 1  
alge043 Factoring a perfect square trinomial  
alge040 Factoring a quadratic with leading coefficient greater than 1  
alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
alge041 Factoring a product of a quadratic trinomial and a monomial  
alge624 Factoring a difference of squares  
alge038 Factoring a polynomial by grouping: Problem type 1  
alge181 Factoring a polynomial by grouping: Problem type 2  
alge681 Solving an equation written in factored form  
alge045 Finding the roots of a quadratic equation with leading coefficient 1  
alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
alge211 Solving a quadratic equation needing simplification  
alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
alge227 Solving a quadratic equation using the square root property: Exact answers, advanced  
alge094 Completing the square  
alge780 Solving a quadratic equation by completing the square: Exact answers  
alge095 Applying the quadratic formula: Exact answers  
alge214 Discriminant of a quadratic equation  
alge703 Solving a word problem using a quadratic equation with rational roots  
alge524 Solving a word problem using a quadratic equation with irrational roots  
alge277 Finding the x-intercept(s) and the vertex of a parabola  
pcalc775 Finding the maximum or minimum of a quadratic function  
alge785 Word problem involving the maximum or minimum of a quadratic function  
alge252 Graphing a parabola of the form  $y = ax^2$

alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 alge702 Classifying the graph of a function  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge830 Evaluating an exponential function that models a real-world situation  
 alge112 Solving an exponential equation by finding common bases: Linear and quadratic exponents  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest

### Functions and Sequences

set004 Set builder and interval notation  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun016 Domain and range from ordered pairs  
 alge727 Checking if a formula describes a pattern  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 pcalc768 Finding the average rate of change of a function  
 fun019 Sum, difference, and product of two functions  
 fun022 Composition of two functions: Basic  
 fun002 Graphing integer functions  
 pcalc761 Finding inputs and outputs of a function from its graph  
 pcalc750 Finding intercepts of a nonlinear function given its graph  
 pcalc751 Finding where a function is increasing, decreasing, or constant given the graph: Interval notation  
 pcalc752 Finding local maxima and minima of a function given the graph  
 fun024 Domain and range from the graph of a continuous function  
 pcalc114 Even and odd functions: Problem type 1  
 alge185 Writing an equation for a function after a vertical translation  
 fun020 Writing an equation for a function after a vertical and horizontal translation  
 pcalc769 Translating the graph of a function: One step  
 pcalc770 Translating the graph of a function: Two steps  
 pcalc771 Transforming the graph of a function by reflecting over an axis  
 pcalc772 Transforming the graph of a function by shrinking or stretching  
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge712 Graphing an exponential function and its asymptote:  $f(x) = a(b)^x$   
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge807 Finding the next terms of a sequence with whole numbers  
 alge732 Finding patterns in shapes  
 pcalc080 Finding the first terms of a sequence using an explicit rule with multiple occurrences of  $n$   
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term

### Rational and Radical Expressions

alge715 Domain of a rational function: Excluded values  
 alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1

alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge057 Adding rational expressions with different denominators:  $ax$ ,  $bx$   
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge622 Adding rational expressions with different denominators:  $x+a$ ,  $x+b$   
 alge661 Adding rational expressions involving different quadratic denominators  
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 alge058 Complex fraction involving multivariate monomials  
 alge767 Complex fraction: GCF and quadratic factoring  
 alge768 Complex fraction made of sums involving rational expressions  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 pcalc789 Finding the asymptotes of a rational function: Basic  
 pcalc108 Graphing a rational function: Constant or linear over linear  
 arith663 Writing ratios for real-world situations  
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 arith612 Word problem involving multiple rates  
 alge770 Solving a work problem using a rational equation  
 alge220 Word problem on inverse proportions  
 pcalc681 Writing an equation that models variation  
 alge175 Word problem on direct variation  
 alge176 Word problem on inverse variation  
 alge772 Word problem on combined variation  
 alge213 Domain of a square root function  
 pcalc781 Graphing a square root function  
 arith016 Square root of a perfect square  
 arith602 Estimating a square root  
 arith601 Square root of a rational perfect square  
 arith094 Cube root of an integer  
 arith093 Simplifying the square root of a whole number less than 100  
 alge264 Square root of a perfect square monomial  
 alge080 Simplifying a radical expression with an even exponent  
 alge275 Simplifying a radical expression with two variables  
 arith032 Square root addition or subtraction  
 arith039 Square root multiplication: Advanced  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge086 Rationalizing the denominator of a radical expression  
 alge088 Rationalizing the denominator of a radical expression using conjugates  
 alge812 Converting between radical form and exponent form  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge249 Rational exponents: Powers of powers with negative exponents  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge091 Solving a radical equation that simplifies to a quadratic equation: One radical  
 alge182 Solving a radical equation that simplifies to a quadratic equation: Two radicals

### Perimeter, Area, and Volume

geom300 Perimeter of a square or a rectangle



geom221 Finding the missing length in a figure  
 geom353 Perimeter of a piecewise rectangular figure  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom078 Sides of polygons having the same perimeter  
 geom019 Area of a square or a rectangle  
 geom350 Distinguishing between the area and perimeter of a rectangle  
 geom351 Areas of rectangles with the same perimeter  
 geom340 Area of a piecewise rectangular figure  
 geom142 Word problem involving the area between two rectangles  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom801 Area of a triangle  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom344 Area involving rectangles and triangles  
 geom213 Area of a regular polygon  
 geom832 Area of quadrilaterals in the coordinate plane  
 alge724 Finding an area in terms of variables  
 geom016 Circumference of a circle  
 geom218 Finding the radius or the diameter of a circle given its circumference  
 geom301 Perimeter involving rectangles and circles  
 geom838 Circumference ratios  
 geom802 Circumference and area of a circle  
 geom805 Arc length and area of a sector of a circle  
 geom302 Area involving rectangles and circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom354 Volume of a rectangular prism made of unit cubes  
 geom311 Volume of a rectangular prism  
 geom505 Volume of a piecewise rectangular prism  
 geom090 Volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom035 Volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom086 Volume of a cone: Exact answers in terms of  $\pi$   
 geom841 Volume of a sphere  
 geom219 Nets of solids  
 geom861 Nets of solids: Advanced  
 geom348 Vertices, edges, and faces of a solid  
 geom031 Surface area of a cube or a rectangular prism  
 geom345 Surface area of a piecewise rectangular prism made of unit cubes  
 geom091 Surface area of a triangular prism  
 geom034 Surface area of a cylinder: Exact answers in terms of  $\pi$   
 geom842 Surface area of a sphere  
 geom338 Surface area involving prisms or cylinders

### Lines, Angles, and Triangles

mstat042 Interpreting a Venn diagram of 2 sets  
 mstat043 Interpreting a Venn diagram of 3 sets  
 glogic001 Conditional statements and negations  
 glogic005 The converse, inverse, and contrapositive of a conditional statement  
 glogic008 Conditional statements and deductive reasoning  
 geom349 Naming segments, rays, and lines  
 geom525 Computing distances between decimals on the number line  
 geom526 Midpoint of a number line segment  
 geom521 Segment addition and midpoints  
 geom358 Identifying parallel and perpendicular lines  
 geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor

geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom304 Identifying corresponding and alternate angles  
 geom305 Identifying supplementary and vertical angles  
 geom530 Solving equations involving vertical angles  
 geom531 Solving equations involving angles and a pair of parallel lines  
 geom850 Angle addition with relationships between angles  
 geom851 Angle addition and angle bisectors  
 geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom309 Finding an angle measure for a triangle sharing a side with another triangle  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 geom844 Using triangle inequality to determine if side lengths form a triangle  
 geom845 Using triangle inequality to determine possible lengths of a third side  
 geom854 Relationship between angle measures and side lengths in a triangle  
 geom855 Relationship between angle measures and side lengths in two triangles  
 geom044 Pythagorean Theorem  
 geom068 Computing an area using the Pythagorean Theorem  
 geom862 Using the Pythagorean Theorem repeatedly  
 geom506 Special right triangles: Exact answers  
 geom212 Circles inscribed in and circumscribed about regular polygons

### Polygons, Circles, and Similarity

alge191 Midpoint of a line segment in the plane  
 alge132 Distance between two points in the plane: Exact answers  
 geom310 Properties of quadrilaterals  
 geom523 Conditions for quadrilaterals  
 geom532 Classifying parallelograms  
 geom528 Finding measures involving diagonals of parallelograms  
 geom527 Conditions for parallelograms  
 geom833 Finding measures involving diagonals of rectangles  
 geom834 Finding measures involving diagonals of rhombi  
 geom870 Sum of the angle measures of a quadrilateral  
 geom852 The sum of interior angle measures in a convex polygon  
 geom853 Interior and exterior angle measures in a regular polygon  
 geom819 Finding coordinates of vertices of polygons  
 geom818 Finding the coordinates of a point to make a parallelogram  
 geom863 Congruence in the coordinate plane  
 geom347 Introduction to a circle: Diameter, radius, and chord  
 geom343 Identifying central angles, inscribed angles, arcs, chords, and tangents of a circle  
 geom848 Tangents of a circle: Problem type 1  
 geom849 Tangents of a circle: Problem type 2  
 geom511 Lengths of chords, secants, and tangents  
 geom514 Inscribed angles of a circle  
 geom512 Central angles and inscribed angles of a circle  
 geom513 Angles of intersecting secants and tangents  
 pcalc605 Graphing a circle given its equation in standard form  
 pcalc065 Writing an equation of a circle given its center and a point on the circle  
 pcalc066 Writing an equation of a circle given the endpoints of a diameter  
 geom359 Identifying congruent shapes on a grid  
 geom520 Identifying and naming congruent triangles  
 geom360 Identifying similar or congruent shapes on a grid  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement

geom510 Triangles and parallel lines  
 geom507 Right triangles and geometric mean  
 geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids  
 geom847 Similar solids: Problem type 2  
 geom133 Ratio of volumes  
 geom357 Identifying transformations  
 geom330 Translating a polygon  
 geom331 Using a translated point to find coordinates of other translated points  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom333 Finding the coordinates of three points reflected over an axis  
 geom334 Drawing lines of symmetry  
 geom335 Rotating a figure about the origin  
 geom815 Finding an angle of rotation  
 geom831 Rotational and point symmetries  
 geom336 Dilating a figure

### Statistics and Probability

mstat004 Constructing a histogram for numerical data  
 mstat005 Constructing a bar graph for non-numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat007 Interpreting a line graph  
 stat804 Interpreting a circle graph or pie chart  
 stat801 Computations from a circle graph  
 geom814 Angle measure in a circle graph  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat001 Mean of a data set  
 mstat028 Mean and median of a data set  
 stat803 Finding the value for a new score that will yield a given mean  
 mstat029 How changing a value affects the mean and median  
 mstat053 Choosing the best measure to describe data  
 mstat066 Weighted mean  
 mstat025 Finding if a question can be answered by the data  
 stat802 Rejecting unreasonable claims based on average statistics  
 stat805 Making a reasonable inference based on proportion statistics  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 stat790 Permutations, combinations, and the multiplication principle for counting  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat032 Probability of the union of two events

## B.48 Math for College Readiness

### Whole Numbers

arith124 Whole number place value: Problem type 1  
arith125 Whole number place value: Problem type 2  
arith066 Expanded form  
arith643 Expanded form with zeros  
arith028 Numeral translation: Problem type 1  
arith060 Numeral translation: Problem type 2  
arith633 One-digit addition with carry  
arith634 Addition of 3 or 4 one-digit numbers  
arith001 Addition without carry  
arith635 Adding a 2-digit number and a 1-digit number with carry  
arith050 Addition with carry  
arith630 Addition with carry to the hundreds place  
arith012 Addition of large numbers  
arith636 Subtracting a 1-digit number from a 2-digit number  
arith007 Subtraction without borrowing  
arith128 Adding or subtracting 10, 100, or 1000  
arith006 Subtraction with borrowing  
arith682 Subtraction with multiple regrouping steps  
arith637 Subtraction and regrouping with zeros  
arith613 Word problem with addition or subtraction of whole numbers  
arith655 Introduction to properties of addition  
arith126 Multiplication as repeated addition  
arith008 One-digit multiplication  
arith679 Multiplication by 10, 100, and 1000  
arith003 Multiplication without carry  
arith004 Multiplication with carry  
arith632 Multiplication with trailing zeros: Problem type 1  
arith615 Introduction to multiplication of large numbers  
arith638 Multiplication with trailing zeros: Problem type 2  
arith014 Multiplication of large numbers  
arith641 Multiples: Problem type 1  
arith642 Multiples: Problem type 2  
arith656 Introduction to properties of multiplication  
arith075 Division facts  
arith614 Word problem with multiplication or division of whole numbers  
arith130 Word problem with multiplication and addition or subtraction of whole numbers  
arith243 Division of whole numbers given in fractional form  
arith711 Division involving zero  
arith052 Division without carry  
arith005 Division with carry  
arith680 Division with trailing zeros: Problem type 1  
arith649 Division with trailing zeros: Problem type 2  
arith616 Quotient and remainder: Problem type 1  
arith644 Word problem on quotient and remainder  
arith617 Quotient and remainder: Problem type 2  
arith631 Quotient and remainder: Problem type 3  
arith650 Division involving quotients with intermediate zeros  
arith023 Word problem with division of whole numbers and rounding  
arith651 Introduction to inequalities  
arith077 Ordering large numbers  
arith078 Rounding to tens or hundreds  
arith123 Rounding to hundreds or thousands  
arith061 Rounding to thousands, ten thousands, or hundred thousands  
arith101 Estimating a sum of whole numbers  
arith102 Estimating a difference of whole numbers  
arith604 Estimating a product or quotient of whole numbers  
arith692 Writing expressions using exponents  
arith233 Introduction to exponents  
arith683 Power of 10: Positive exponent  
arith645 Introduction to parentheses  
arith681 Introduction to order of operations  
arith048 Order of operations with whole numbers

arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
arith657 Understanding the distributive property  
arith646 Even and odd numbers  
arith647 Divisibility rules for 2, 5, and 10  
arith648 Divisibility rules for 3 and 9  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith070 Least common multiple of 2 numbers  
arith804 Least common multiple of 3 numbers  
arith240 Word problem with common multiples  
alge925 Finding the next terms of an arithmetic sequence with whole numbers  
alge933 Finding the next terms of a geometric sequence with whole numbers  
alge732 Finding patterns in shapes  
alge284 Evaluating an algebraic expression: Whole number addition or subtraction  
alge683 Evaluating an algebraic expression: Whole number multiplication or division  
alge285 Evaluating an algebraic expression: Whole numbers with two operations  
alge009 Additive property of equality with whole numbers  
alge008 Multiplicative property of equality with whole numbers  
alge803 Using two steps to solve an equation with whole numbers

## Fractions

arith623 Introduction to fractions  
arith665 Understanding equivalent fractions  
arith212 Equivalent fractions  
arith666 Introduction to simplifying a fraction  
arith067 Simplifying a fraction  
arith687 Fractional position on a number line  
arith667 Plotting fractions on a number line  
arith044 Ordering fractions with the same denominator  
arith091 Ordering fractions with the same numerator  
arith092 Using a common denominator to order fractions  
arith079 Product of a unit fraction and a whole number  
arith086 Product of a fraction and a whole number: Problem type 1  
arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith812 Product of a fraction and a whole number: Problem type 2  
arith813 Multiplication of 3 fractions  
arith818 Word problem involving fractions and multiplication  
arith095 Multi-step word problem involving fractions and multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith819 Word problem involving fractions and division  
arith618 Addition or subtraction of fractions with the same denominator  
arith802 Addition or subtraction of fractions with the same denominator and simplification  
arith801 Finding the LCD of two fractions  
arith109 Addition or subtraction of unit fractions  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
arith803 Addition and subtraction of 3 fractions with different denominators  
arith805 Word problem involving addition or subtraction of fractions with different denominators  
arith100 Fractional part of a circle  
arith662 Writing a mixed number and an improper fraction for a shaded region  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction

arith215 Addition or subtraction of mixed numbers with the same denominator  
 arith084 Addition of mixed numbers with the same denominator and carry  
 arith216 Subtraction of mixed numbers with the same denominator and borrowing  
 arith806 Addition or subtraction of mixed numbers with different denominators and no carry or borrow  
 arith808 Addition of mixed numbers with different denominators and carry  
 arith809 Subtraction of mixed numbers with different denominators and borrowing  
 arith807 Addition and subtraction of 3 mixed numbers with different denominators  
 arith810 Word problem involving addition or subtraction of mixed numbers with different denominators  
 arith815 Mixed number multiplication  
 arith816 Multiplication of a mixed number and a whole number  
 arith817 Division with a mixed number and a whole number  
 arith068 Mixed number division  
 arith820 Word problem involving multiplication or division with mixed numbers  
 arith821 Exponents and fractions  
 arith859 Order of operations with fractions: Problem type 1  
 arith860 Order of operations with fractions: Problem type 2  
 arith861 Order of operations with fractions: Problem type 3  
 arith695 Complex fraction without variables: Problem type 1

## Decimals

arith127 Writing a decimal and a fraction for a shaded region  
 arith110 Decimal place value: Tenths and hundredths  
 arith220 Decimal place value: Hundreds to ten thousandths  
 arith714 Writing a decimal number less than 1 given its name  
 arith715 Writing a decimal number greater than 1 given its name  
 arith716 Writing a decimal number given its name: Advanced  
 arith829 Reading decimal position on a number line: Tenths  
 arith830 Reading decimal position on a number line: Hundredths  
 arith831 Understanding decimal position on a number line using zoom: Hundredths  
 arith832 Understanding decimal position on a number line using zoom: Thousandths  
 arith129 Introduction to ordering decimals  
 arith608 Ordering decimals  
 arith221 Rounding decimals  
 arith717 Converting a decimal to a proper fraction without simplifying: Basic  
 arith719 Converting a decimal to a proper fraction without simplifying: Advanced  
 arith718 Converting a decimal to a proper fraction in simplest form: Basic  
 arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
 arith721 Converting a decimal to a mixed number and an improper fraction without simplifying  
 arith722 Converting a decimal to a mixed number and an improper fraction in simplest form: Basic  
 arith724 Converting a decimal to a mixed number and an improper fraction in simplest form: Advanced  
 arith624 Addition of aligned decimals  
 arith013 Decimal addition with 3 numbers  
 arith734 Subtraction of aligned decimals  
 arith735 Decimal subtraction: Basic  
 arith736 Decimal subtraction: Advanced  
 arith737 Decimal addition and subtraction with 3 or more numbers  
 arith131 Estimating a decimal sum or difference  
 arith132 Word problem with addition or subtraction of 2 decimals  
 arith133 Word problem with addition of 3 or 4 decimals and whole numbers  
 arith134 Word problem with subtraction of a whole number and a decimal: Regrouping with zeros  
 arith739 Introduction to decimal multiplication  
 arith017 Multiplication of a decimal by a whole number  
 arith055 Decimal multiplication: Problem type 1  
 arith046 Decimal multiplication: Problem type 2  
 arith082 Multiplication of a decimal by a power of ten  
 arith738 Multiplication of a decimal by a power of 0.1  
 arith740 Multiplication of decimals that have a product less than 0.1  
 arith752 Estimating a product of decimals  
 arith135 Word problem with multiplication of a decimal and a whole number



arith137 Word problem with multiplication of two decimals  
arith224 Word problem with decimal addition and multiplication  
arith744 Whole number division with decimal answers  
arith081 Division of a decimal by a whole number  
arith743 Division of a decimal by a 1-digit decimal  
arith019 Division of a decimal by a 2-digit decimal  
arith083 Division of a decimal by a power of ten  
arith742 Division of a decimal by a power of 0.1  
arith745 Decimal division with rounding  
arith136 Word problem with division of a decimal and a whole number  
arith138 Word problem with division of two decimals  
arith227 Word problem with decimal subtraction and division  
alge823 Solving a one-step word problem using the formula  $d = rt$   
arith725 Converting a fraction with a denominator of 10 or 100 to a decimal  
arith726 Converting a fraction with a denominator of 100 or 1000 to a decimal  
arith609 Ordering fractions and decimals  
arith727 Converting a fraction to a terminating decimal: Basic  
arith728 Converting a fraction to a terminating decimal: Advanced  
arith730 Converting a fraction to a repeating decimal: Basic  
arith731 Converting a fraction to a repeating decimal: Advanced  
arith733 Using a calculator to convert a fraction to a rounded decimal  
arith111 Converting a mixed number to a terminating decimal: Basic  
arith112 Converting a mixed number to a terminating decimal: Advanced  
arith732 Converting a fraction or mixed number to a rounded decimal  
arith753 Squaring decimal bases: Products greater than 0.1  
arith741 Exponents and decimals: Products less than 0.1  
arith720 Order of operations with decimals: Problem type 1  
arith746 Order of operations with decimals: Problem type 2  
arith747 Order of operations with decimals: Problem type 3  
arith748 Addition or subtraction with a decimal and a mixed number  
arith749 Multiplication with a decimal and a fraction

### Ratios, Proportions, and Percents

arith823 Writing ratios using different notations  
arith663 Writing ratios for real-world situations  
arith824 Simplifying a ratio of whole numbers: Problem type 1  
arith825 Simplifying a ratio of decimals  
arith827 Finding a unit price  
arith828 Computing unit prices to find the better buy  
arith064 Solving a word problem on proportions using a unit rate  
arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
alge272 Solving a proportion of the form  $x/a = b/c$   
arith610 Word problem on proportions: Problem type 1  
arith611 Word problem on proportions: Problem type 2  
alge063 Word problem on mixed number proportions  
arith045 Word problem with powers of ten  
arith836 Converting a fraction with a denominator of 100 to a percentage  
arith837 Converting a percentage to a fraction with a denominator of 100  
arith674 Finding the percentage of a grid that is shaded  
arith723 Introduction to converting a percentage to a decimal  
arith833 Introduction to converting a decimal to a percentage  
arith834 Converting between percentages and decimals  
arith841 Converting a mixed number percentage to a decimal  
arith835 Converting between percentages and decimals in a real-world situation  
arith090 Converting a percentage to a fraction in simplest form  
arith839 Converting a decimal percentage to a fraction  
arith838 Converting a fraction to a percentage: Denominator of 4, 5, or 10  
arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
arith843 Using a calculator to convert a fraction to a rounded percentage

arith842 Converting a fraction to a percentage in a real-world situation  
 arith840 Finding a percentage of a whole number  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith844 Finding a percentage of a whole number without a calculator: Advanced  
 arith862 Applying the percent equation: Problem type 1  
 arith863 Applying the percent equation: Problem type 2  
 arith845 Finding a percentage of a total amount: Real-world situations  
 arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount  
 arith857 Estimating a tip without a calculator  
 arith069 Writing a ratio as a percentage without a calculator  
 mstat049 Computing a percentage from a table of values  
 arith850 Finding the rate of a tax or commission  
 arith849 Finding the total amount given the percentage of a partial amount  
 arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
 arith851 Finding the final amount given the original amount and a percentage increase or decrease  
 arith847 Finding the sale price given the original price and percent discount  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith848 Finding the total cost including tax or markup  
 arith855 Finding the original amount given the result of a percentage increase or decrease  
 arith031 Finding the original price given the sale price and percent discount  
 arith858 Finding the percentage increase or decrease: Basic  
 arith225 Finding the percentage increase or decrease: Advanced  
 arith232 Finding simple interest without a calculator  
 arith853 Introduction to compound interest  
 alge741 Finding the final amount in a word problem on compound interest  
 arith854 Computing a percent mixture

## Geometry

geom339 Perimeter of a polygon  
 geom300 Perimeter of a square or a rectangle  
 geom618 Perimeter of a polygon involving mixed numbers and fractions  
 geom078 Sides of polygons having the same perimeter  
 geom221 Finding the missing length in a figure  
 geom353 Perimeter of a piecewise rectangular figure  
 geom358 Identifying parallel and perpendicular lines  
 geom349 Naming segments, rays, and lines  
 geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom305 Identifying supplementary and vertical angles  
 geom304 Identifying corresponding and alternate angles  
 geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom361 Naming polygons  
 mstat042 Interpreting a Venn diagram of 2 sets  
 geom867 Identifying parallelograms, rectangles, and squares  
 geom310 Properties of quadrilaterals  
 geom532 Classifying parallelograms  
 geom019 Area of a square or a rectangle  
 geom866 Perimeter and area on a grid  
 geom620 Area of a rectangle involving fractions  
 geom619 Area of a rectangle involving mixed numbers and fractions  
 geom350 Distinguishing between the area and perimeter of a rectangle  
 geom351 Areas of rectangles with the same perimeter

geom217 Finding the side length of a rectangle given its perimeter or area  
 geom340 Area of a piecewise rectangular figure  
 geom142 Word problem involving the area between two rectangles  
 geom801 Area of a triangle  
 geom344 Area involving rectangles and triangles  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom347 Introduction to a circle: Diameter, radius, and chord  
 geom016 Circumference of a circle  
 geom301 Perimeter involving rectangles and circles  
 geom802 Circumference and area of a circle  
 geom302 Area involving rectangles and circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom868 Classifying solids  
 geom348 Vertices, edges, and faces of a solid  
 geom830 Counting the cubes in a solid made of cubes  
 geom354 Volume of a rectangular prism made of unit cubes  
 geom311 Volume of a rectangular prism  
 geom505 Volume of a piecewise rectangular prism  
 geom090 Volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom035 Volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom622 Volume of a cone  
 geom841 Volume of a sphere  
 geom219 Nets of solids  
 geom816 Side views of a solid made of cubes  
 geom031 Surface area of a cube or a rectangular prism  
 geom345 Surface area of a piecewise rectangular prism made of unit cubes  
 geom091 Surface area of a triangular prism  
 geom621 Surface area of a cylinder  
 geom842 Surface area of a sphere  
 arith016 Square root of a perfect square  
 arith763 Using a calculator to approximate a square root  
 arith602 Estimating a square root  
 arith601 Square root of a rational perfect square  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem  
 geom359 Identifying congruent shapes on a grid  
 geom520 Identifying and naming congruent triangles  
 geom360 Identifying similar or congruent shapes on a grid  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement

### Measurement

mstat059 Choosing U.S. Customary measurement units  
 unit005 U.S. Customary unit conversion with whole number values  
 mstat035 Conversions involving measurements in feet and inches  
 mstat036 Adding measurements in feet and inches  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 unit007 U.S. Customary unit conversion with mixed number values: One-step conversion  
 unit008 U.S. Customary unit conversion with mixed number values: Two-step conversion  
 unit009 U.S. Customary area unit conversion with whole number values  
 mstat060 Choosing metric measurement units  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values

unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit012 Time unit conversion with whole number values  
 time006 Adding time  
 time007 Elapsed time  
 arith063 Word problem with clocks  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 arith826 Simplifying a ratio of whole numbers: Problem type 2  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced

### Data Analysis and Statistics

mstat056 Interpreting a tally table  
 mstat037 Constructing a line plot  
 mstat005 Constructing a bar graph for non-numerical data  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat057 Interpreting a pictograph table  
 mstat007 Interpreting a line graph  
 mstat031 Interpreting a stem-and-leaf plot  
 stat804 Interpreting a circle graph or pie chart  
 arith856 Finding a percentage of a total amount in a circle graph  
 stat801 Computations from a circle graph  
 geom814 Angle measure in a circle graph  
 stat020 Calculating relative frequencies in a contingency table  
 stat805 Making a reasonable inference based on proportion statistics  
 mstat025 Finding if a question can be answered by the data  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 arith103 Average of two numbers  
 mstat001 Mean of a data set  
 mstat028 Mean and median of a data set  
 stat803 Finding the value for a new score that will yield a given mean  
 mstat029 How changing a value affects the mean and median  
 mstat053 Choosing the best measure to describe data  
 stat802 Rejecting unreasonable claims based on average statistics  
 mstat066 Weighted mean  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat072 Five-number summary and interquartile range  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat039 Understanding likelihood  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability

mstat046 Experimental and theoretical probability  
mstat047 Introduction to expectation  
mstat012 Probability of independent events  
mstat013 Probability of dependent events  
mstat032 Probability of the union of two events

### Real Numbers

alge286 Plotting integers on a number line  
arith605 Plotting rational numbers on a number line  
mstat038 Reading the temperature from a thermometer  
arith699 Writing a signed number for a real-world situation  
arith691 Ordering integers  
arith712 Ordering real numbers  
arith071 Absolute value of a number  
arith200 Integer addition: Problem type 1  
arith108 Integer addition: Problem type 2  
arith688 Integer subtraction: Problem type 1  
arith689 Integer subtraction: Problem type 2  
arith690 Integer subtraction: Problem type 3  
arith754 Addition and subtraction with 3 integers  
arith755 Addition and subtraction with 4 or 5 integers  
arith701 Word problem with addition or subtraction of integers  
arith231 Integer multiplication and division  
arith800 Multiplication of 3 or 4 integers  
alge001 Identifying numbers as integers or non-integers  
alge002 Identifying numbers as rational or irrational  
arith116 Signed fraction addition or subtraction: Basic  
arith864 Signed fraction subtraction involving double negation  
arith106 Signed fraction addition or subtraction: Advanced  
arith811 Addition and subtraction of 3 fractions involving signs  
arith822 Signed fraction multiplication: Basic  
arith105 Signed fraction multiplication: Advanced  
arith814 Signed fraction division  
arith117 Signed decimal addition and subtraction  
arith234 Signed decimal addition and subtraction with 3 numbers  
arith750 Signed decimal multiplication  
arith751 Signed decimal division  
arith104 Operations with absolute value: Problem type 2  
unit052 Finding the absolute error and percent error of a measurement  
arith702 Exponents and integers: Problem type 1  
arith703 Exponents and integers: Problem type 2  
arith704 Exponents and signed fractions  
arith118 Order of operations with integers  
arith600 Order of operations with integers and exponents  
arith696 Complex fraction without variables: Problem type 2  
arith036 Scientific notation with positive exponent  
arith037 Scientific notation with negative exponent  
scinot012 Converting between scientific notation and standard form in a real-world situation

### Algebraic Expressions and Equations

alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
alge832 Evaluating an algebraic expression: Whole number operations and exponents  
alge004 Evaluating a quadratic expression: Integers

alge310 Multiplying a constant and a linear monomial  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 alge608 Using distribution and combining like terms to simplify: Univariate  
 alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
 alge293 Combining like terms in a quadratic expression  
 alge432 Introduction to adding fractions with variables and common denominators  
 alge436 Adding rational expressions with different denominators and a single occurrence of a variable  
 alge437 Adding rational expressions with denominators  $ax$  and  $bx$ : Basic  
 alge187 Properties of addition  
 alge188 Properties of real numbers  
 alge801 Additive property of equality with fractions and mixed numbers  
 alge800 Additive property of equality with decimals  
 alge010 Additive property of equality with integers  
 alge836 Additive property of equality with signed fractions  
 alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
 alge820 Multiplicative property of equality with fractions  
 alge825 Multiplicative property of equality with decimals  
 alge797 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge266 Additive property of equality with a negative coefficient  
 alge006 Solving a two-step equation with integers  
 alge200 Solving an equation to find the value of an expression  
 alge920 Introduction to solving an equation with parentheses  
 alge837 Solving a multi-step equation given in fractional form  
 alge986 Identifying properties used to solve a linear equation  
 alge824 Solving a two-step equation with signed decimals  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
 alge208 Solving a two-step equation with signed fractions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge840 Solving a proportion of the form  $(x+a) \div b = c \div d$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
 alge733 Writing a one-step expression for a real-world situation  
 alge831 Translating a phrase into a one-step expression  
 alge291 Translating a phrase into a two-step expression  
 alge016 Translating a sentence into a one-step equation  
 alge841 Translating a sentence into a multi-step equation  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge218 Solving a word problem involving rates and time conversion  
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge842 Solving a word problem involving consecutive integers  
 geom530 Solving equations involving vertical angles



geom531 Solving equations involving angles and a pair of parallel lines  
 geom623 Finding angle measures of a triangle given angles with variables  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom218 Finding the radius or the diameter of a circle given its circumference  
 geom838 Circumference ratios

### Inequalities

alge015 Translating a sentence by using an inequality symbol  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge845 Translating a sentence into a one-step inequality  
 alge846 Translating a sentence into a multi-step inequality  
 alge748 Writing an inequality for a real-world situation  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2

### Graphs of Linear Equations

alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge850 Table for a linear equation  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 alge191 Midpoint of a line segment in the plane  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
 alge924 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Basic  
 alge210 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Advanced  
 alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
 alge881 Graphing a line by first finding its  $x$ - and  $y$ -intercepts  
 alge954 Graphing a parabola of the form  $y = ax^2$   
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines  
 alge888 Finding the coordinate that yields a given slope  
 alge259 Graphing a line given its slope and  $y$ -intercept  
 alge196 Graphing a line through a given point with a given slope  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge263 Interpreting the graphs of two functions  
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge982 Identifying direct variation equations  
 alge938 Identifying direct variation from ordered pairs and writing equations

alge904 Writing a direct variation equation  
 alge175 Word problem on direct variation  
 alge828 Interpreting direct variation from a graph  
 alge905 Writing an inverse variation equation  
 alge903 Identifying direct and inverse variation equations  
 alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
 alge176 Word problem on inverse variation

### Exponents and Polynomials

alge758 Degree and leading coefficient of a univariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge932 Simplifying a sum or difference of multivariate polynomials  
 alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge311 Product rule with positive exponents: Univariate  
 alge030 Product rule with positive exponents: Multivariate  
 alge826 Understanding the power rules of exponents  
 alge306 Introduction to the power of a power rule of exponents  
 alge305 Introduction to the power of a product rule of exponents  
 alge307 Power rules with positive exponents: Multivariate products  
 alge308 Power rules with positive exponents: Multivariate quotients  
 alge756 Power and product rules with positive exponents  
 arith029 Ordering numbers with positive exponents  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge081 Multiplying conjugate binomials: Multivariate  
 alge032 Squaring a binomial: Univariate  
 alge068 Squaring a binomial: Multivariate  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge736 Introduction to the GCF of two monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge930 Greatest common factor of three univariate monomials  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge605 Factoring a linear binomial  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge451 Simplifying a ratio of multivariate monomials: Basic  
 alge827 Introduction to the quotient rule of exponents  
 alge452 Simplifying a ratio of univariate monomials  
 alge026 Quotient of expressions involving exponents  
 alge453 Simplifying a ratio of multivariate monomials: Advanced  
 alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 arith729 Evaluating an expression with a negative exponent: Whole number base  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge961 Introduction to the product rule with negative exponents  
 alge028 Product rule with negative exponents  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents

alge755 Quotient rule with negative exponents: Problem type 1  
 scinot008 Multiplying numbers written in scientific notation: Basic  
 scinot009 Multiplying numbers written in scientific notation: Advanced  
 scinot010 Dividing numbers written in scientific notation: Basic  
 scinot011 Dividing numbers written in scientific notation: Advanced  
 alge413 Finding all square roots of a number  
 arith093 Simplifying the square root of a whole number less than 100  
 arith762 Simplifying the square root of a whole number greater than 100  
 arith764 Introduction to square root multiplication  
 arith765 Square root multiplication: Basic  
 arith767 Introduction to square root addition or subtraction  
 arith032 Square root addition or subtraction  
 alge533 Square root addition or subtraction with three terms

## B.49 Mathematics for College Readiness (Segment 1)

### Module 1: Expressions and Equations

arith078 Rounding to tens or hundreds  
 arith123 Rounding to hundreds or thousands  
 arith101 Estimating a sum of whole numbers  
 arith233 Introduction to exponents  
 arith692 Writing expressions using exponents  
 arith683 Power of 10: Positive exponent  
 arith048 Order of operations with whole numbers  
 arith051 Order of operations with whole numbers and grouping symbols  
 arith693 Order of operations with whole numbers and exponents: Basic  
 arith713 Order of operations with whole numbers and exponents: Advanced  
 alge731 Evaluating an algebraic expression: Whole numbers with two operations  
 alge832 Evaluating an algebraic expression: Whole number operations and exponents  
 arith056 Factors  
 arith034 Prime numbers  
 arith035 Prime factorization  
 arith033 Greatest common factor of 2 numbers  
 arith070 Least common multiple of 2 numbers  
 arith240 Word problem with common multiples  
 arith212 Equivalent fractions  
 arith067 Simplifying a fraction  
 arith092 Using a common denominator to order fractions  
 arith618 Addition or subtraction of fractions with the same denominator  
 arith801 Finding the LCD of two fractions  
 arith664 Introduction to addition or subtraction of fractions with different denominators  
 arith230 Addition or subtraction of fractions with different denominators  
 arith100 Fractional part of a circle  
 arith079 Product of a unit fraction and a whole number  
 arith086 Product of a fraction and a whole number: Problem type 1  
 arith119 Introduction to fraction multiplication  
 arith053 Fraction multiplication  
 arith088 The reciprocal of a number  
 arith694 Division involving a whole number and a fraction  
 arith022 Fraction division  
 arith697 Mixed arithmetic operations with fractions  
 arith095 Multi-step word problem involving fractions and multiplication  
 arith015 Writing an improper fraction as a mixed number  
 arith619 Writing a mixed number as an improper fraction  
 arith084 Addition of mixed numbers with the same denominator and carry  
 arith216 Subtraction of mixed numbers with the same denominator and borrowing  
 arith085 Addition or subtraction of mixed numbers with different denominators

arith020 Mixed number multiplication: Problem type 1  
arith068 Mixed number division  
arith064 Solving a word problem on proportions using a unit rate  
arith110 Decimal place value: Tenths and hundredths  
arith221 Rounding decimals  
arith129 Introduction to ordering decimals  
arith608 Ordering decimals  
arith609 Ordering fractions and decimals  
arith222 Converting a fraction to a terminating decimal  
arith089 Converting a fraction to a repeating decimal  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith624 Addition of aligned decimals  
arith625 Subtraction of aligned decimals  
arith131 Estimating a decimal sum or difference  
arith017 Multiplication of a decimal by a whole number  
arith082 Multiplication of a decimal by a power of ten  
arith055 Decimal multiplication: Problem type 1  
arith081 Division of a decimal by a whole number  
arith083 Division of a decimal by a power of ten  
arith019 Division of a decimal by a 2-digit decimal  
arith626 Word problem with one decimal operation: Problem type 1  
arith627 Word problem with one decimal operation: Problem type 2  
arith628 Word problem with multiple decimal operations: Problem type 1  
arith226 Converting between percentages and decimals  
arith090 Converting a percentage to a fraction in simplest form  
arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
arith069 Writing a ratio as a percentage without a calculator  
arith030 Finding a percentage of a whole number without a calculator: Basic  
arith698 Applying the percent equation  
arith074 Finding the sale price without a calculator given the original price and percent discount  
arith031 Finding the original price given the sale price and percent discount  
arith225 Finding the percentage increase or decrease: Advanced  
arith232 Finding simple interest without a calculator  
mstat038 Reading the temperature from a thermometer  
arith699 Writing a signed number for a real-world situation  
alge286 Plotting integers on a number line  
arith687 Fractional position on a number line  
arith605 Plotting rational numbers on a number line  
arith691 Ordering integers  
arith016 Square root of a perfect square  
arith712 Ordering real numbers  
arith200 Integer addition: Problem type 1  
arith108 Integer addition: Problem type 2  
arith688 Integer subtraction: Problem type 1  
arith689 Integer subtraction: Problem type 2  
arith690 Integer subtraction: Problem type 3  
arith701 Word problem with addition or subtraction of integers  
arith116 Signed fraction addition or subtraction: Basic  
arith106 Signed fraction addition or subtraction: Advanced  
arith117 Signed decimal addition and subtraction  
arith234 Signed decimal addition and subtraction with 3 numbers  
arith231 Integer multiplication and division  
arith800 Multiplication of 3 or 4 integers  
arith822 Signed fraction multiplication: Basic  
arith105 Signed fraction multiplication: Advanced  
alge984 Classifying sums and products as rational or irrational  
arith702 Exponents and integers: Problem type 1  
arith703 Exponents and integers: Problem type 2  
arith704 Exponents and signed fractions  
arith118 Order of operations with integers  
arith600 Order of operations with integers and exponents  
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction

alge004 Evaluating a quadratic expression: Integers  
 arith071 Absolute value of a number  
 arith104 Operations with absolute value: Problem type 2  
 geom525 Computing distances between decimals on the number line  
 alge187 Properties of addition  
 alge188 Properties of real numbers  
 arith657 Understanding the distributive property  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 alge663 Combining like terms: Advanced  
 alge293 Combining like terms in a quadratic expression  
 alge733 Writing a one-step expression for a real-world situation  
 alge009 Additive property of equality with whole numbers  
 alge801 Additive property of equality with fractions and mixed numbers  
 alge800 Additive property of equality with decimals  
 alge010 Additive property of equality with integers  
 alge266 Additive property of equality with a negative coefficient  
 alge836 Additive property of equality with signed fractions  
 alge008 Multiplicative property of equality with whole numbers  
 alge820 Multiplicative property of equality with fractions  
 alge825 Multiplicative property of equality with decimals  
 alge797 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge803 Using two steps to solve an equation with whole numbers  
 alge006 Solving a two-step equation with integers  
 alge837 Solving a multi-step equation given in fractional form  
 alge824 Solving a two-step equation with signed decimals  
 alge200 Solving an equation to find the value of an expression  
 alge920 Introduction to solving an equation with parentheses  
 alge838 Introduction to solving an equation with variables on the same side  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution

## Module 2: Numbers and Quantities

alge002 Identifying numbers as rational or irrational  
 alge001 Identifying numbers as integers or non-integers  
 alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith029 Ordering numbers with positive exponents  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge030 Product rule with positive exponents: Multivariate  
 alge961 Introduction to the product rule with negative exponents  
 alge028 Product rule with negative exponents  
 alge827 Introduction to the quotient rule of exponents  
 alge026 Quotient of expressions involving exponents  
 alge755 Quotient rule with negative exponents: Problem type 1

alge926 Quotient rule with negative exponents: Problem type 2  
 alge826 Understanding the power rules of exponents  
 alge754 Introduction to the power rules of exponents  
 alge027 Power rules with positive exponents  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge756 Power and product rules with positive exponents  
 alge927 Power and quotient rules with positive exponents  
 alge928 Power and quotient rules with negative exponents: Problem type 1  
 alge929 Power and quotient rules with negative exponents: Problem type 2  
 alge757 Power, product, and quotient rules with negative exponents  
 arith602 Estimating a square root  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent  
 scinot002 Multiplying and dividing numbers written in scientific notation  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 unit052 Finding the absolute error and percent error of a measurement

### Module 3: Arithmetic with Polynomials and Rational Expressions

alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge932 Simplifying a sum or difference of multivariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge081 Multiplying conjugate binomials: Multivariate  
 alge032 Squaring a binomial: Univariate  
 alge068 Squaring a binomial: Multivariate  
 alge973 Multiplying binomials with negative coefficients  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge759 Dividing a polynomial by a monomial: Univariate  
 alge760 Dividing a polynomial by a monomial: Multivariate  
 alge761 Polynomial long division: Problem type 1  
 alge762 Polynomial long division: Problem type 2  
 alge763 Polynomial long division: Problem type 3  
 alge985 Closure properties of integers and polynomials  
 alge736 Introduction to the GCF of two monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge930 Greatest common factor of three univariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge949 Factoring out a binomial from a polynomial: GCF factoring, basic  
 alge923 Factoring a univariate polynomial by grouping: Problem type 1  
 alge950 Factoring a univariate polynomial by grouping: Problem type 2  
 alge951 Factoring a multivariate polynomial by grouping: Problem type 1  
 alge952 Factoring a multivariate polynomial by grouping: Problem type 2  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge942 Factoring a quadratic in two variables with leading coefficient 1  
 alge936 Factoring out a constant before factoring a quadratic  
 alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1



alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
 alge941 Factoring a quadratic with leading coefficient greater than 1: Problem type 3  
 alge978 Factoring a quadratic by the ac-method  
 alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
 alge937 Factoring a quadratic with a negative leading coefficient  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge049 Restriction on a variable in a denominator: Linear  
 alge715 Domain of a rational function: Excluded values  
 alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2  
 alge034 Simplifying a ratio of multivariate polynomials  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge057 Adding rational expressions with different denominators:  $ax, bx$   
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge622 Adding rational expressions with different denominators:  $x+a, x+b$   
 alge661 Adding rational expressions involving different quadratic denominators

#### Module 4: Creating Equations

alge208 Solving a two-step equation with signed fractions  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge986 Identifying properties used to solve a linear equation  
 alge015 Translating a sentence by using an inequality symbol  
 alge016 Translating a sentence into a one-step equation  
 alge186 Translating a sentence into a compound inequality  
 alge729 Writing a multi-step inequality for a real-world situation  
 alge730 Writing a multi-step equation for a real-world situation  
 alge748 Writing an inequality for a real-world situation  
 alge831 Translating a phrase into a one-step expression  
 alge291 Translating a phrase into a two-step expression  
 alge841 Translating a sentence into a multi-step equation  
 alge845 Translating a sentence into a one-step inequality  
 alge846 Translating a sentence into a multi-step inequality  
 alge810 Introduction to algebraic symbol manipulation  
 alge743 Algebraic symbol manipulation: Problem type 1  
 alge744 Algebraic symbol manipulation: Problem type 2  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 alge218 Solving a word problem involving rates and time conversion  
 alge796 Solving a distance, rate, time problem using a linear equation  
 arith663 Writing ratios for real-world situations  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 alge840 Solving a proportion of the form  $(x+a) \div b = c \div d$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 geom037 Similar polygons  
 geom038 Similar right triangles

geom337 Indirect measurement  
 alge822 Writing an inequality given a graph on the number line  
 alge847 Writing a compound inequality given a graph on the number line  
 alge017 Graphing a linear inequality on the number line  
 alge166 Graphing a compound inequality on the number line  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge860 Solving inequalities with no solution or all real numbers as solutions  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge861 Solving a compound linear inequality: Graph solution, advanced  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides

### Module 5: Reasoning with Equations

alge014 Solving a word problem with two unknowns using a linear equation  
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge792 Solving a word problem with three unknowns using a linear equation  
 alge842 Solving a word problem involving consecutive integers  
 alge794 Solving a value mixture problem using a linear equation  
 alge795 Solving a percent mixture problem using a linear equation  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom530 Solving equations involving vertical angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 stat803 Finding the value for a new score that will yield a given mean  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge850 Table for a linear equation  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
 alge881 Graphing a line by first finding its  $x$ - and  $y$ -intercepts  
 alge196 Graphing a line through a given point with a given slope  
 alge882 Graphing a line by first finding its slope and  $y$ -intercept  
 alge883 Graphing a line given its equation in point-slope form  
 alge198 Graphing a vertical or horizontal line  
 alge876 Identifying linear equations: Advanced  
 alge874 Identifying linear functions given ordered pairs

alge891 Rewriting a linear equation in the form  $Ax + By = C$   
alge884 Finding x- and y-intercepts given the graph of a line on a grid  
alge924 Finding x- and y-intercepts of a line given the equation: Basic  
alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
alge875 Classifying slopes given graphs of lines  
alge886 Finding slope given the graph of a line on a grid  
alge887 Finding slope given two points on the line  
alge885 Finding the slope of horizontal and vertical lines  
alge888 Finding the coordinate that yields a given slope  
alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
alge892 Writing an equation and graphing a line given its slope and y-intercept  
alge070 Writing an equation of a line given the y-intercept and another point  
alge893 Writing an equation in slope-intercept form given the slope and a point  
alge894 Writing an equation in point-slope form given the slope and a point  
alge072 Writing the equation of the line through two given points  
alge073 Writing the equations of vertical and horizontal lines through a given point  
mstat052 Identifying independent and dependent variables from equations or real-world situations  
alge990 Domain and range of a linear function that models a real-world situation  
alge989 Interpreting the parameters of a linear function that models a real-world situation  
alge992 Combining functions to write a new function that models a real-world situation  
alge987 Comparing properties of linear functions given in different forms  
alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
alge806 Application problem with a linear function: Finding a coordinate given two points  
alge895 Identifying parallel and perpendicular lines from equations  
geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
alge991 Solving a linear equation by graphing  
mstat051 Choosing a graph to fit a narrative: Advanced  
alge828 Interpreting direct variation from a graph  
alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
alge897 Writing and evaluating a function that models a real-world situation: Advanced  
alge914 Identifying solutions to a system of linear equations  
alge075 Classifying systems of linear equations from graphs  
alge725 Graphically solving a system of linear equations  
alge751 Solving a system of linear equations using substitution  
alge915 Solving a system of linear equations using elimination with addition  
alge076 Solving a system of linear equations using elimination with multiplication and addition  
alge916 Solving a system of linear equations with fractional coefficients  
alge917 Solving a system of linear equations with decimal coefficients  
alge752 Solving a 2x2 system of linear equations that is inconsistent or consistent dependent  
alge753 Solving a 3x3 system of linear equations: Problem type 1  
alge988 Identifying the operations used to create equivalent systems of equations  
alge263 Interpreting the graphs of two functions  
alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
alge184 Solving a value mixture problem using a system of linear equations  
alge224 Solving a distance, rate, time problem using a system of linear equations  
alge192 Solving a percent mixture problem using a system of linear equations  
alge172 Solving a tax rate or interest rate problem using a system of linear equations  
alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
alge912 Identifying solutions to a linear inequality in two variables  
alge720 Graphing a linear inequality in the plane: Slope-intercept form  
alge018 Graphing a linear inequality in the plane: Standard form  
alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
alge079 Graphing a system of two linear inequalities: Basic  
alge922 Graphing a system of three linear inequalities  
pcalc093 Solving a word problem using a system of linear inequalities: Problem type 1  
alge060 Solving a rational equation that simplifies to linear: Denominator x  
alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators

alge769 Solving a rational equation that simplifies to linear: Denominators a, x, or ax  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals

### Extra Material

alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge945 Factoring a perfect square trinomial with leading coefficient greater than 1  
 alge946 Factoring a perfect square trinomial in two variables  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge839 Factoring a difference of squares in two variables  
 alge948 Factoring a polynomial involving a GCF and a difference of squares: Univariate  
 alge833 Factoring a polynomial involving a GCF and a difference of squares: Multivariate  
 alge042 Factoring with repeated use of the difference of squares formula  
 alge044 Factoring a sum or difference of two cubes  
 alge681 Solving an equation written in factored form  
 alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge703 Solving a word problem using a quadratic equation with rational roots  
 alge957 Solving a quadratic equation by graphing  
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 alge958 Solving a quadratic equation using the square root property: Decimal answers, basic  
 alge959 Solving a quadratic equation using the square root property: Decimal answers, advanced  
 alge094 Completing the square  
 alge960 Solving a quadratic equation by completing the square: Decimal answers  
 alge963 Applying the quadratic formula: Decimal answers  
 alge095 Applying the quadratic formula: Exact answers  
 alge214 Discriminant of a quadratic equation  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge277 Finding the x-intercept(s) and the vertex of a parabola  
 pcalc774 Rewriting a quadratic function to find the vertex of its graph  
 alge971 Table for an exponential function  
 alge830 Evaluating an exponential function that models a real-world situation  
 alge966 Finding the initial amount and rate of change given an exponential function  
 alge968 Writing an equation that models exponential growth or decay  
 alge967 Writing an exponential function rule given a table of ordered pairs  
 alge301 Solving an exponential equation by finding common bases: Linear exponents  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest  
 alge969 Graphing an exponential function:  $f(x) = ax$   
 alge970 Graphing an exponential function:  $f(x) = a(b)^x$   
 alge993 Comparing linear, polynomial, and exponential functions  
 alge778 Using  $i$  to rewrite square roots of negative numbers  
 pcalc051 Solving a quadratic equation with complex roots  
 geom339 Perimeter of a polygon  
 geom300 Perimeter of a square or a rectangle  
 geom019 Area of a square or a rectangle  
 geom221 Finding the missing length in a figure  
 geom340 Area of a piecewise rectangular figure  
 geom142 Word problem involving the area between two rectangles  
 geom801 Area of a triangle  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom016 Circumference of a circle  
 geom301 Perimeter involving rectangles and circles  
 geom838 Circumference ratios  
 geom802 Circumference and area of a circle

geom302 Area involving rectangles and circles  
geom036 Word problem involving the area between two concentric circles  
geom214 Area involving inscribed figures  
geom031 Surface area of a cube or a rectangular prism  
geom091 Surface area of a triangular prism  
geom034 Surface area of a cylinder: Exact answers in terms of pi  
geom842 Surface area of a sphere  
geom311 Volume of a rectangular prism  
geom090 Volume of a triangular prism  
geom033 Volume of a pyramid  
geom035 Volume of a cylinder  
geom092 Word problem involving the rate of filling or emptying a cylinder  
geom086 Volume of a cone: Exact answers in terms of pi  
geom841 Volume of a sphere  
geom039 Finding supplementary and complementary angles  
set001 Set builder notation  
set002 Union and intersection of finite sets  
fun033 Variable expressions as inputs of functions: Problem type 1  
fun016 Domain and range from ordered pairs  
alge896 Graphing an integer function and finding its range for a given domain  
fun032 Identifying functions from relations  
fun010 Vertical line test  
pcalc761 Finding inputs and outputs of a function from its graph  
alge999 Finding where a function is increasing, decreasing, or constant given the graph  
pcalc752 Finding local maxima and minima of a function given the graph  
fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
alge716 Introduction to the composition of two functions  
fun012 Inverse functions: Linear, discrete  
alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced  
alge058 Complex fraction involving multivariate monomials  
alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
alge080 Simplifying a radical expression with an even exponent  
alge084 Simplifying a sum or difference of radical expressions: Multivariate  
alge086 Rationalizing the denominator of a radical expression  
alge088 Rationalizing the denominator of a radical expression using conjugates  
alge091 Solving a radical equation that simplifies to a quadratic equation: One radical  
alge132 Distance between two points in the plane: Exact answers  
alge168 Graphing an absolute value equation in the plane: Advanced  
alge175 Word problem on direct variation  
alge176 Word problem on inverse variation  
alge185 Writing an equation for a function after a vertical translation  
alge191 Midpoint of a line segment in the plane  
alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
alge213 Domain of a square root function  
alge220 Word problem on inverse proportions  
alge249 Rational exponents: Powers of powers with negative exponents  
alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
alge251 Rational exponents: Negative exponents and fractional bases  
alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
alge262 Graphing a cubic function of the form  $y = ax^3$   
alge264 Square root of a perfect square monomial  
alge273 Simplifying a higher root of a whole number  
alge275 Simplifying a radical expression with two variables  
alge276 Simplifying a product involving square roots using the distributive property: Advanced  
alge640 Simplifying a product of radical expressions: Multivariate  
alge702 Classifying the graph of a function  
alge723 How the leading coefficient affects the shape of a parabola  
alge767 Complex fraction: GCF and quadratic factoring  
alge768 Complex fraction made of sums involving rational expressions  
alge770 Solving a work problem using a rational equation  
alge773 Rational exponents: Products and quotients with negative exponents  
alge774 Special products of radical expressions: Conjugates and squaring

alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge811 Simplifying a higher radical expression: Multivariate  
 alge812 Converting between radical form and exponent form  
 alge864 Solving an absolute value equation: Problem type 1  
 alge865 Solving an absolute value equation: Problem type 2  
 alge866 Solving an absolute value equation: Problem type 3  
 alge867 Solving an absolute value equation: Problem type 4  
 alge868 Solving an absolute value inequality: Problem type 1  
 alge869 Solving an absolute value inequality: Problem type 2  
 alge870 Solving an absolute value inequality: Problem type 3  
 alge871 Solving an absolute value inequality: Problem type 4  
 alge872 Solving an absolute value inequality: Problem type 5  
 alge898 Translating the graph of an absolute value function: One step  
 alge899 Translating the graph of an absolute value function: Two steps  
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge901 How the leading coefficient affects the graph of an absolute value function  
 alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
 alge903 Identifying direct and inverse variation equations  
 alge904 Writing a direct variation equation  
 alge905 Writing an inverse variation equation  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge908 Finding the first terms of a sequence using a recursive rule  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge910 Writing a recursive rule for an arithmetic sequence  
 alge911 Writing recursive rules for arithmetic and geometric sequences  
 alge913 Graphing an absolute value equation of the form  $y = A|x - h| + k$   
 alge921 Graphing a system of two linear inequalities: Advanced  
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 alge938 Identifying direct variation from ordered pairs and writing equations  
 alge943 Writing an absolute value inequality given a graph on the number line  
 alge953 Translating the graph of a parabola: One step  
 alge954 Graphing a parabola of the form  $y = ax^2 + bx + c$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge965 Identifying linear, quadratic, and exponential functions given ordered pairs  
 alge974 Finding the vertex, x-intercepts, and axis of symmetry from the graph of a parabola  
 alge975 Domain and range from the graph of a parabola  
 alge976 Range of a quadratic function  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge981 Identifying arithmetic and geometric sequences  
 alge982 Identifying direct variation equations  
 alge994 Graphically solving a system of linear and quadratic equations  
 alge995 Solving a system of linear and quadratic equations  
 alge996 Comparing properties of quadratic functions given in different forms  
 alge997 Finding the average rate of change of a function given its equation  
 alge998 Finding the average rate of change of a function given its graph  
 arith032 Square root addition or subtraction  
 arith039 Square root multiplication: Advanced  
 arith093 Simplifying the square root of a whole number less than 100  
 arith094 Cube root of an integer  
 arith601 Square root of a rational perfect square  
 arith612 Word problem involving multiple rates  
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 fun020 Writing an equation for a function after a vertical and horizontal translation  
 fun030 Evaluating a piecewise-defined function  
 fun031 Graphing a piecewise-defined function: Problem type 1  
 geom044 Pythagorean Theorem



geom814 Angle measure in a circle graph  
mstat001 Mean of a data set  
mstat003 Mode of a data set  
mstat004 Constructing a histogram for numerical data  
mstat006 Constructing a box-and-whisker plot  
mstat007 Interpreting a line graph  
mstat008 Word problem involving permutations  
mstat009 Word problem involving combinations  
mstat010 Probability of an event  
mstat011 Area as probability  
mstat012 Probability of independent events  
mstat013 Probability of dependent events  
mstat015 Counting principle  
mstat017 Computing permutations and combinations  
mstat023 Scatter plots and correlation  
mstat024 Interpreting a bar graph  
mstat025 Finding if a question can be answered by the data  
mstat026 Introduction to the probability of an event  
mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
mstat028 Mean and median of a data set  
mstat029 How changing a value affects the mean and median  
mstat030 Sketching the line of best fit  
mstat031 Interpreting a stem-and-leaf plot  
mstat032 Probability of the union of two events  
mstat037 Constructing a line plot  
mstat040 Introduction to the counting principle  
mstat041 Interpreting a tree diagram  
mstat042 Interpreting a Venn diagram of 2 sets  
mstat043 Interpreting a Venn diagram of 3 sets  
mstat044 Interpreting a double bar graph  
mstat046 Experimental and theoretical probability  
mstat047 Introduction to expectation  
mstat048 Odds of an event  
mstat049 Computing a percentage from a table of values  
mstat053 Choosing the best measure to describe data  
mstat055 Finding the mode and range of a data set  
mstat066 Weighted mean  
mstat067 Approximating the equation of a line of best fit and making predictions  
mstat068 Predictions from the line of best fit  
mstat069 Computing residuals  
mstat070 Interpreting residual plots  
mstat071 Linear relationship and the correlation coefficient  
mstat072 Five-number summary and interquartile range  
mstat073 Using box-and-whisker plots to compare data sets  
mstat074 Identifying correlation and causation  
pcalc037 Scalar multiplication of a matrix  
pcalc038 Addition or subtraction of matrices  
pcalc082 Factorial expressions  
pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
pcalc108 Graphing a rational function: Constant or linear over linear  
pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
pcalc642 Solving a right triangle  
pcalc712 Gauss-Jordan elimination with a 2x2 matrix  
pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
pcalc740 Linear combination of matrices

pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients  
 pcalc748 Graphing a quadratic inequality: Problem type 1  
 pcalc749 Graphing a quadratic inequality: Problem type 2  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 pcalc781 Graphing a square root function  
 pcalc789 Finding the asymptotes of a rational function: Basic  
 stat009 Percentiles  
 stat020 Calculating relative frequencies in a contingency table  
 stat021 Population standard deviation  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 stat790 Permutations, combinations, and the multiplication principle for counting  
 stat801 Computations from a circle graph  
 stat802 Rejecting unreasonable claims based on average statistics  
 stat804 Interpreting a circle graph or pie chart  
 stat805 Making a reasonable inference based on proportion statistics  
 unit001 Metric distance conversion with whole number values  
 unit005 U.S. Customary unit conversion with whole number values  
 unit034 Converting between metric and U.S. Customary unit systems  
 fun019 Sum, difference, and product of two functions  
 pcalc114 Even and odd functions: Problem type 1  
 pcalc633 Amplitude and period of sine and cosine functions  
 pcalc635 Writing the equation of a sine or cosine function given its graph: Problem type 1  
 pcalc769 Translating the graph of a function: One step  
 pcalc770 Translating the graph of a function: Two steps

## B.50 Mathematics for College Readiness (Segment 2)

### Module 6: Seeing Structure in Expressions

alge001 Identifying numbers as integers or non-integers  
 alge002 Identifying numbers as rational or irrational  
 arith108 Integer addition: Problem type 2  
 arith689 Integer subtraction: Problem type 2  
 arith116 Signed fraction addition or subtraction: Basic  
 arith800 Multiplication of 3 or 4 integers  
 arith822 Signed fraction multiplication: Basic  
 arith093 Simplifying the square root of a whole number less than 100  
 alge006 Solving a two-step equation with integers  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
 alge790 Evaluating expressions with exponents of zero  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge030 Product rule with positive exponents: Multivariate  
 alge028 Product rule with negative exponents  
 alge827 Introduction to the quotient rule of exponents  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge027 Power rules with positive exponents

alge025 Power of a power rule with negative exponents  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge032 Squaring a binomial: Univariate  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1  
 alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge945 Factoring a perfect square trinomial with leading coefficient greater than 1  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge681 Solving an equation written in factored form  
 alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge094 Completing the square  
 alge946 Factoring a perfect square trinomial in two variables  
 alge839 Factoring a difference of squares in two variables  
 alge948 Factoring a polynomial involving a GCF and a difference of squares: Univariate  
 alge833 Factoring a polynomial involving a GCF and a difference of squares: Multivariate  
 alge042 Factoring with repeated use of the difference of squares formula  
 alge044 Factoring a sum or difference of two cubes  
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 alge958 Solving a quadratic equation using the square root property: Decimal answers, basic  
 alge959 Solving a quadratic equation using the square root property: Decimal answers, advanced  
 alge960 Solving a quadratic equation by completing the square: Decimal answers  
 alge963 Applying the quadratic formula: Decimal answers  
 alge095 Applying the quadratic formula: Exact answers  
 alge214 Discriminant of a quadratic equation  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge778 Using  $i$  to rewrite square roots of negative numbers  
 pcalc051 Solving a quadratic equation with complex roots  
 alge971 Table for an exponential function  
 alge967 Writing an exponential function rule given a table of ordered pairs  
 alge301 Solving an exponential equation by finding common bases: Linear exponents  
 alge741 Finding the final amount in a word problem on compound interest  
 alge993 Comparing linear, polynomial, and exponential functions

### Module 7: Building and Interpreting Functions

set001 Set builder notation  
 set002 Union and intersection of finite sets  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 fun016 Domain and range from ordered pairs  
 alge896 Graphing an integer function and finding its range for a given domain  
 pcalc761 Finding inputs and outputs of a function from its graph  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 pcalc752 Finding local maxima and minima of a function given the graph  
 pcalc114 Even and odd functions: Problem type 1  
 fun019 Sum, difference, and product of two functions  
 alge880 Graphing a line given its equation in standard form  
 alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
 alge881 Graphing a line by first finding its  $x$ - and  $y$ -intercepts  
 alge196 Graphing a line through a given point with a given slope  
 alge882 Graphing a line by first finding its slope and  $y$ -intercept

alge883 Graphing a line given its equation in point-slope form  
 alge198 Graphing a vertical or horizontal line  
 alge876 Identifying linear equations: Advanced  
 alge874 Identifying linear functions given ordered pairs  
 alge891 Rewriting a linear equation in the form  $Ax + By = C$   
 alge924 Finding x- and y-intercepts of a line given the equation: Basic  
 alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines  
 alge888 Finding the coordinate that yields a given slope  
 alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
 alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
 alge892 Writing an equation and graphing a line given its slope and y-intercept  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge893 Writing an equation in slope-intercept form given the slope and a point  
 alge894 Writing an equation in point-slope form given the slope and a point  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 alge990 Domain and range of a linear function that models a real-world situation  
 alge828 Interpreting direct variation from a graph  
 alge989 Interpreting the parameters of a linear function that models a real-world situation  
 alge987 Comparing properties of linear functions given in different forms  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 alge991 Solving a linear equation by graphing  
 fun030 Evaluating a piecewise-defined function  
 fun031 Graphing a piecewise-defined function: Problem type 1  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge997 Finding the average rate of change of a function given its equation  
 alge998 Finding the average rate of change of a function given its graph  
 alge913 Graphing an absolute value equation of the form  $y = A|x - h| + k$   
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge901 How the leading coefficient affects the graph of an absolute value function  
 alge954 Graphing a parabola of the form  $y = ax^2$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 alge702 Classifying the graph of a function  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge975 Domain and range from the graph of a parabola  
 alge974 Finding the vertex, x-intercepts, and axis of symmetry from the graph of a parabola  
 alge277 Finding the x-intercept(s) and the vertex of a parabola  
 pcalc774 Rewriting a quadratic function to find the vertex of its graph  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge976 Range of a quadratic function  
 alge996 Comparing properties of quadratic functions given in different forms  
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients  
 alge957 Solving a quadratic equation by graphing  
 alge965 Identifying linear, quadratic, and exponential functions given ordered pairs  
 pcalc748 Graphing a quadratic inequality: Problem type 1  
 pcalc749 Graphing a quadratic inequality: Problem type 2  
 alge953 Translating the graph of a parabola: One step  
 alge898 Translating the graph of an absolute value function: One step  
 alge899 Translating the graph of an absolute value function: Two steps  
 pcalc769 Translating the graph of a function: One step  
 pcalc770 Translating the graph of a function: Two steps

fun012 Inverse functions: Linear, discrete  
 alge185 Writing an equation for a function after a vertical translation  
 fun020 Writing an equation for a function after a vertical and horizontal translation  
 alge716 Introduction to the composition of two functions  
 alge992 Combining functions to write a new function that models a real-world situation  
 alge830 Evaluating an exponential function that models a real-world situation  
 alge968 Writing an equation that models exponential growth or decay  
 alge966 Finding the initial amount and rate of change given an exponential function  
 alge969 Graphing an exponential function:  $f(x) = ax$   
 alge970 Graphing an exponential function:  $f(x) = a(b)^x$   
 alge213 Domain of a square root function  
 pcalc781 Graphing a square root function  
 pcalc789 Finding the asymptotes of a rational function: Basic  
 pcalc108 Graphing a rational function: Constant or linear over linear  
 pcalc633 Amplitude and period of sine and cosine functions  
 pcalc635 Writing the equation of a sine or cosine function given its graph: Problem type 1

### Module 8: Expressing Geometric Properties with Equations

geom339 Perimeter of a polygon  
 geom300 Perimeter of a square or a rectangle  
 geom019 Area of a square or a rectangle  
 geom221 Finding the missing length in a figure  
 geom340 Area of a piecewise rectangular figure  
 geom142 Word problem involving the area between two rectangles  
 geom801 Area of a triangle  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom016 Circumference of a circle  
 geom301 Perimeter involving rectangles and circles  
 geom838 Circumference ratios  
 geom802 Circumference and area of a circle  
 geom302 Area involving rectangles and circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom031 Surface area of a cube or a rectangular prism  
 geom091 Surface area of a triangular prism  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom842 Surface area of a sphere  
 geom311 Volume of a rectangular prism  
 geom090 Volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom035 Volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom841 Volume of a sphere  
 geom039 Finding supplementary and complementary angles  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom530 Solving equations involving vertical angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 alge703 Solving a word problem using a quadratic equation with rational roots  
 alge895 Identifying parallel and perpendicular lines from equations  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 geom044 Pythagorean Theorem  
 alge132 Distance between two points in the plane: Exact answers  
 alge191 Midpoint of a line segment in the plane

**Module 9: The Real Number System**

alge984 Classifying sums and products as rational or irrational  
 arith016 Square root of a perfect square  
 arith602 Estimating a square root  
 arith601 Square root of a rational perfect square  
 arith094 Cube root of an integer  
 alge264 Square root of a perfect square monomial  
 alge080 Simplifying a radical expression with an even exponent  
 alge275 Simplifying a radical expression with two variables  
 alge273 Simplifying a higher root of a whole number  
 alge811 Simplifying a higher radical expression: Multivariate  
 arith032 Square root addition or subtraction  
 alge084 Simplifying a sum or difference of radical expressions: Multivariate  
 arith039 Square root multiplication: Advanced  
 alge640 Simplifying a product of radical expressions: Multivariate  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge086 Rationalizing the denominator of a radical expression  
 alge088 Rationalizing the denominator of a radical expression using conjugates  
 alge812 Converting between radical form and exponent form  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge249 Rational exponents: Powers of powers with negative exponents

**Module 10: Interpreting Categorical and Quantitative Data**

mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat007 Interpreting a line graph  
 stat804 Interpreting a circle graph or pie chart  
 mstat025 Finding if a question can be answered by the data  
 mstat049 Computing a percentage from a table of values  
 stat020 Calculating relative frequencies in a contingency table  
 mstat023 Scatter plots and correlation  
 mstat030 Sketching the line of best fit  
 mstat068 Predictions from the line of best fit  
 mstat067 Approximating the equation of a line of best fit and making predictions  
 mstat069 Computing residuals  
 mstat070 Interpreting residual plots  
 mstat071 Linear relationship and the correlation coefficient  
 mstat074 Identifying correlation and causation

**Extra**

arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 alge218 Solving a word problem involving rates and time conversion  
 alge796 Solving a distance, rate, time problem using a linear equation  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 unit052 Finding the absolute error and percent error of a measurement  
 alge015 Translating a sentence by using an inequality symbol  
 alge016 Translating a sentence into a one-step equation



alge186 Translating a sentence into a compound inequality  
alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
alge729 Writing a multi-step inequality for a real-world situation  
alge730 Writing a multi-step equation for a real-world situation  
alge748 Writing an inequality for a real-world situation  
alge831 Translating a phrase into a one-step expression  
alge841 Translating a sentence into a multi-step equation  
alge845 Translating a sentence into a one-step inequality  
alge846 Translating a sentence into a multi-step inequality  
alge897 Writing and evaluating a function that models a real-world situation: Advanced  
arith078 Rounding to tens or hundreds  
arith123 Rounding to hundreds or thousands  
arith101 Estimating a sum of whole numbers  
arith233 Introduction to exponents  
arith692 Writing expressions using exponents  
arith683 Power of 10: Positive exponent  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
alge731 Evaluating an algebraic expression: Whole numbers with two operations  
alge832 Evaluating an algebraic expression: Whole number operations and exponents  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith070 Least common multiple of 2 numbers  
arith240 Word problem with common multiples  
arith212 Equivalent fractions  
arith067 Simplifying a fraction  
arith092 Using a common denominator to order fractions  
arith618 Addition or subtraction of fractions with the same denominator  
arith801 Finding the LCD of two fractions  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
arith100 Fractional part of a circle  
arith079 Product of a unit fraction and a whole number  
arith086 Product of a fraction and a whole number: Problem type 1  
arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith697 Mixed arithmetic operations with fractions  
arith095 Multi-step word problem involving fractions and multiplication  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith084 Addition of mixed numbers with the same denominator and carry  
arith216 Subtraction of mixed numbers with the same denominator and borrowing  
arith085 Addition or subtraction of mixed numbers with different denominators  
arith020 Mixed number multiplication: Problem type 1  
arith068 Mixed number division  
arith110 Decimal place value: Tenths and hundredths  
arith221 Rounding decimals  
arith129 Introduction to ordering decimals  
arith608 Ordering decimals  
arith609 Ordering fractions and decimals  
arith222 Converting a fraction to a terminating decimal  
arith089 Converting a fraction to a repeating decimal  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith624 Addition of aligned decimals  
arith625 Subtraction of aligned decimals

arith131 Estimating a decimal sum or difference  
arith017 Multiplication of a decimal by a whole number  
arith082 Multiplication of a decimal by a power of ten  
arith055 Decimal multiplication: Problem type 1  
arith081 Division of a decimal by a whole number  
arith083 Division of a decimal by a power of ten  
arith019 Division of a decimal by a 2-digit decimal  
arith626 Word problem with one decimal operation: Problem type 1  
arith627 Word problem with one decimal operation: Problem type 2  
arith628 Word problem with multiple decimal operations: Problem type 1  
mstat038 Reading the temperature from a thermometer  
arith699 Writing a signed number for a real-world situation  
alge286 Plotting integers on a number line  
arith687 Fractional position on a number line  
arith605 Plotting rational numbers on a number line  
arith691 Ordering integers  
arith712 Ordering real numbers  
arith200 Integer addition: Problem type 1  
arith688 Integer subtraction: Problem type 1  
arith690 Integer subtraction: Problem type 3  
arith701 Word problem with addition or subtraction of integers  
arith106 Signed fraction addition or subtraction: Advanced  
arith117 Signed decimal addition and subtraction  
arith234 Signed decimal addition and subtraction with 3 numbers  
arith231 Integer multiplication and division  
arith105 Signed fraction multiplication: Advanced  
arith702 Exponents and integers: Problem type 1  
arith703 Exponents and integers: Problem type 2  
arith704 Exponents and signed fractions  
arith118 Order of operations with integers  
arith600 Order of operations with integers and exponents  
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
alge004 Evaluating a quadratic expression: Integers  
arith071 Absolute value of a number  
arith104 Operations with absolute value: Problem type 2  
geom525 Computing distances between decimals on the number line  
alge187 Properties of addition  
alge188 Properties of real numbers  
arith657 Understanding the distributive property  
alge606 Distributive property: Whole number coefficients  
alge604 Distributive property: Integer coefficients  
alge700 Combining like terms: Whole number coefficients  
alge607 Combining like terms: Integer coefficients  
alge663 Combining like terms: Advanced  
alge293 Combining like terms in a quadratic expression  
alge009 Additive property of equality with whole numbers  
alge801 Additive property of equality with fractions and mixed numbers  
alge800 Additive property of equality with decimals  
alge010 Additive property of equality with integers  
alge266 Additive property of equality with a negative coefficient  
alge836 Additive property of equality with signed fractions  
alge008 Multiplicative property of equality with whole numbers  
alge820 Multiplicative property of equality with fractions  
alge825 Multiplicative property of equality with decimals  
alge797 Multiplicative property of equality with integers  
alge012 Multiplicative property of equality with signed fractions  
alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
alge803 Using two steps to solve an equation with whole numbers  
alge837 Solving a multi-step equation given in fractional form  
alge208 Solving a two-step equation with signed fractions  
alge824 Solving a two-step equation with signed decimals  
alge200 Solving an equation to find the value of an expression

alge920 Introduction to solving an equation with parentheses  
alge838 Introduction to solving an equation with variables on the same side  
alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
alge742 Solving equations with zero, one, or infinitely many solutions  
alge986 Identifying properties used to solve a linear equation  
alge810 Introduction to algebraic symbol manipulation  
alge743 Algebraic symbol manipulation: Problem type 1  
alge744 Algebraic symbol manipulation: Problem type 2  
alge733 Writing a one-step expression for a real-world situation  
alge291 Translating a phrase into a two-step expression  
alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
alge014 Solving a word problem with two unknowns using a linear equation  
alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
alge792 Solving a word problem with three unknowns using a linear equation  
alge842 Solving a word problem involving consecutive integers  
alge794 Solving a value mixture problem using a linear equation  
alge795 Solving a percent mixture problem using a linear equation  
stat803 Finding the value for a new score that will yield a given mean  
arith663 Writing ratios for real-world situations  
alge272 Solving a proportion of the form  $x/a = b/c$   
alge840 Solving a proportion of the form  $(x+a) \div b = c \div d$   
alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
arith064 Solving a word problem on proportions using a unit rate  
arith610 Word problem on proportions: Problem type 1  
arith611 Word problem on proportions: Problem type 2  
geom037 Similar polygons  
geom038 Similar right triangles  
geom337 Indirect measurement  
arith226 Converting between percentages and decimals  
arith090 Converting a percentage to a fraction in simplest form  
arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
arith069 Writing a ratio as a percentage without a calculator  
arith030 Finding a percentage of a whole number without a calculator: Basic  
arith698 Applying the percent equation  
arith074 Finding the sale price without a calculator given the original price and percent discount  
arith031 Finding the original price given the sale price and percent discount  
arith225 Finding the percentage increase or decrease: Advanced  
arith232 Finding simple interest without a calculator  
unit005 U.S. Customary unit conversion with whole number values  
unit001 Metric distance conversion with whole number values  
unit034 Converting between metric and U.S. Customary unit systems  
alge864 Solving an absolute value equation: Problem type 1  
alge865 Solving an absolute value equation: Problem type 2  
alge866 Solving an absolute value equation: Problem type 3  
alge867 Solving an absolute value equation: Problem type 4  
alge017 Graphing a linear inequality on the number line  
alge822 Writing an inequality given a graph on the number line  
alge166 Graphing a compound inequality on the number line  
alge847 Writing a compound inequality given a graph on the number line  
alge844 Identifying solutions to a two-step linear inequality in one variable  
alge848 Additive property of inequality with whole numbers  
alge849 Additive property of inequality with integers

alge852 Additive property of inequality with signed fractions  
alge853 Additive property of inequality with signed decimals  
alge854 Multiplicative property of inequality with integers  
alge964 Multiplicative property of inequality with signed fractions  
alge855 Solving a two-step linear inequality: Problem type 1  
alge856 Solving a two-step linear inequality: Problem type 2  
alge857 Solving a two-step linear inequality with a fractional coefficient  
alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
alge860 Solving inequalities with no solution or all real numbers as solutions  
alge746 Solving a compound linear inequality: Graph solution, basic  
alge861 Solving a compound linear inequality: Graph solution, advanced  
alge749 Solving a decimal word problem using a two-step linear inequality  
alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
alge943 Writing an absolute value inequality given a graph on the number line  
alge868 Solving an absolute value inequality: Problem type 1  
alge869 Solving an absolute value inequality: Problem type 2  
alge870 Solving an absolute value inequality: Problem type 3  
alge871 Solving an absolute value inequality: Problem type 4  
alge872 Solving an absolute value inequality: Problem type 5  
alge064 Reading a point in the coordinate plane  
alge067 Plotting a point in the coordinate plane  
alge873 Identifying solutions to a linear equation in two variables  
alge850 Table for a linear equation  
alge066 Finding a solution to a linear equation in two variables  
alge982 Identifying direct variation equations  
alge938 Identifying direct variation from ordered pairs and writing equations  
alge904 Writing a direct variation equation  
alge175 Word problem on direct variation  
alge925 Finding the next terms of an arithmetic sequence with whole numbers  
alge906 Finding the next terms of an arithmetic sequence with integers  
alge979 Identifying arithmetic sequences and finding the common difference  
alge931 Finding a specified term of an arithmetic sequence given the first terms  
pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
alge909 Writing an explicit rule for an arithmetic sequence  
alge908 Finding the first terms of a sequence using a recursive rule  
alge910 Writing a recursive rule for an arithmetic sequence  
alge914 Identifying solutions to a system of linear equations  
alge075 Classifying systems of linear equations from graphs  
alge725 Graphically solving a system of linear equations  
alge751 Solving a system of linear equations using substitution  
alge915 Solving a system of linear equations using elimination with addition  
alge076 Solving a system of linear equations using elimination with multiplication and addition  
alge916 Solving a system of linear equations with fractional coefficients  
alge917 Solving a system of linear equations with decimal coefficients  
alge752 Solving a 2x2 system of linear equations that is inconsistent or consistent dependent  
alge753 Solving a 3x3 system of linear equations: Problem type 1  
alge988 Identifying the operations used to create equivalent systems of equations  
alge263 Interpreting the graphs of two functions  
alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
alge184 Solving a value mixture problem using a system of linear equations  
alge224 Solving a distance, rate, time problem using a system of linear equations  
alge192 Solving a percent mixture problem using a system of linear equations  
alge172 Solving a tax rate or interest rate problem using a system of linear equations  
alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
alge912 Identifying solutions to a linear inequality in two variables  
alge720 Graphing a linear inequality in the plane: Slope-intercept form  
alge018 Graphing a linear inequality in the plane: Standard form  
alge225 Graphing a linear inequality in the plane: Vertical or horizontal line

alge079 Graphing a system of two linear inequalities: Basic  
alge921 Graphing a system of two linear inequalities: Advanced  
alge922 Graphing a system of three linear inequalities  
pcalc093 Solving a word problem using a system of linear inequalities: Problem type 1  
pcalc037 Scalar multiplication of a matrix  
pcalc038 Addition or subtraction of matrices  
pcalc740 Linear combination of matrices  
pcalc712 Gauss-Jordan elimination with a 2x2 matrix  
arith684 Power of 10: Negative exponent  
arith043 Evaluating an expression with a negative exponent: Negative integer base  
arith029 Ordering numbers with positive exponents  
arith024 Ordering numbers with negative exponents  
alge821 Understanding the product rule of exponents  
alge024 Introduction to the product rule of exponents  
alge961 Introduction to the product rule with negative exponents  
alge026 Quotient of expressions involving exponents  
alge926 Quotient rule with negative exponents: Problem type 2  
alge826 Understanding the power rules of exponents  
alge754 Introduction to the power rules of exponents  
alge799 Power rules with negative exponents  
alge756 Power and product rules with positive exponents  
alge927 Power and quotient rules with positive exponents  
alge928 Power and quotient rules with negative exponents: Problem type 1  
alge929 Power and quotient rules with negative exponents: Problem type 2  
alge757 Power, product, and quotient rules with negative exponents  
arith036 Scientific notation with positive exponent  
arith037 Scientific notation with negative exponent  
scinot002 Multiplying and dividing numbers written in scientific notation  
alge933 Finding the next terms of a geometric sequence with whole numbers  
alge907 Finding the next terms of a geometric sequence with signed numbers  
alge981 Identifying arithmetic and geometric sequences  
alge980 Identifying geometric sequences and finding the common ratio  
alge934 Finding a specified term of a geometric sequence given the first terms  
pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
alge911 Writing recursive rules for arithmetic and geometric sequences  
alge758 Degree and leading coefficient of a univariate polynomial  
alge031 Degree of a multivariate polynomial  
alge029 Simplifying a sum or difference of three univariate polynomials  
alge932 Simplifying a sum or difference of multivariate polynomials  
alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
alge835 Multiplying a multivariate polynomial by a monomial  
alge033 Multiplying binomials with leading coefficients of 1  
alge765 Multiplying binomials in two variables  
alge764 Multiplying conjugate binomials: Univariate  
alge081 Multiplying conjugate binomials: Multivariate  
alge068 Squaring a binomial: Multivariate  
alge973 Multiplying binomials with negative coefficients  
alge935 Multiplication involving binomials and trinomials in one variable  
alge180 Multiplication involving binomials and trinomials in two variables  
alge759 Dividing a polynomial by a monomial: Univariate  
alge760 Dividing a polynomial by a monomial: Multivariate  
alge761 Polynomial long division: Problem type 1  
alge762 Polynomial long division: Problem type 2  
alge763 Polynomial long division: Problem type 3  
alge985 Closure properties of integers and polynomials  
alge736 Introduction to the GCF of two monomials  
alge037 Greatest common factor of two multivariate monomials  
alge930 Greatest common factor of three univariate monomials  
alge739 Factoring out a monomial from a polynomial: Multivariate  
alge949 Factoring out a binomial from a polynomial: GCF factoring, basic

alge923 Factoring a univariate polynomial by grouping: Problem type 1  
 alge950 Factoring a univariate polynomial by grouping: Problem type 2  
 alge951 Factoring a multivariate polynomial by grouping: Problem type 1  
 alge952 Factoring a multivariate polynomial by grouping: Problem type 2  
 alge942 Factoring a quadratic in two variables with leading coefficient 1  
 alge936 Factoring out a constant before factoring a quadratic  
 alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
 alge941 Factoring a quadratic with leading coefficient greater than 1: Problem type 3  
 alge978 Factoring a quadratic by the ac-method  
 alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
 alge937 Factoring a quadratic with a negative leading coefficient  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge994 Graphically solving a system of linear and quadratic equations  
 alge995 Solving a system of linear and quadratic equations  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge091 Solving a radical equation that simplifies to a quadratic equation: One radical  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc642 Solving a right triangle  
 alge049 Restriction on a variable in a denominator: Linear  
 alge715 Domain of a rational function: Excluded values  
 alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2  
 alge034 Simplifying a ratio of multivariate polynomials  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge057 Adding rational expressions with different denominators:  $ax$ ,  $bx$   
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge622 Adding rational expressions with different denominators:  $x+a$ ,  $x+b$   
 alge661 Adding rational expressions involving different quadratic denominators  
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 alge058 Complex fraction involving multivariate monomials  
 alge767 Complex fraction: GCF and quadratic factoring  
 alge768 Complex fraction made of sums involving rational expressions  
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced  
 arith612 Word problem involving multiple rates  
 alge770 Solving a work problem using a rational equation  
 alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
 alge903 Identifying direct and inverse variation equations  
 alge905 Writing an inverse variation equation  
 alge176 Word problem on inverse variation  
 alge220 Word problem on inverse proportions  
 mstat037 Constructing a line plot  
 stat801 Computations from a circle graph



geom814 Angle measure in a circle graph  
 mstat031 Interpreting a stem-and-leaf plot  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat001 Mean of a data set  
 mstat028 Mean and median of a data set  
 mstat066 Weighted mean  
 mstat029 How changing a value affects the mean and median  
 mstat053 Choosing the best measure to describe data  
 stat802 Rejecting unreasonable claims based on average statistics  
 stat805 Making a reasonable inference based on proportion statistics  
 stat009 Percentiles  
 mstat072 Five-number summary and interquartile range  
 stat021 Population standard deviation  
 mstat042 Interpreting a Venn diagram of 2 sets  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 stat790 Permutations, combinations, and the multiplication principle for counting  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat032 Probability of the union of two events

## B.51 Math for College Success

### Arithmetic Readiness

arith692 Writing expressions using exponents  
 arith233 Introduction to exponents  
 arith683 Power of 10: Positive exponent  
 arith048 Order of operations with whole numbers  
 arith051 Order of operations with whole numbers and grouping symbols  
 arith693 Order of operations with whole numbers and exponents: Basic  
 arith713 Order of operations with whole numbers and exponents: Advanced  
 alge285 Evaluating an algebraic expression: Whole numbers with two operations  
 alge832 Evaluating an algebraic expression: Whole number operations and exponents  
 arith056 Factors  
 arith034 Prime numbers  
 arith035 Prime factorization  
 arith033 Greatest common factor of 2 numbers  
 arith070 Least common multiple of 2 numbers  
 arith804 Least common multiple of 3 numbers

arith240 Word problem with common multiples  
arith064 Solving a word problem on proportions using a unit rate  
arith212 Equivalent fractions  
arith067 Simplifying a fraction  
arith618 Addition or subtraction of fractions with the same denominator  
arith802 Addition or subtraction of fractions with the same denominator and simplification  
arith801 Finding the LCD of two fractions  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
arith803 Addition and subtraction of 3 fractions with different denominators  
arith805 Word problem involving addition or subtraction of fractions with different denominators  
arith100 Fractional part of a circle  
arith079 Product of a unit fraction and a whole number  
arith086 Product of a fraction and a whole number: Problem type 1  
arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith812 Product of a fraction and a whole number: Problem type 2  
arith813 Multiplication of 3 fractions  
arith821 Exponents and fractions  
arith818 Word problem involving fractions and multiplication  
arith095 Multi-step word problem involving fractions and multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith819 Word problem involving fractions and division  
arith859 Order of operations with fractions: Problem type 1  
arith860 Order of operations with fractions: Problem type 2  
arith861 Order of operations with fractions: Problem type 3  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith084 Addition of mixed numbers with the same denominator and carry  
arith216 Subtraction of mixed numbers with the same denominator and borrowing  
arith806 Addition or subtraction of mixed numbers with different denominators and no carry or borrow  
arith808 Addition of mixed numbers with different denominators and carry  
arith809 Subtraction of mixed numbers with different denominators and borrowing  
arith807 Addition and subtraction of 3 mixed numbers with different denominators  
arith810 Word problem involving addition or subtraction of mixed numbers with different denominators  
arith815 Mixed number multiplication  
arith816 Multiplication of a mixed number and a whole number  
arith817 Division with a mixed number and a whole number  
arith068 Mixed number division  
arith820 Word problem involving multiplication or division with mixed numbers  
arith110 Decimal place value: Tenths and hundredths  
arith221 Rounding decimals  
arith718 Converting a decimal to a proper fraction in simplest form: Basic  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith722 Converting a decimal to a mixed number and an improper fraction in simplest form: Basic  
arith724 Converting a decimal to a mixed number and an improper fraction in simplest form: Advanced  
arith013 Decimal addition with 3 numbers  
arith735 Decimal subtraction: Basic  
arith736 Decimal subtraction: Advanced  
arith737 Decimal addition and subtraction with 3 or more numbers  
arith131 Estimating a decimal sum or difference  
arith133 Word problem with addition of 3 or 4 decimals and whole numbers  
arith134 Word problem with subtraction of a whole number and a decimal: Regrouping with zeros  
arith017 Multiplication of a decimal by a whole number  
arith055 Decimal multiplication: Problem type 1  
arith082 Multiplication of a decimal by a power of ten  
arith752 Estimating a product of decimals  
arith753 Squaring decimal bases: Products greater than 0.1  
arith741 Exponents and decimals: Products less than 0.1  
arith137 Word problem with multiplication of two decimals

arith224 Word problem with decimal addition and multiplication  
arith081 Division of a decimal by a whole number  
arith743 Division of a decimal by a 1-digit decimal  
arith019 Division of a decimal by a 2-digit decimal  
arith083 Division of a decimal by a power of ten  
arith138 Word problem with division of two decimals  
arith227 Word problem with decimal subtraction and division  
arith727 Converting a fraction to a terminating decimal: Basic  
arith728 Converting a fraction to a terminating decimal: Advanced  
arith730 Converting a fraction to a repeating decimal: Basic  
arith731 Converting a fraction to a repeating decimal: Advanced  
arith111 Converting a mixed number to a terminating decimal: Basic  
arith112 Converting a mixed number to a terminating decimal: Advanced  
arith720 Order of operations with decimals: Problem type 1  
arith746 Order of operations with decimals: Problem type 2  
arith747 Order of operations with decimals: Problem type 3  
arith836 Converting a fraction with a denominator of 100 to a percentage  
arith837 Converting a percentage to a fraction with a denominator of 100  
arith723 Introduction to converting a percentage to a decimal  
arith833 Introduction to converting a decimal to a percentage  
arith834 Converting between percentages and decimals  
arith841 Converting a mixed number percentage to a decimal  
arith835 Converting between percentages and decimals in a real-world situation  
arith090 Converting a percentage to a fraction in simplest form  
arith839 Converting a decimal percentage to a fraction  
arith838 Converting a fraction to a percentage: Denominator of 4, 5, or 10  
arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
arith843 Using a calculator to convert a fraction to a rounded percentage  
arith842 Converting a fraction to a percentage in a real-world situation  
mstat003 Mode of a data set  
arith103 Average of two numbers  
mstat001 Mean of a data set  
mstat028 Mean and median of a data set  
mstat066 Weighted mean  
mstat024 Interpreting a bar graph  
mstat007 Interpreting a line graph  
geom339 Perimeter of a polygon  
geom300 Perimeter of a square or a rectangle  
geom618 Perimeter of a polygon involving mixed numbers and fractions  
geom078 Sides of polygons having the same perimeter  
geom019 Area of a square or a rectangle  
geom350 Distinguishing between the area and perimeter of a rectangle  
geom620 Area of a rectangle involving fractions  
geom619 Area of a rectangle involving mixed numbers and fractions  
geom221 Finding the missing length in a figure  
geom340 Area of a piecewise rectangular figure  
geom142 Word problem involving the area between two rectangles  
geom801 Area of a triangle  
geom022 Area of a parallelogram  
geom023 Area of a trapezoid  
geom016 Circumference of a circle  
geom301 Perimeter involving rectangles and circles  
geom802 Circumference and area of a circle  
geom302 Area involving rectangles and circles  
geom036 Word problem involving the area between two concentric circles  
geom214 Area involving inscribed figures  
geom311 Volume of a rectangular prism  
geom090 Volume of a triangular prism  
geom033 Volume of a pyramid  
geom035 Volume of a cylinder  
geom092 Word problem involving the rate of filling or emptying a cylinder  
geom622 Volume of a cone

geom841 Volume of a sphere  
 geom031 Surface area of a cube or a rectangular prism  
 geom091 Surface area of a triangular prism  
 geom621 Surface area of a cylinder  
 geom842 Surface area of a sphere  
 geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles

### Real Numbers and Algebraic Expressions

arith687 Fractional position on a number line  
 arith829 Reading decimal position on a number line: Tenths  
 arith830 Reading decimal position on a number line: Hundredths  
 alge286 Plotting integers on a number line  
 arith605 Plotting rational numbers on a number line  
 arith699 Writing a signed number for a real-world situation  
 arith092 Using a common denominator to order fractions  
 arith129 Introduction to ordering decimals  
 arith608 Ordering decimals  
 arith609 Ordering fractions and decimals  
 arith691 Ordering integers  
 arith016 Square root of a perfect square  
 arith763 Using a calculator to approximate a square root  
 arith602 Estimating a square root  
 arith712 Ordering real numbers  
 arith071 Absolute value of a number  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith754 Addition and subtraction with 3 integers  
 arith755 Addition and subtraction with 4 or 5 integers  
 arith701 Word problem with addition or subtraction of integers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers  
 arith711 Division involving zero  
 alge001 Identifying numbers as integers or non-integers  
 alge002 Identifying numbers as rational or irrational  
 arith116 Signed fraction addition or subtraction: Basic  
 arith864 Signed fraction subtraction involving double negation  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith811 Addition and subtraction of 3 fractions involving signs  
 arith822 Signed fraction multiplication: Basic  
 arith105 Signed fraction multiplication: Advanced  
 arith814 Signed fraction division  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 arith750 Signed decimal multiplication  
 arith751 Signed decimal division  
 arith104 Operations with absolute value: Problem type 2  
 geom525 Computing distances between decimals on the number line  
 arith702 Exponents and integers: Problem type 1  
 arith703 Exponents and integers: Problem type 2  
 arith704 Exponents and signed fractions  
 arith118 Order of operations with integers  
 arith600 Order of operations with integers and exponents  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction

alge004 Evaluating a quadratic expression: Integers  
 alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
 alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
 alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 arith655 Introduction to properties of addition  
 alge187 Properties of addition  
 arith657 Understanding the distributive property  
 alge310 Multiplying a constant and a linear monomial  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 arith656 Introduction to properties of multiplication  
 alge188 Properties of real numbers  
 alge608 Using distribution and combining like terms to simplify: Univariate  
 alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
 alge293 Combining like terms in a quadratic expression

### Linear Equations

alge009 Additive property of equality with whole numbers  
 alge801 Additive property of equality with fractions and mixed numbers  
 alge800 Additive property of equality with decimals  
 alge010 Additive property of equality with integers  
 alge836 Additive property of equality with signed fractions  
 alge008 Multiplicative property of equality with whole numbers  
 alge820 Multiplicative property of equality with fractions  
 alge825 Multiplicative property of equality with decimals  
 alge797 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge803 Using two steps to solve an equation with whole numbers  
 alge266 Additive property of equality with a negative coefficient  
 alge006 Solving a two-step equation with integers  
 alge200 Solving an equation to find the value of an expression  
 alge920 Introduction to solving an equation with parentheses  
 alge837 Solving a multi-step equation given in fractional form  
 alge986 Identifying properties used to solve a linear equation  
 alge824 Solving a two-step equation with signed decimals  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
 alge208 Solving a two-step equation with signed fractions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge603 Introduction to solving an absolute value equation  
 alge864 Solving an absolute value equation: Problem type 1  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 alge840 Solving a proportion of the form  $(x+a)/b = c/d$

alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
 alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
 alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
 alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
 alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
 alge518 Solving for a variable inside parentheses in terms of other variables  
 alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
 alge733 Writing a one-step expression for a real-world situation  
 alge831 Translating a phrase into a one-step expression  
 alge291 Translating a phrase into a two-step expression  
 alge016 Translating a sentence into a one-step equation  
 alge841 Translating a sentence into a multi-step equation  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge792 Solving a word problem with three unknowns using a linear equation  
 alge842 Solving a word problem involving consecutive integers  
 alge730 Writing a multi-step equation for a real-world situation  
 alge794 Solving a value mixture problem using a linear equation  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 alge218 Solving a word problem involving rates and time conversion  
 alge796 Solving a distance, rate, time problem using a linear equation  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom218 Finding the radius or the diameter of a circle given its circumference  
 geom530 Solving equations involving vertical angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom623 Finding angle measures of a triangle given angles with variables  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 stat803 Finding the value for a new score that will yield a given mean  
 arith840 Finding a percentage of a whole number  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith844 Finding a percentage of a whole number without a calculator: Advanced  
 arith862 Applying the percent equation: Problem type 1  
 arith863 Applying the percent equation: Problem type 2  
 arith845 Finding a percentage of a total amount: Real-world situations  
 arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount  
 arith857 Estimating a tip without a calculator  
 arith069 Writing a ratio as a percentage without a calculator  
 mstat049 Computing a percentage from a table of values  
 arith850 Finding the rate of a tax or commission  
 arith849 Finding the total amount given the percentage of a partial amount  
 arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
 arith851 Finding the final amount given the original amount and a percentage increase or decrease  
 arith847 Finding the sale price given the original price and percent discount  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith848 Finding the total cost including tax or markup  
 arith855 Finding the original amount given the result of a percentage increase or decrease  
 arith031 Finding the original price given the sale price and percent discount  
 arith858 Finding the percentage increase or decrease: Basic  
 arith225 Finding the percentage increase or decrease: Advanced  
 unit052 Finding the absolute error and percent error of a measurement  
 arith854 Computing a percent mixture  
 alge795 Solving a percent mixture problem using a linear equation  
 stat804 Interpreting a circle graph or pie chart  
 arith856 Finding a percentage of a total amount in a circle graph



stat801 Computations from a circle graph  
 arith232 Finding simple interest without a calculator

### Linear Inequalities

alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge846 Translating a sentence into a multi-step inequality  
 alge748 Writing an inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line  
 set001 Set builder notation  
 set004 Set builder and interval notation  
 set002 Union and intersection of finite sets  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge860 Solving inequalities with no solution or all real numbers as solutions  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge747 Solving a compound linear inequality: Interval notation  
 alge868 Solving an absolute value inequality: Problem type 1  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides

### Lines and Functions

alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge850 Table for a linear equation  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 alge191 Midpoint of a line segment in the plane  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
 alge924 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Basic  
 alge210 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Advanced  
 alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
 alge881 Graphing a line by first finding its  $x$ - and  $y$ -intercepts  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line

alge885 Finding the slope of horizontal and vertical lines  
 alge888 Finding the coordinate that yields a given slope  
 alge259 Graphing a line given its slope and y-intercept  
 alge196 Graphing a line through a given point with a given slope  
 alge876 Identifying linear equations: Advanced  
 alge874 Identifying linear functions given ordered pairs  
 alge891 Rewriting a linear equation in the form  $Ax + By = C$   
 alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
 alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
 alge882 Graphing a line by first finding its slope and y-intercept  
 alge258 Writing an equation of a line given its slope and y-intercept  
 alge892 Writing an equation and graphing a line given its slope and y-intercept  
 alge893 Writing an equation in slope-intercept form given the slope and a point  
 alge883 Graphing a line given its equation in point-slope form  
 alge894 Writing an equation in point-slope form given the slope and a point  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 alge895 Identifying parallel and perpendicular lines from equations  
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 alge897 Writing and evaluating a function that models a real-world situation: Advanced  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 alge992 Combining functions to write a new function that models a real-world situation  
 alge987 Comparing properties of linear functions given in different forms  
 alge989 Interpreting the parameters of a linear function that models a real-world situation  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 alge991 Solving a linear equation by graphing  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 mstat068 Predictions from the line of best fit  
 mstat067 Approximating the equation of a line of best fit and making predictions  
 mstat069 Computing residuals  
 mstat070 Interpreting residual plots  
 mstat071 Linear relationship and the correlation coefficient  
 mstat074 Identifying correlation and causation  
 alge898 Translating the graph of an absolute value function: One step  
 alge899 Translating the graph of an absolute value function: Two steps  
 alge913 Graphing an absolute value equation of the form  $y = A - x -$   
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge901 How the leading coefficient affects the graph of an absolute value function  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun016 Domain and range from ordered pairs  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 alge294 Finding outputs of a one-step function that models a real-world situation: Function notation  
 alge295 Finding outputs of a two-step function with decimals that models a real-world situation: Function notation  
 alge296 Finding inputs and outputs of a two-step function that models a real-world situation: Function notation  
 alge990 Domain and range of a linear function that models a real-world situation  
 fun026 Finding an output of a function from its graph  
 pcalc761 Finding inputs and outputs of a function from its graph  
 fun007 Domain and range from the graph of a discrete relation  
 fun024 Domain and range from the graph of a continuous function

alge896 Graphing an integer function and finding its range for a given domain  
 alge570 Graphing a function of the form  $f(x) = ax + b$ : Integer slope  
 alge571 Graphing a function of the form  $f(x) = ax + b$ : Fractional slope  
 alge954 Graphing a parabola of the form  $y = ax^2$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge572 Graphing a function of the form  $f(x) = ax^2$   
 alge573 Graphing a function of the form  $f(x) = ax^2 + c$   
 pcalc750 Finding intercepts of a nonlinear function given its graph  
 pcalc751 Finding where a function is increasing, decreasing, or constant given the graph: Interval notation  
 pcalc752 Finding local maxima and minima of a function given the graph  
 mstat018 Choosing a graph to fit a narrative: Basic  
 mstat051 Choosing a graph to fit a narrative: Advanced

### Systems

alge914 Identifying solutions to a system of linear equations  
 alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations  
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge916 Solving a system of linear equations with fractional coefficients  
 alge917 Solving a system of linear equations with decimal coefficients  
 alge752 Solving a  $2 \times 2$  system of linear equations that is inconsistent or consistent dependent  
 alge988 Identifying the operations used to create equivalent systems of equations  
 alge753 Solving a  $3 \times 3$  system of linear equations: Problem type 1  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a  $3 \times 3$  system of linear equations: Problem type 1  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced  
 alge922 Graphing a system of three linear inequalities  
 alge729 Writing a multi-step inequality for a real-world situation  
 pcalc093 Solving a word problem using a system of linear inequalities: Problem type 1

### Exponents

alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge311 Product rule with positive exponents: Univariate  
 alge030 Product rule with positive exponents: Multivariate  
 arith029 Ordering numbers with positive exponents  
 alge826 Understanding the power rules of exponents  
 alge306 Introduction to the power of a power rule of exponents  
 alge305 Introduction to the power of a product rule of exponents  
 alge307 Power rules with positive exponents: Multivariate products  
 alge308 Power rules with positive exponents: Multivariate quotients  
 alge756 Power and product rules with positive exponents

alge451 Simplifying a ratio of multivariate monomials: Basic  
 alge827 Introduction to the quotient rule of exponents  
 alge452 Simplifying a ratio of univariate monomials  
 alge026 Quotient of expressions involving exponents  
 alge453 Simplifying a ratio of multivariate monomials: Advanced  
 alge927 Power and quotient rules with positive exponents  
 alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 arith729 Evaluating an expression with a negative exponent: Whole number base  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge961 Introduction to the product rule with negative exponents  
 alge028 Product rule with negative exponents  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge926 Quotient rule with negative exponents: Problem type 2  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge928 Power and quotient rules with negative exponents: Problem type 1  
 alge929 Power and quotient rules with negative exponents: Problem type 2  
 alge757 Power, product, and quotient rules with negative exponents  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent  
 scinot012 Converting between scientific notation and standard form in a real-world situation  
 scinot008 Multiplying numbers written in scientific notation: Basic  
 scinot009 Multiplying numbers written in scientific notation: Advanced  
 scinot010 Dividing numbers written in scientific notation: Basic  
 scinot011 Dividing numbers written in scientific notation: Advanced  
 alge971 Table for an exponential function  
 alge830 Evaluating an exponential function that models a real-world situation  
 arith853 Introduction to compound interest  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest  
 alge966 Finding the initial amount and rate of change given an exponential function  
 alge968 Writing an equation that models exponential growth or decay  
 alge301 Solving an exponential equation by finding common bases: Linear exponents  
 alge969 Graphing an exponential function:  $f(x) = ax$   
 alge970 Graphing an exponential function:  $f(x) = a(b)^x$   
 alge967 Writing an exponential function rule given a table of ordered pairs  
 alge993 Comparing linear, polynomial, and exponential functions

### Polynomials and Factoring

alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge932 Simplifying a sum or difference of multivariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge081 Multiplying conjugate binomials: Multivariate  
 alge032 Squaring a binomial: Univariate  
 alge068 Squaring a binomial: Multivariate  
 alge973 Multiplying binomials with negative coefficients

alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge759 Dividing a polynomial by a monomial: Univariate  
 alge760 Dividing a polynomial by a monomial: Multivariate  
 alge761 Polynomial long division: Problem type 1  
 alge762 Polynomial long division: Problem type 2  
 alge763 Polynomial long division: Problem type 3  
 alge985 Closure properties of integers and polynomials  
 alge605 Factoring a linear binomial  
 alge736 Introduction to the GCF of two monomials  
 alge930 Greatest common factor of three univariate monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge949 Factoring out a binomial from a polynomial: GCF factoring, basic  
 alge923 Factoring a univariate polynomial by grouping: Problem type 1  
 alge950 Factoring a univariate polynomial by grouping: Problem type 2  
 alge951 Factoring a multivariate polynomial by grouping: Problem type 1  
 alge952 Factoring a multivariate polynomial by grouping: Problem type 2  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge942 Factoring a quadratic in two variables with leading coefficient 1  
 alge936 Factoring out a constant before factoring a quadratic  
 alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1  
 alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
 alge941 Factoring a quadratic with leading coefficient greater than 1: Problem type 3  
 alge978 Factoring a quadratic by the ac-method  
 alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
 alge937 Factoring a quadratic with a negative leading coefficient  
 alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge945 Factoring a perfect square trinomial with leading coefficient greater than 1  
 alge946 Factoring a perfect square trinomial in two variables  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge839 Factoring a difference of squares in two variables  
 alge948 Factoring a polynomial involving a GCF and a difference of squares: Univariate  
 alge833 Factoring a polynomial involving a GCF and a difference of squares: Multivariate  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge042 Factoring with repeated use of the difference of squares formula  
 alge044 Factoring a sum or difference of two cubes  
 alge681 Solving an equation written in factored form  
 alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge703 Solving a word problem using a quadratic equation with rational roots  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem  
 alge713 Using the Pythagorean Theorem and a quadratic equation to find side lengths of a right triangle

### Rational Expressions

alge049 Restriction on a variable in a denominator: Linear  
 alge467 Restriction on a variable in a denominator: Quadratic  
 alge468 Evaluating a rational function: Problem type 1  
 alge469 Evaluating a rational function: Problem type 2  
 alge715 Domain of a rational function: Excluded values  
 alge454 Simplifying a ratio of factored polynomials: Linear factors  
 alge455 Simplifying a ratio of factored polynomials: Factors with exponents  
 alge456 Simplifying a ratio of polynomials using GCF factoring

alge457 Simplifying a ratio of linear polynomials: 1, -1, and no simplification  
 alge458 Simplifying a ratio of polynomials by factoring a quadratic with leading coefficient 1  
 alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2  
 alge459 Simplifying a ratio of polynomials: Problem type 3  
 alge034 Simplifying a ratio of multivariate polynomials  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge460 Multiplying rational expressions made up of linear expressions  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge461 Multiplying rational expressions involving quadratics with leading coefficients greater than 1  
 alge462 Multiplying rational expressions involving multivariate quadratics  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge463 Dividing rational expressions involving linear expressions  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge464 Dividing rational expressions involving quadratics with leading coefficients greater than 1  
 alge465 Dividing rational expressions involving multivariate quadratics  
 alge466 Multiplication and division of 3 rational expressions  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge427 Finding the LCD of rational expressions with linear denominators: Relatively prime  
 alge428 Finding the LCD of rational expressions with linear denominators: Common factors  
 alge429 Finding the LCD of rational expressions with quadratic denominators  
 alge430 Writing equivalent rational expressions with monomial denominators  
 alge431 Writing equivalent rational expressions with polynomial denominators  
 alge304 Writing equivalent rational expressions involving opposite factors  
 alge432 Introduction to adding fractions with variables and common denominators  
 alge433 Adding rational expressions with common denominators and monomial numerators  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge434 Adding rational expressions with common denominators and GCF factoring  
 alge435 Adding rational expressions with common denominators and quadratic factoring  
 alge436 Adding rational expressions with different denominators and a single occurrence of a variable  
 alge437 Adding rational expressions with denominators  $ax$  and  $bx$ : Basic  
 alge438 Adding rational expressions with denominators  $ax$  and  $bx$ : Advanced  
 alge439 Adding rational expressions with denominators  $axn$  and  $bxm$   
 alge440 Adding rational expressions with multivariate monomial denominators: Basic  
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge441 Adding rational expressions with linear denominators without common factors: Basic  
 alge442 Adding rational expressions with linear denominators without common factors: Advanced  
 alge443 Adding rational expressions with linear denominators with common factors: Basic  
 alge444 Adding rational expressions with linear denominators with common factors: Advanced  
 alge445 Adding rational expressions with denominators  $ax-b$  and  $b-ax$   
 alge661 Adding rational expressions involving different quadratic denominators  
 alge446 Adding 3 rational expressions with different quadratic denominators  
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 alge470 Complex fraction involving univariate monomials  
 alge058 Complex fraction involving multivariate monomials  
 alge471 Complex fraction: GCF factoring  
 alge472 Complex fraction: Quadratic factoring  
 alge473 Complex fraction made of sums involving rational expressions: Problem type 1  
 alge474 Complex fraction made of sums involving rational expressions: Problem type 2  
 alge475 Complex fraction made of sums involving rational expressions: Problem type 3  
 alge476 Complex fraction made of sums involving rational expressions: Problem type 4  
 alge477 Complex fraction made of sums involving rational expressions: Problem type 5  
 alge478 Complex fraction made of sums involving rational expressions: Problem type 6  
 alge479 Complex fraction made of sums involving rational expressions: Multivariate  
 alge480 Complex fraction with negative exponents: Problem type 1  
 alge481 Complex fraction with negative exponents: Problem type 2  
 alge162 Complex fraction that contains a complex fraction  
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$



alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge421 Solving a rational equation that simplifies to linear: Denominators  $ax$  and  $bx$   
 alge422 Solving a rational equation that simplifies to linear: Like binomial denominators  
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge423 Solving a rational equation that simplifies to linear: Factorable quadratic denominator  
 alge424 Solving a rational equation that simplifies to quadratic: Proportional form, basic  
 alge425 Solving a rational equation that simplifies to quadratic: Denominator  $x$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 alge426 Solving a rational equation that simplifies to quadratic: Factorable quadratic denominator  
 alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced  
 arith823 Writing ratios using different notations  
 arith663 Writing ratios for real-world situations  
 arith824 Simplifying a ratio of whole numbers: Problem type 1  
 arith826 Simplifying a ratio of whole numbers: Problem type 2  
 arith825 Simplifying a ratio of decimals  
 arith827 Finding a unit price  
 arith828 Computing unit prices to find the better buy  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 unit005 U.S. Customary unit conversion with whole number values  
 unit001 Metric distance conversion with whole number values  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 alge508 Solving for a variable in terms of other variables in a rational equation: Problem type 1  
 alge509 Solving for a variable in terms of other variables in a rational equation: Problem type 2  
 alge510 Solving for a variable in terms of other variables in a rational equation: Problem type 3  
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom838 Circumference ratios  
 arith612 Word problem involving multiple rates  
 alge770 Solving a work problem using a rational equation  
 alge450 Solving a distance, rate, time problem using a rational equation  
 alge059 Ordering fractions with variables  
 alge982 Identifying direct variation equations  
 alge938 Identifying direct variation from ordered pairs and writing equations  
 alge904 Writing a direct variation equation  
 alge175 Word problem on direct variation  
 alge828 Interpreting direct variation from a graph  
 alge905 Writing an inverse variation equation  
 alge903 Identifying direct and inverse variation equations  
 alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
 alge176 Word problem on inverse variation  
 alge220 Word problem on inverse proportions  
 pcalc681 Writing an equation that models variation  
 alge772 Word problem on combined variation

## Radicals

alge413 Finding all square roots of a number  
 arith601 Square root of a rational perfect square  
 arith760 Square roots of perfect squares with signs  
 alge415 Introduction to simplifying a radical expression with an even exponent  
 alge264 Square root of a perfect square monomial  
 arith094 Cube root of an integer  
 alge549 Finding  $n$ th roots of perfect  $n$ th powers with signs  
 arith768 Finding the  $n$ th root of a perfect  $n$ th power fraction

alge550 Finding the  $n$ th root of a perfect  $n$ th power monomial  
arith093 Simplifying the square root of a whole number less than 100  
arith762 Simplifying the square root of a whole number greater than 100  
alge080 Simplifying a radical expression with an even exponent  
alge520 Introduction to simplifying a radical expression with an odd exponent  
alge521 Simplifying a radical expression with an odd exponent  
alge275 Simplifying a radical expression with two variables  
alge273 Simplifying a higher root of a whole number  
alge551 Introduction to simplifying a higher radical expression  
alge552 Simplifying a higher radical expression: Univariate  
alge811 Simplifying a higher radical expression: Multivariate  
arith767 Introduction to square root addition or subtraction  
arith032 Square root addition or subtraction  
alge533 Square root addition or subtraction with three terms  
alge531 Introduction to simplifying a sum or difference of radical expressions: Univariate  
alge532 Simplifying a sum or difference of radical expressions: Univariate  
alge084 Simplifying a sum or difference of radical expressions: Multivariate  
alge554 Simplifying a sum or difference of higher roots  
alge555 Simplifying a sum or difference of higher radical expressions  
arith764 Introduction to square root multiplication  
arith765 Square root multiplication: Basic  
arith039 Square root multiplication: Advanced  
alge522 Introduction to simplifying a product of radical expressions: Univariate  
alge523 Simplifying a product of radical expressions: Univariate  
alge640 Simplifying a product of radical expressions: Multivariate  
alge556 Introduction to simplifying a product of higher roots  
alge557 Simplifying a product of higher radical expressions  
alge525 Introduction to simplifying a product involving square roots using the distributive property  
alge526 Simplifying a product involving square roots using the distributive property: Basic  
alge276 Simplifying a product involving square roots using the distributive property: Advanced  
alge774 Special products of radical expressions: Conjugates and squaring  
alge984 Classifying sums and products as rational or irrational  
arith766 Simplifying a quotient of square roots  
alge530 Simplifying a quotient involving a sum or difference with a square root  
alge527 Rationalizing a denominator: Quotient involving square roots  
alge528 Rationalizing a denominator: Square root of a fraction  
alge529 Rationalizing a denominator: Quotient involving a monomial  
alge534 Rationalizing a denominator using conjugates: Integer numerator  
alge535 Rationalizing a denominator using conjugates: Square root in numerator  
alge536 Rationalizing a denominator using conjugates: Variable in denominator  
alge564 Rationalizing a denominator: Quotient involving a higher radical  
alge400 Introduction to solving a radical equation  
alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
alge402 Solving a radical equation that simplifies to a linear equation: One radical, advanced  
alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
alge405 Solving a radical equation with two radicals that simplifies to  $\sqrt{x} = a$   
alge403 Solving a radical equation that simplifies to a quadratic equation: One radical, basic  
alge404 Solving a radical equation that simplifies to a quadratic equation: One radical, advanced  
alge411 Solving a radical equation with a quadratic expression under the radical  
alge182 Solving a radical equation that simplifies to a quadratic equation: Two radicals  
alge410 Solving an equation with a root index greater than 2: Problem type 1  
alge417 Solving an equation with a root index greater than 2: Problem type 2  
alge412 Algebraic symbol manipulation with radicals  
alge542 Word problem involving radical equations: Basic  
alge409 Word problem involving radical equations: Advanced  
alge132 Distance between two points in the plane: Exact answers  
alge539 Table for a square root function  
alge540 Domain of a square root function: Basic  
pcalc763 Domain of a square root function: Advanced  
alge543 Graphing a square root function: Problem type 1  
alge544 Graphing a square root function: Problem type 2  
alge812 Converting between radical form and exponent form

alge560 Rational exponents: Unit fraction exponents and whole number bases  
 alge561 Rational exponents: Unit fraction exponents and bases involving signs  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge558 Rational exponents: Product rule  
 alge559 Rational exponents: Quotient rule  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge562 Rational exponents: Power of a power rule  
 alge249 Rational exponents: Powers of powers with negative exponents  
 alge563 Simplifying products or quotients of higher radicals with different indices: Univariate

### Complex Numbers and Quadratic Equations

alge778 Using  $i$  to rewrite square roots of negative numbers  
 alge779 Simplifying a product and quotient involving square roots of negative numbers  
 pcalc048 Adding or subtracting complex numbers  
 pcalc049 Multiplying complex numbers  
 pcalc050 Dividing complex numbers  
 pcalc053 Simplifying a power of  $i$   
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
 alge227 Solving a quadratic equation using the square root property: Exact answers, advanced  
 alge094 Completing the square  
 alge780 Solving a quadratic equation by completing the square: Exact answers  
 alge095 Applying the quadratic formula: Exact answers  
 alge963 Applying the quadratic formula: Decimal answers  
 pcalc051 Solving a quadratic equation with complex roots  
 alge214 Discriminant of a quadratic equation  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge974 Finding the vertex,  $x$ -intercepts, and axis of symmetry from the graph of a parabola  
 alge953 Translating the graph of a parabola: One step  
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 alge569 Graphing a parabola of the form  $y = x^2 + bx + c$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients  
 alge277 Finding the  $x$ -intercept(s) and the vertex of a parabola  
 pcalc774 Rewriting a quadratic function to find the vertex of its graph  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge975 Domain and range from the graph of a parabola  
 pcalc762 Range of a quadratic function  
 alge957 Solving a quadratic equation by graphing  
 alge996 Comparing properties of quadratic functions given in different forms  
 alge702 Classifying the graph of a function  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge965 Identifying linear, quadratic, and exponential functions given ordered pairs  
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 fun019 Sum, difference, and product of two functions  
 fun022 Composition of two functions: Basic  
 pcalc776 Expressing a function as a composition of two functions  
 pcalc924 Determining whether an equation defines a function: Basic  
 pcalc757 Determining whether an equation defines a function: Advanced

## B.52 Math for 4-Year College Success

### Real Numbers

arith687 Fractional position on a number line  
arith829 Reading decimal position on a number line: Tenths  
arith830 Reading decimal position on a number line: Hundredths  
alge286 Plotting integers on a number line  
arith605 Plotting rational numbers on a number line  
arith691 Ordering integers  
arith016 Square root of a perfect square  
arith763 Using a calculator to approximate a square root  
arith602 Estimating a square root  
arith712 Ordering real numbers  
arith071 Absolute value of a number  
arith200 Integer addition: Problem type 1  
arith108 Integer addition: Problem type 2  
arith688 Integer subtraction: Problem type 1  
arith689 Integer subtraction: Problem type 2  
arith690 Integer subtraction: Problem type 3  
arith754 Addition and subtraction with 3 integers  
arith755 Addition and subtraction with 4 or 5 integers  
arith701 Word problem with addition or subtraction of integers  
arith231 Integer multiplication and division  
arith800 Multiplication of 3 or 4 integers  
arith711 Division involving zero  
alge001 Identifying numbers as integers or non-integers  
alge002 Identifying numbers as rational or irrational  
arith070 Least common multiple of 2 numbers  
arith116 Signed fraction addition or subtraction: Basic  
arith864 Signed fraction subtraction involving double negation  
arith106 Signed fraction addition or subtraction: Advanced  
arith811 Addition and subtraction of 3 fractions involving signs  
arith822 Signed fraction multiplication: Basic  
arith105 Signed fraction multiplication: Advanced  
arith814 Signed fraction division  
arith117 Signed decimal addition and subtraction  
arith234 Signed decimal addition and subtraction with 3 numbers  
arith750 Signed decimal multiplication  
arith751 Signed decimal division  
arith104 Operations with absolute value: Problem type 2  
arith702 Exponents and integers: Problem type 1  
arith703 Exponents and integers: Problem type 2  
arith704 Exponents and signed fractions  
arith118 Order of operations with integers  
arith600 Order of operations with integers and exponents  
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
alge004 Evaluating a quadratic expression: Integers  
alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
alge700 Combining like terms: Whole number coefficients  
alge607 Combining like terms: Integer coefficients  
arith655 Introduction to properties of addition  
alge187 Properties of addition  
alge310 Multiplying a constant and a linear monomial  
alge606 Distributive property: Whole number coefficients  
alge604 Distributive property: Integer coefficients  
arith656 Introduction to properties of multiplication  
alge188 Properties of real numbers  
alge608 Using distribution and combining like terms to simplify: Univariate  
alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
alge293 Combining like terms in a quadratic expression  
geom300 Perimeter of a square or a rectangle  
geom078 Sides of polygons having the same perimeter  
geom019 Area of a square or a rectangle

geom620 Area of a rectangle involving fractions  
 geom340 Area of a piecewise rectangular figure  
 geom142 Word problem involving the area between two rectangles  
 geom801 Area of a triangle  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom016 Circumference of a circle  
 geom301 Perimeter involving rectangles and circles  
 geom802 Circumference and area of a circle  
 geom302 Area involving rectangles and circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom311 Volume of a rectangular prism  
 geom090 Volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom035 Volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom622 Volume of a cone  
 geom841 Volume of a sphere  
 geom031 Surface area of a cube or a rectangular prism  
 geom091 Surface area of a triangular prism  
 geom621 Surface area of a cylinder  
 geom842 Surface area of a sphere

### Linear Equations and Inequalities

alge800 Additive property of equality with decimals  
 alge010 Additive property of equality with integers  
 alge836 Additive property of equality with signed fractions  
 alge008 Multiplicative property of equality with whole numbers  
 alge820 Multiplicative property of equality with fractions  
 alge825 Multiplicative property of equality with decimals  
 alge797 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge266 Additive property of equality with a negative coefficient  
 alge006 Solving a two-step equation with integers  
 alge200 Solving an equation to find the value of an expression  
 alge837 Solving a multi-step equation given in fractional form  
 alge986 Identifying properties used to solve a linear equation  
 alge824 Solving a two-step equation with signed decimals  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
 alge208 Solving a two-step equation with signed fractions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 alge840 Solving a proportion of the form  $(x+a)/b = c/d$   
 alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic

alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
alge518 Solving for a variable inside parentheses in terms of other variables  
alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
mstat065 Converting between temperatures in Fahrenheit and Celsius  
alge733 Writing a one-step expression for a real-world situation  
alge831 Translating a phrase into a one-step expression  
alge291 Translating a phrase into a two-step expression  
alge016 Translating a sentence into a one-step equation  
alge841 Translating a sentence into a multi-step equation  
alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
alge014 Solving a word problem with two unknowns using a linear equation  
alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
alge792 Solving a word problem with three unknowns using a linear equation  
alge842 Solving a word problem involving consecutive integers  
alge730 Writing a multi-step equation for a real-world situation  
alge794 Solving a value mixture problem using a linear equation  
arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
alge823 Solving a one-step word problem using the formula  $d = rt$   
alge218 Solving a word problem involving rates and time conversion  
alge796 Solving a distance, rate, time problem using a linear equation  
geom217 Finding the side length of a rectangle given its perimeter or area  
geom817 Finding a side length given the perimeter and side lengths with variables  
geom143 Finding the perimeter or area of a rectangle given one of these values  
geom838 Circumference ratios  
geom530 Solving equations involving vertical angles  
geom623 Finding angle measures of a triangle given angles with variables  
geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
stat803 Finding the value for a new score that will yield a given mean  
mstat049 Computing a percentage from a table of values  
arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
arith851 Finding the final amount given the original amount and a percentage increase or decrease  
arith847 Finding the sale price given the original price and percent discount  
arith074 Finding the sale price without a calculator given the original price and percent discount  
arith848 Finding the total cost including tax or markup  
arith855 Finding the original amount given the result of a percentage increase or decrease  
arith031 Finding the original price given the sale price and percent discount  
arith858 Finding the percentage increase or decrease: Basic  
arith225 Finding the percentage increase or decrease: Advanced  
arith854 Computing a percent mixture  
alge795 Solving a percent mixture problem using a linear equation  
arith856 Finding a percentage of a total amount in a circle graph  
stat801 Computations from a circle graph  
arith232 Finding simple interest without a calculator  
alge015 Translating a sentence by using an inequality symbol  
alge845 Translating a sentence into a one-step inequality  
alge846 Translating a sentence into a multi-step inequality  
alge748 Writing an inequality for a real-world situation  
alge017 Graphing a linear inequality on the number line  
alge822 Writing an inequality given a graph on the number line  
alge186 Translating a sentence into a compound inequality  
alge166 Graphing a compound inequality on the number line  
alge847 Writing a compound inequality given a graph on the number line  
set001 Set builder notation  
set004 Set builder and interval notation  
set002 Union and intersection of finite sets  
set005 Union and intersection of intervals  
alge844 Identifying solutions to a two-step linear inequality in one variable



alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge860 Solving inequalities with no solution or all real numbers as solutions  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge747 Solving a compound linear inequality: Interval notation  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
 alge603 Introduction to solving an absolute value equation  
 alge864 Solving an absolute value equation: Problem type 1  
 alge865 Solving an absolute value equation: Problem type 2  
 alge866 Solving an absolute value equation: Problem type 3  
 alge867 Solving an absolute value equation: Problem type 4  
 alge167 Solving an absolute value equation of the form  $-ax+b = -cx+d$   
 alge868 Solving an absolute value inequality: Problem type 1  
 alge943 Writing an absolute value inequality given a graph on the number line  
 alge869 Solving an absolute value inequality: Problem type 2  
 alge870 Solving an absolute value inequality: Problem type 3  
 alge871 Solving an absolute value inequality: Problem type 4  
 alge872 Solving an absolute value inequality: Problem type 5

### Lines and Functions

alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge850 Table for a linear equation  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding x- and y-intercepts given the graph of a line on a grid  
 alge924 Finding x- and y-intercepts of a line given the equation: Basic  
 alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
 alge197 Graphing a line given its x- and y-intercepts  
 alge881 Graphing a line by first finding its x- and y-intercepts  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines  
 alge888 Finding the coordinate that yields a given slope  
 alge259 Graphing a line given its slope and y-intercept  
 alge196 Graphing a line through a given point with a given slope  
 alge876 Identifying linear equations: Advanced  
 alge874 Identifying linear functions given ordered pairs  
 alge891 Rewriting a linear equation in the form  $Ax + By = C$   
 alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
 alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax+By=C$   
 alge882 Graphing a line by first finding its slope and y-intercept

alge258 Writing an equation of a line given its slope and y-intercept  
 alge892 Writing an equation and graphing a line given its slope and y-intercept  
 alge893 Writing an equation in slope-intercept form given the slope and a point  
 alge883 Graphing a line given its equation in point-slope form  
 alge894 Writing an equation in point-slope form given the slope and a point  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 alge895 Identifying parallel and perpendicular lines from equations  
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 alge897 Writing and evaluating a function that models a real-world situation: Advanced  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge992 Combining functions to write a new function that models a real-world situation  
 alge987 Comparing properties of linear functions given in different forms  
 alge989 Interpreting the parameters of a linear function that models a real-world situation  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 alge991 Solving a linear equation by graphing  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 mstat068 Predictions from the line of best fit  
 mstat067 Approximating the equation of a line of best fit and making predictions  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun016 Domain and range from ordered pairs  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun030 Evaluating a piecewise-defined function  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 alge294 Finding outputs of a one-step function that models a real-world situation: Function notation  
 alge295 Finding outputs of a two-step function with decimals that models a real-world situation: Function notation  
 alge296 Finding inputs and outputs of a two-step function that models a real-world situation: Function notation  
 alge990 Domain and range of a linear function that models a real-world situation  
 fun026 Finding an output of a function from its graph  
 pcalc761 Finding inputs and outputs of a function from its graph  
 fun007 Domain and range from the graph of a discrete relation  
 fun024 Domain and range from the graph of a continuous function  
 fun025 Domain and range from the graph of a piecewise function  
 pcalc750 Finding intercepts of a nonlinear function given its graph  
 pcalc751 Finding where a function is increasing, decreasing, or constant given the graph: Interval notation  
 pcalc752 Finding local maxima and minima of a function given the graph  
 mstat018 Choosing a graph to fit a narrative: Basic  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge896 Graphing an integer function and finding its range for a given domain  
 alge570 Graphing a function of the form  $f(x) = ax + b$ : Integer slope  
 alge571 Graphing a function of the form  $f(x) = ax + b$ : Fractional slope  
 alge913 Graphing an absolute value equation of the form  $y = A - x -$   
 alge954 Graphing a parabola of the form  $y = ax^2$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge572 Graphing a function of the form  $f(x) = ax^2$   
 alge573 Graphing a function of the form  $f(x) = ax^2 + c$   
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 fun031 Graphing a piecewise-defined function: Problem type 1

### Systems of Linear Equations

alge914 Identifying solutions to a system of linear equations

alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations  
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge916 Solving a system of linear equations with fractional coefficients  
 alge917 Solving a system of linear equations with decimal coefficients  
 alge752 Solving a 2x2 system of linear equations that is inconsistent or consistent dependent  
 alge077 Creating an inconsistent system of linear equations  
 alge988 Identifying the operations used to create equivalent systems of equations  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced  
 alge922 Graphing a system of three linear inequalities  
 alge729 Writing a multi-step inequality for a real-world situation  
 pcalc093 Solving a word problem using a system of linear inequalities: Problem type 1  
 pcalc095 Linear programming  
 pcalc094 Solving a word problem using linear programming  
 pcalc037 Scalar multiplication of a matrix  
 pcalc038 Addition or subtraction of matrices  
 pcalc740 Linear combination of matrices  
 pcalc042 Finding the determinant of a 2x2 matrix  
 pcalc043 Finding the determinant of a 3x3 matrix  
 pcalc045 Using Cramer's rule to solve a 2x2 system of linear equations  
 pcalc047 Using Cramer's rule to solve a 3x3 system of linear equations  
 pcalc712 Gauss-Jordan elimination with a 2x2 matrix  
 pcalc046 Solving a system of linear equations given its augmented matrix

### Exponents and Polynomials

alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge311 Product rule with positive exponents: Univariate  
 alge030 Product rule with positive exponents: Multivariate  
 arith029 Ordering numbers with positive exponents  
 alge826 Understanding the power rules of exponents  
 alge306 Introduction to the power of a power rule of exponents  
 alge305 Introduction to the power of a product rule of exponents  
 alge307 Power rules with positive exponents: Multivariate products  
 alge308 Power rules with positive exponents: Multivariate quotients  
 alge756 Power and product rules with positive exponents  
 alge451 Simplifying a ratio of multivariate monomials: Basic  
 alge827 Introduction to the quotient rule of exponents  
 alge452 Simplifying a ratio of univariate monomials  
 alge026 Quotient of expressions involving exponents  
 alge453 Simplifying a ratio of multivariate monomials: Advanced  
 alge927 Power and quotient rules with positive exponents

alge790 Evaluating expressions with exponents of zero  
 arith729 Evaluating an expression with a negative exponent: Whole number base  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge961 Introduction to the product rule with negative exponents  
 alge028 Product rule with negative exponents  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge926 Quotient rule with negative exponents: Problem type 2  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge928 Power and quotient rules with negative exponents: Problem type 1  
 alge929 Power and quotient rules with negative exponents: Problem type 2  
 alge757 Power, product, and quotient rules with negative exponents  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent  
 scinot012 Converting between scientific notation and standard form in a real-world situation  
 scinot008 Multiplying numbers written in scientific notation: Basic  
 scinot009 Multiplying numbers written in scientific notation: Advanced  
 scinot010 Dividing numbers written in scientific notation: Basic  
 scinot011 Dividing numbers written in scientific notation: Advanced  
 alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge932 Simplifying a sum or difference of multivariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge081 Multiplying conjugate binomials: Multivariate  
 alge032 Squaring a binomial: Univariate  
 alge068 Squaring a binomial: Multivariate  
 alge973 Multiplying binomials with negative coefficients  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge759 Dividing a polynomial by a monomial: Univariate  
 alge760 Dividing a polynomial by a monomial: Multivariate  
 alge761 Polynomial long division: Problem type 1  
 alge762 Polynomial long division: Problem type 2  
 alge763 Polynomial long division: Problem type 3  
 pcalc117 Synthetic division  
 pcalc786 Using the remainder theorem to evaluate a polynomial  
 alge985 Closure properties of integers and polynomials

### Factoring Polynomials

arith034 Prime numbers  
 arith035 Prime factorization  
 arith033 Greatest common factor of 2 numbers  
 alge605 Factoring a linear binomial  
 alge736 Introduction to the GCF of two monomials  
 alge930 Greatest common factor of three univariate monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate

alge949 Factoring out a binomial from a polynomial: GCF factoring, basic  
 alge923 Factoring a univariate polynomial by grouping: Problem type 1  
 alge950 Factoring a univariate polynomial by grouping: Problem type 2  
 alge951 Factoring a multivariate polynomial by grouping: Problem type 1  
 alge952 Factoring a multivariate polynomial by grouping: Problem type 2  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge942 Factoring a quadratic in two variables with leading coefficient 1  
 alge936 Factoring out a constant before factoring a quadratic  
 alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1  
 alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
 alge941 Factoring a quadratic with leading coefficient greater than 1: Problem type 3  
 alge978 Factoring a quadratic by the ac-method  
 alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
 alge937 Factoring a quadratic with a negative leading coefficient  
 alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge945 Factoring a perfect square trinomial with leading coefficient greater than 1  
 alge946 Factoring a perfect square trinomial in two variables  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge839 Factoring a difference of squares in two variables  
 alge948 Factoring a polynomial involving a GCF and a difference of squares: Univariate  
 alge833 Factoring a polynomial involving a GCF and a difference of squares: Multivariate  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge042 Factoring with repeated use of the difference of squares formula  
 alge044 Factoring a sum or difference of two cubes  
 alge681 Solving an equation written in factored form  
 alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge703 Solving a word problem using a quadratic equation with rational roots  
 alge046 Roots of a product of polynomials  
 alge163 Writing a quadratic equation given the roots and the leading coefficient  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem  
 alge713 Using the Pythagorean Theorem and a quadratic equation to find side lengths of a right triangle

### Rational Expressions

alge049 Restriction on a variable in a denominator: Linear  
 alge467 Restriction on a variable in a denominator: Quadratic  
 alge468 Evaluating a rational function: Problem type 1  
 alge469 Evaluating a rational function: Problem type 2  
 alge715 Domain of a rational function: Excluded values  
 alge454 Simplifying a ratio of factored polynomials: Linear factors  
 alge455 Simplifying a ratio of factored polynomials: Factors with exponents  
 alge456 Simplifying a ratio of polynomials using GCF factoring  
 alge457 Simplifying a ratio of linear polynomials: 1, -1, and no simplification  
 alge458 Simplifying a ratio of polynomials by factoring a quadratic with leading coefficient 1  
 alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2  
 alge459 Simplifying a ratio of polynomials: Problem type 3  
 alge034 Simplifying a ratio of multivariate polynomials  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge460 Multiplying rational expressions made up of linear expressions  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge461 Multiplying rational expressions involving quadratics with leading coefficients greater than 1  
 alge462 Multiplying rational expressions involving multivariate quadratics  
 alge054 Dividing rational expressions involving multivariate monomials

alge463 Dividing rational expressions involving linear expressions  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge464 Dividing rational expressions involving quadratics with leading coefficients greater than 1  
 alge465 Dividing rational expressions involving multivariate quadratics  
 alge466 Multiplication and division of 3 rational expressions  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge427 Finding the LCD of rational expressions with linear denominators: Relatively prime  
 alge428 Finding the LCD of rational expressions with linear denominators: Common factors  
 alge429 Finding the LCD of rational expressions with quadratic denominators  
 alge430 Writing equivalent rational expressions with monomial denominators  
 alge431 Writing equivalent rational expressions with polynomial denominators  
 alge304 Writing equivalent rational expressions involving opposite factors  
 alge432 Introduction to adding fractions with variables and common denominators  
 alge433 Adding rational expressions with common denominators and monomial numerators  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge434 Adding rational expressions with common denominators and GCF factoring  
 alge435 Adding rational expressions with common denominators and quadratic factoring  
 alge436 Adding rational expressions with different denominators and a single occurrence of a variable  
 alge437 Adding rational expressions with denominators  $ax$  and  $bx$ : Basic  
 alge438 Adding rational expressions with denominators  $ax$  and  $bx$ : Advanced  
 alge439 Adding rational expressions with denominators  $axn$  and  $bxm$   
 alge440 Adding rational expressions with multivariate monomial denominators: Basic  
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge441 Adding rational expressions with linear denominators without common factors: Basic  
 alge442 Adding rational expressions with linear denominators without common factors: Advanced  
 alge443 Adding rational expressions with linear denominators with common factors: Basic  
 alge444 Adding rational expressions with linear denominators with common factors: Advanced  
 alge445 Adding rational expressions with denominators  $ax-b$  and  $b-ax$   
 alge661 Adding rational expressions involving different quadratic denominators  
 alge446 Adding 3 rational expressions with different quadratic denominators  
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 alge470 Complex fraction involving univariate monomials  
 alge058 Complex fraction involving multivariate monomials  
 alge471 Complex fraction: GCF factoring  
 alge472 Complex fraction: Quadratic factoring  
 alge473 Complex fraction made of sums involving rational expressions: Problem type 1  
 alge474 Complex fraction made of sums involving rational expressions: Problem type 2  
 alge475 Complex fraction made of sums involving rational expressions: Problem type 3  
 alge476 Complex fraction made of sums involving rational expressions: Problem type 4  
 alge477 Complex fraction made of sums involving rational expressions: Problem type 5  
 alge478 Complex fraction made of sums involving rational expressions: Problem type 6  
 alge479 Complex fraction made of sums involving rational expressions: Multivariate  
 alge480 Complex fraction with negative exponents: Problem type 1  
 alge481 Complex fraction with negative exponents: Problem type 2  
 alge162 Complex fraction that contains a complex fraction  
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge421 Solving a rational equation that simplifies to linear: Denominators  $ax$  and  $bx$   
 alge422 Solving a rational equation that simplifies to linear: Like binomial denominators  
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge423 Solving a rational equation that simplifies to linear: Factorable quadratic denominator  
 alge424 Solving a rational equation that simplifies to quadratic: Proportional form, basic  
 alge425 Solving a rational equation that simplifies to quadratic: Denominator  $x$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 alge426 Solving a rational equation that simplifies to quadratic: Factorable quadratic denominator  
 alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced  
 alge508 Solving for a variable in terms of other variables in a rational equation: Problem type 1



alge509 Solving for a variable in terms of other variables in a rational equation: Problem type 2  
 alge510 Solving for a variable in terms of other variables in a rational equation: Problem type 3  
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom133 Ratio of volumes  
 arith612 Word problem involving multiple rates  
 alge770 Solving a work problem using a rational equation  
 alge450 Solving a distance, rate, time problem using a rational equation  
 alge059 Ordering fractions with variables  
 alge982 Identifying direct variation equations  
 alge938 Identifying direct variation from ordered pairs and writing equations  
 alge904 Writing a direct variation equation  
 alge175 Word problem on direct variation  
 alge828 Interpreting direct variation from a graph  
 alge905 Writing an inverse variation equation  
 alge903 Identifying direct and inverse variation equations  
 alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
 alge176 Word problem on inverse variation  
 alge220 Word problem on inverse proportions  
 pcalc681 Writing an equation that models variation  
 alge772 Word problem on combined variation  
 pcalc917 Finding the asymptotes of a rational function: Constant over linear  
 pcalc918 Finding the asymptotes of a rational function: Linear over linear  
 alge515 Graphing a rational function: Constant over linear  
 alge516 Graphing a rational function: Linear over linear

### Radicals

alge413 Finding all square roots of a number  
 arith601 Square root of a rational perfect square  
 arith760 Square roots of perfect squares with signs  
 arith761 Square roots of integers raised to even exponents  
 alge415 Introduction to simplifying a radical expression with an even exponent  
 alge264 Square root of a perfect square monomial  
 alge537 Using absolute value to simplify square roots of perfect square monomials  
 arith094 Cube root of an integer  
 alge549 Finding  $n$ th roots of perfect  $n$ th powers with signs  
 arith768 Finding the  $n$ th root of a perfect  $n$ th power fraction  
 alge550 Finding the  $n$ th root of a perfect  $n$ th power monomial  
 alge538 Using absolute value to simplify higher radical expressions  
 alge539 Table for a square root function  
 alge546 Evaluating a cube root function  
 alge540 Domain of a square root function: Basic  
 pcalc763 Domain of a square root function: Advanced  
 alge547 Domains of higher root functions  
 alge543 Graphing a square root function: Problem type 1  
 alge544 Graphing a square root function: Problem type 2  
 alge545 Graphing a square root function: Problem type 3  
 alge548 Graphing a cube root function  
 alge812 Converting between radical form and exponent form  
 alge560 Rational exponents: Unit fraction exponents and whole number bases  
 alge561 Rational exponents: Unit fraction exponents and bases involving signs  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge558 Rational exponents: Product rule  
 alge559 Rational exponents: Quotient rule  
 alge773 Rational exponents: Products and quotients with negative exponents

alge562 Rational exponents: Power of a power rule  
alge249 Rational exponents: Powers of powers with negative exponents  
arith093 Simplifying the square root of a whole number less than 100  
arith762 Simplifying the square root of a whole number greater than 100  
alge080 Simplifying a radical expression with an even exponent  
alge520 Introduction to simplifying a radical expression with an odd exponent  
alge521 Simplifying a radical expression with an odd exponent  
alge275 Simplifying a radical expression with two variables  
alge273 Simplifying a higher root of a whole number  
alge551 Introduction to simplifying a higher radical expression  
alge552 Simplifying a higher radical expression: Univariate  
alge811 Simplifying a higher radical expression: Multivariate  
arith767 Introduction to square root addition or subtraction  
arith032 Square root addition or subtraction  
alge533 Square root addition or subtraction with three terms  
alge531 Introduction to simplifying a sum or difference of radical expressions: Univariate  
alge532 Simplifying a sum or difference of radical expressions: Univariate  
alge084 Simplifying a sum or difference of radical expressions: Multivariate  
alge554 Simplifying a sum or difference of higher roots  
alge555 Simplifying a sum or difference of higher radical expressions  
arith764 Introduction to square root multiplication  
arith765 Square root multiplication: Basic  
arith039 Square root multiplication: Advanced  
alge522 Introduction to simplifying a product of radical expressions: Univariate  
alge523 Simplifying a product of radical expressions: Univariate  
alge640 Simplifying a product of radical expressions: Multivariate  
alge082 Simplifying a product of radical expressions: Multivariate, fractional expressions  
alge556 Introduction to simplifying a product of higher roots  
alge557 Simplifying a product of higher radical expressions  
alge525 Introduction to simplifying a product involving square roots using the distributive property  
alge526 Simplifying a product involving square roots using the distributive property: Basic  
alge276 Simplifying a product involving square roots using the distributive property: Advanced  
alge774 Special products of radical expressions: Conjugates and squaring  
alge984 Classifying sums and products as rational or irrational  
arith766 Simplifying a quotient of square roots  
alge530 Simplifying a quotient involving a sum or difference with a square root  
alge527 Rationalizing a denominator: Quotient involving square roots  
alge528 Rationalizing a denominator: Square root of a fraction  
alge529 Rationalizing a denominator: Quotient involving a monomial  
alge534 Rationalizing a denominator using conjugates: Integer numerator  
alge535 Rationalizing a denominator using conjugates: Square root in numerator  
alge536 Rationalizing a denominator using conjugates: Variable in denominator  
alge564 Rationalizing a denominator: Quotient involving a higher radical  
alge775 Rationalizing a denominator: Quotient involving higher radicals and monomials  
alge563 Simplifying products or quotients of higher radicals with different indices: Univariate  
alge776 Simplifying products or quotients of higher radicals with different indices: Multivariate  
alge400 Introduction to solving a radical equation  
alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
alge402 Solving a radical equation that simplifies to a linear equation: One radical, advanced  
alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
alge405 Solving a radical equation with two radicals that simplifies to  $\sqrt{x} = a$   
alge403 Solving a radical equation that simplifies to a quadratic equation: One radical, basic  
alge404 Solving a radical equation that simplifies to a quadratic equation: One radical, advanced  
alge411 Solving a radical equation with a quadratic expression under the radical  
alge182 Solving a radical equation that simplifies to a quadratic equation: Two radicals  
alge412 Algebraic symbol manipulation with radicals  
alge542 Word problem involving radical equations: Basic  
alge409 Word problem involving radical equations: Advanced  
alge410 Solving an equation with a root index greater than 2: Problem type 1  
alge417 Solving an equation with a root index greater than 2: Problem type 2  
alge416 Solving an equation with exponent  $1/a$ : Problem type 1  
alge418 Solving an equation with exponent  $1/a$ : Problem type 2

alge778 Using  $i$  to rewrite square roots of negative numbers  
 alge779 Simplifying a product and quotient involving square roots of negative numbers  
 pcalc048 Adding or subtracting complex numbers  
 pcalc049 Multiplying complex numbers  
 pcalc050 Dividing complex numbers  
 pcalc053 Simplifying a power of  $i$

### Quadratic Equations and Functions

alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
 alge227 Solving a quadratic equation using the square root property: Exact answers, advanced  
 alge094 Completing the square  
 alge780 Solving a quadratic equation by completing the square: Exact answers  
 alge095 Applying the quadratic formula: Exact answers  
 alge963 Applying the quadratic formula: Decimal answers  
 pcalc051 Solving a quadratic equation with complex roots  
 alge214 Discriminant of a quadratic equation  
 alge193 Discriminant of a quadratic equation with parameter  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge093 Solving an equation using the odd-root property: Problem type 1  
 alge228 Solving an equation using the odd-root property: Problem type 2  
 alge781 Solving an equation that can be written in quadratic form: Problem type 1  
 alge782 Solving an equation that can be written in quadratic form: Problem type 2  
 alge230 Solving an equation with positive rational exponent  
 alge231 Solving an equation with negative rational exponent  
 alge974 Finding the vertex,  $x$ -intercepts, and axis of symmetry from the graph of a parabola  
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 alge569 Graphing a parabola of the form  $y = x^2 + bx + c$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients  
 alge277 Finding the  $x$ -intercept(s) and the vertex of a parabola  
 pcalc793 Using a graphing calculator to find the  $x$ -intercept(s) and vertex of a quadratic function  
 pcalc774 Rewriting a quadratic function to find the vertex of its graph  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge975 Domain and range from the graph of a parabola  
 pcalc762 Range of a quadratic function  
 pcalc680 Writing the equation of a quadratic function given its graph  
 alge957 Solving a quadratic equation by graphing  
 alge996 Comparing properties of quadratic functions given in different forms  
 alge702 Classifying the graph of a function  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge784 Solving a quadratic inequality written in factored form  
 alge771 Solving a quadratic inequality  
 pcalc676 Solving a polynomial inequality  
 alge783 Solving a rational inequality: Problem type 1  
 pcalc677 Solving a rational inequality: Problem type 2

### Function Operations and Inverses

alge953 Translating the graph of a parabola: One step  
 alge898 Translating the graph of an absolute value function: One step  
 alge899 Translating the graph of an absolute value function: Two steps  
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge901 How the leading coefficient affects the graph of an absolute value function  
 alge185 Writing an equation for a function after a vertical translation

fun020 Writing an equation for a function after a vertical and horizontal translation  
 fun019 Sum, difference, and product of two functions  
 alge786 Quotient of two functions: Basic  
 pcalc756 Combining functions: Advanced  
 fun022 Composition of two functions: Basic  
 pcalc776 Expressing a function as a composition of two functions  
 fun021 Composition of two functions: Domain and range  
 alge129 Composition of two functions: Advanced  
 pcalc924 Determining whether an equation defines a function: Basic  
 pcalc757 Determining whether an equation defines a function: Advanced  
 fun011 Horizontal line test  
 pcalc777 Determining whether two functions are inverses of each other  
 fun012 Inverse functions: Linear, discrete  
 alge130 Inverse functions: Rational  
 pcalc778 Inverse functions: Quadratic, cubic, radical

### Exponential and Logarithmic Functions

alge971 Table for an exponential function  
 alge969 Graphing an exponential function:  $f(x) = ax$   
 alge970 Graphing an exponential function:  $f(x) = a(b)^x$   
 alge712 Graphing an exponential function and its asymptote:  $f(x) = a(b)^x$   
 pcalc922 Translating the graph of an exponential function  
 pcalc797 The graph, domain, and range of an exponential function  
 pcalc103 Graphing an exponential function and its asymptote:  $f(x) = a(e)^{x-b} + c$   
 alge830 Evaluating an exponential function that models a real-world situation  
 pcalc919 Evaluating an exponential function with base  $e$  that models a real-world situation  
 arith853 Introduction to compound interest  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest  
 alge966 Finding the initial amount and rate of change given an exponential function  
 alge968 Writing an equation that models exponential growth or decay  
 alge967 Writing an exponential function rule given a table of ordered pairs  
 alge993 Comparing linear, polynomial, and exponential functions  
 alge108 Converting between logarithmic and exponential equations  
 pcalc799 Converting between natural logarithmic and exponential equations  
 alge232 Evaluating a logarithmic expression  
 alge233 Solving an equation of the form  $\log_b a = c$   
 pcalc923 Translating the graph of a logarithmic function  
 alge788 Graphing a logarithmic function: Basic  
 pcalc800 The graph, domain, and range of a logarithmic function  
 pcalc104 Graphing a logarithmic function: Advanced  
 pcalc708 Basic properties of logarithms  
 pcalc779 Expanding a logarithmic expression: Problem type 1  
 pcalc780 Expanding a logarithmic expression: Problem type 2  
 alge787 Writing an expression as a single logarithm  
 pcalc612 Change of base for logarithms: Problem type 1  
 pcalc613 Change of base for logarithms: Problem type 2  
 pcalc803 Solving a multi-step equation involving a single logarithm  
 pcalc804 Solving a multi-step equation involving natural logarithms  
 alge113 Solving an equation involving logarithms on both sides: Problem type 1  
 pcalc805 Solving an equation involving logarithms on both sides: Problem type 2  
 alge301 Solving an exponential equation by finding common bases: Linear exponents  
 alge482 Solving an exponential equation by finding common bases: Linear and quadratic exponents  
 pcalc920 Solving an exponential equation by using logarithms: Decimal answers, basic  
 pcalc921 Solving an exponential equation by using natural logarithms: Decimal answers  
 alge111 Solving an exponential equation by using logarithms: Exact answers in logarithmic form  
 pcalc806 Using a graphing calculator to solve an exponential or logarithmic equation  
 alge178 Finding the time to reach a limit in a word problem on exponential growth or decay  
 pcalc614 Finding the initial or final amount in a word problem on exponential growth or decay

pcalc615 Finding the rate or time in a word problem on continuous exponential growth or decay

### Conic Sections and Sequences

alge191 Midpoint of a line segment in the plane  
 alge414 Finding an endpoint of a line segment given the other endpoint and the midpoint  
 alge132 Distance between two points in the plane: Exact answers  
 pcalc067 Graphing a parabola of the form  $ay^2 + by + cx + d = 0$  or  $ax^2 + bx + cy + d = 0$   
 pcalc068 Writing an equation of a parabola given the vertex and the focus  
 pcalc069 Finding the focus of a parabola of the form  $ay^2 + by + cx + d = 0$  or  $ax^2 + bx + cy + d = 0$   
 pcalc605 Graphing a circle given its equation in standard form  
 pcalc128 Graphing a circle given its equation in general form: Basic  
 pcalc129 Graphing a circle given its equation in general form: Advanced  
 pcalc065 Writing an equation of a circle given its center and a point on the circle  
 pcalc066 Writing an equation of a circle given the endpoints of a diameter  
 pcalc734 Graphing an ellipse given its equation in standard form  
 pcalc070 Graphing an ellipse centered at the origin:  $Ax^2 + By^2 = C$   
 pcalc071 Graphing an ellipse given its equation in general form  
 pcalc735 Graphing a hyperbola given its equation in standard form  
 pcalc075 Graphing a hyperbola centered at the origin:  $Ax^2 - By^2 - C = 0$   
 pcalc076 Graphing a hyperbola given its equation in general form  
 pcalc736 Classifying conics given their equations  
 alge994 Graphically solving a system of linear and quadratic equations  
 pcalc796 Using a graphing calculator to solve a system of equations  
 alge995 Solving a system of linear and quadratic equations  
 pcalc098 Solving a system of nonlinear equations: Problem type 1  
 pcalc748 Graphing a quadratic inequality: Problem type 1  
 pcalc749 Graphing a quadratic inequality: Problem type 2  
 pcalc096 Graphing a system of nonlinear inequalities: Problem type 1  
 pcalc097 Graphing a system of nonlinear inequalities: Problem type 2  
 alge644 Finding the first terms of an arithmetic sequence using an explicit rule  
 alge645 Finding the first terms of a geometric sequence using an explicit rule  
 pcalc080 Finding the first terms of a sequence using an explicit rule with multiple occurrences of  $n$   
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge908 Finding the first terms of a sequence using a recursive rule  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 pcalc715 Finding a specified term of an arithmetic sequence given two terms of the sequence  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge910 Writing a recursive rule for an arithmetic sequence  
 pcalc718 Sum of the first  $n$  terms of an arithmetic sequence  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc717 Finding a specified term of a geometric sequence given two terms of the sequence  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge911 Writing recursive rules for arithmetic and geometric sequences  
 pcalc719 Sum of the first  $n$  terms of a geometric sequence  
 pcalc720 Sum of an infinite geometric series  
 alge965 Identifying linear, quadratic, and exponential functions given ordered pairs  
 pcalc082 Factorial expressions  
 pcalc087 Binomial formula

## B.53 College Preparedness

### Whole Numbers

arith124 Whole number place value: Problem type 1  
arith125 Whole number place value: Problem type 2  
arith066 Expanded form  
arith643 Expanded form with zeros  
arith028 Numeral translation: Problem type 1  
arith060 Numeral translation: Problem type 2  
arith633 One-digit addition with carry  
arith634 Addition of 3 or 4 one-digit numbers  
arith001 Addition without carry  
arith635 Adding a 2-digit number and a 1-digit number with carry  
arith050 Addition with carry  
arith630 Addition with carry to the hundreds place  
arith012 Addition of large numbers  
arith636 Subtracting a 1-digit number from a 2-digit number  
arith007 Subtraction without borrowing  
arith128 Adding or subtracting 10, 100, or 1000  
arith006 Subtraction with borrowing  
arith682 Subtraction with multiple regrouping steps  
arith637 Subtraction and regrouping with zeros  
arith613 Word problem with addition or subtraction of whole numbers  
arith655 Introduction to properties of addition  
arith126 Multiplication as repeated addition  
arith008 One-digit multiplication  
arith679 Multiplication by 10, 100, and 1000  
arith003 Multiplication without carry  
arith004 Multiplication with carry  
arith632 Multiplication with trailing zeros: Problem type 1  
arith615 Introduction to multiplication of large numbers  
arith638 Multiplication with trailing zeros: Problem type 2  
arith014 Multiplication of large numbers  
arith641 Multiples: Problem type 1  
arith642 Multiples: Problem type 2  
arith656 Introduction to properties of multiplication  
arith075 Division facts  
arith614 Word problem with multiplication or division of whole numbers  
arith130 Word problem with multiplication and addition or subtraction of whole numbers  
arith243 Division of whole numbers given in fractional form  
arith711 Division involving zero  
arith052 Division without carry  
arith005 Division with carry  
arith680 Division with trailing zeros: Problem type 1  
arith649 Division with trailing zeros: Problem type 2  
arith616 Quotient and remainder: Problem type 1  
arith644 Word problem on quotient and remainder  
arith617 Quotient and remainder: Problem type 2  
arith631 Quotient and remainder: Problem type 3  
arith650 Division involving quotients with intermediate zeros  
arith023 Word problem with division of whole numbers and rounding  
arith651 Introduction to inequalities  
arith077 Ordering large numbers  
arith078 Rounding to tens or hundreds  
arith123 Rounding to hundreds or thousands  
arith061 Rounding to thousands, ten thousands, or hundred thousands  
arith101 Estimating a sum of whole numbers  
arith102 Estimating a difference of whole numbers  
arith604 Estimating a product or quotient of whole numbers  
arith692 Writing expressions using exponents



arith233 Introduction to exponents  
arith683 Power of 10: Positive exponent  
arith645 Introduction to parentheses  
arith681 Introduction to order of operations  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
arith657 Understanding the distributive property  
alge284 Evaluating an algebraic expression: Whole number addition or subtraction  
alge683 Evaluating an algebraic expression: Whole number multiplication or division  
alge285 Evaluating an algebraic expression: Whole numbers with two operations  
alge832 Evaluating an algebraic expression: Whole number operations and exponents  
alge009 Additive property of equality with whole numbers  
alge008 Multiplicative property of equality with whole numbers  
alge803 Using two steps to solve an equation with whole numbers  
arith646 Even and odd numbers  
arith647 Divisibility rules for 2, 5, and 10  
arith648 Divisibility rules for 3 and 9  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith070 Least common multiple of 2 numbers  
arith804 Least common multiple of 3 numbers  
arith240 Word problem with common multiples  
alge925 Finding the next terms of an arithmetic sequence with whole numbers  
alge933 Finding the next terms of a geometric sequence with whole numbers  
alge732 Finding patterns in shapes

## Fractions

arith623 Introduction to fractions  
arith665 Understanding equivalent fractions  
arith212 Equivalent fractions  
arith666 Introduction to simplifying a fraction  
arith067 Simplifying a fraction  
arith687 Fractional position on a number line  
arith667 Plotting fractions on a number line  
arith044 Ordering fractions with the same denominator  
arith091 Ordering fractions with the same numerator  
arith092 Using a common denominator to order fractions  
arith079 Product of a unit fraction and a whole number  
arith086 Product of a fraction and a whole number: Problem type 1  
arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith812 Product of a fraction and a whole number: Problem type 2  
arith813 Multiplication of 3 fractions  
arith818 Word problem involving fractions and multiplication  
arith095 Multi-step word problem involving fractions and multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith819 Word problem involving fractions and division  
arith618 Addition or subtraction of fractions with the same denominator  
arith802 Addition or subtraction of fractions with the same denominator and simplification  
arith801 Finding the LCD of two fractions  
arith109 Addition or subtraction of unit fractions  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators

arith803 Addition and subtraction of 3 fractions with different denominators  
 arith805 Word problem involving addition or subtraction of fractions with different denominators  
 arith100 Fractional part of a circle  
 arith662 Writing a mixed number and an improper fraction for a shaded region  
 arith015 Writing an improper fraction as a mixed number  
 arith619 Writing a mixed number as an improper fraction  
 arith215 Addition or subtraction of mixed numbers with the same denominator  
 arith084 Addition of mixed numbers with the same denominator and carry  
 arith216 Subtraction of mixed numbers with the same denominator and borrowing  
 arith806 Addition or subtraction of mixed numbers with different denominators and no carry or borrow  
 arith808 Addition of mixed numbers with different denominators and carry  
 arith809 Subtraction of mixed numbers with different denominators and borrowing  
 arith807 Addition and subtraction of 3 mixed numbers with different denominators  
 arith810 Word problem involving addition or subtraction of mixed numbers with different denominators  
 arith815 Mixed number multiplication  
 arith816 Multiplication of a mixed number and a whole number  
 arith817 Division with a mixed number and a whole number  
 arith068 Mixed number division  
 arith820 Word problem involving multiplication or division with mixed numbers  
 arith821 Exponents and fractions  
 arith859 Order of operations with fractions: Problem type 1  
 arith860 Order of operations with fractions: Problem type 2  
 arith861 Order of operations with fractions: Problem type 3

### Decimals, Proportions, and Percents

arith127 Writing a decimal and a fraction for a shaded region  
 arith110 Decimal place value: Tenths and hundredths  
 arith220 Decimal place value: Hundreds to ten thousandths  
 arith714 Writing a decimal number less than 1 given its name  
 arith715 Writing a decimal number greater than 1 given its name  
 arith716 Writing a decimal number given its name: Advanced  
 arith829 Reading decimal position on a number line: Tenths  
 arith830 Reading decimal position on a number line: Hundredths  
 arith831 Understanding decimal position on a number line using zoom: Hundredths  
 arith832 Understanding decimal position on a number line using zoom: Thousandths  
 arith129 Introduction to ordering decimals  
 arith608 Ordering decimals  
 arith221 Rounding decimals  
 arith717 Converting a decimal to a proper fraction without simplifying: Basic  
 arith719 Converting a decimal to a proper fraction without simplifying: Advanced  
 arith718 Converting a decimal to a proper fraction in simplest form: Basic  
 arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
 arith721 Converting a decimal to a mixed number and an improper fraction without simplifying  
 arith722 Converting a decimal to a mixed number and an improper fraction in simplest form: Basic  
 arith724 Converting a decimal to a mixed number and an improper fraction in simplest form: Advanced  
 arith624 Addition of aligned decimals  
 arith013 Decimal addition with 3 numbers  
 arith734 Subtraction of aligned decimals  
 arith735 Decimal subtraction: Basic  
 arith736 Decimal subtraction: Advanced  
 arith737 Decimal addition and subtraction with 3 or more numbers  
 arith131 Estimating a decimal sum or difference  
 arith132 Word problem with addition or subtraction of 2 decimals  
 arith133 Word problem with addition of 3 or 4 decimals and whole numbers  
 arith134 Word problem with subtraction of a whole number and a decimal: Regrouping with zeros  
 arith739 Introduction to decimal multiplication  
 arith017 Multiplication of a decimal by a whole number  
 arith055 Decimal multiplication: Problem type 1  
 arith046 Decimal multiplication: Problem type 2

arith082 Multiplication of a decimal by a power of ten  
arith738 Multiplication of a decimal by a power of 0.1  
arith740 Multiplication of decimals that have a product less than 0.1  
arith752 Estimating a product of decimals  
arith135 Word problem with multiplication of a decimal and a whole number  
arith137 Word problem with multiplication of two decimals  
arith224 Word problem with decimal addition and multiplication  
arith744 Whole number division with decimal answers  
arith081 Division of a decimal by a whole number  
arith743 Division of a decimal by a 1-digit decimal  
arith019 Division of a decimal by a 2-digit decimal  
arith083 Division of a decimal by a power of ten  
arith742 Division of a decimal by a power of 0.1  
arith745 Decimal division with rounding  
arith136 Word problem with division of a decimal and a whole number  
arith138 Word problem with division of two decimals  
arith227 Word problem with decimal subtraction and division  
alge823 Solving a one-step word problem using the formula  $d = rt$   
arith725 Converting a fraction with a denominator of 10 or 100 to a decimal  
arith726 Converting a fraction with a denominator of 100 or 1000 to a decimal  
arith727 Converting a fraction to a terminating decimal: Basic  
arith728 Converting a fraction to a terminating decimal: Advanced  
arith730 Converting a fraction to a repeating decimal: Basic  
arith731 Converting a fraction to a repeating decimal: Advanced  
arith733 Using a calculator to convert a fraction to a rounded decimal  
arith111 Converting a mixed number to a terminating decimal: Basic  
arith112 Converting a mixed number to a terminating decimal: Advanced  
arith732 Converting a fraction or mixed number to a rounded decimal  
arith609 Ordering fractions and decimals  
arith753 Squaring decimal bases: Products greater than 0.1  
arith741 Exponents and decimals: Products less than 0.1  
arith720 Order of operations with decimals: Problem type 1  
arith746 Order of operations with decimals: Problem type 2  
arith747 Order of operations with decimals: Problem type 3  
arith748 Addition or subtraction with a decimal and a mixed number  
arith749 Multiplication with a decimal and a fraction  
arith823 Writing ratios using different notations  
arith663 Writing ratios for real-world situations  
arith824 Simplifying a ratio of whole numbers: Problem type 1  
arith825 Simplifying a ratio of decimals  
arith827 Finding a unit price  
arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
arith828 Computing unit prices to find the better buy  
alge272 Solving a proportion of the form  $x/a = b/c$   
arith064 Solving a word problem on proportions using a unit rate  
arith610 Word problem on proportions: Problem type 1  
arith611 Word problem on proportions: Problem type 2  
alge063 Word problem on mixed number proportions  
arith045 Word problem with powers of ten  
arith836 Converting a fraction with a denominator of 100 to a percentage  
arith837 Converting a percentage to a fraction with a denominator of 100  
arith674 Finding the percentage of a grid that is shaded  
arith723 Introduction to converting a percentage to a decimal  
arith833 Introduction to converting a decimal to a percentage  
arith834 Converting between percentages and decimals  
arith841 Converting a mixed number percentage to a decimal  
arith835 Converting between percentages and decimals in a real-world situation  
arith090 Converting a percentage to a fraction in simplest form  
arith839 Converting a decimal percentage to a fraction  
arith838 Converting a fraction to a percentage: Denominator of 4, 5, or 10  
arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
arith843 Using a calculator to convert a fraction to a rounded percentage

arith842 Converting a fraction to a percentage in a real-world situation  
 arith840 Finding a percentage of a whole number  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith844 Finding a percentage of a whole number without a calculator: Advanced  
 arith862 Applying the percent equation: Problem type 1  
 arith863 Applying the percent equation: Problem type 2  
 arith845 Finding a percentage of a total amount: Real-world situations  
 arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount  
 arith857 Estimating a tip without a calculator  
 arith069 Writing a ratio as a percentage without a calculator  
 mstat049 Computing a percentage from a table of values  
 arith850 Finding the rate of a tax or commission  
 arith849 Finding the total amount given the percentage of a partial amount  
 arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
 arith851 Finding the final amount given the original amount and a percentage increase or decrease  
 arith847 Finding the sale price given the original price and percent discount  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith848 Finding the total cost including tax or markup  
 arith855 Finding the original amount given the result of a percentage increase or decrease  
 arith031 Finding the original price given the sale price and percent discount  
 arith858 Finding the percentage increase or decrease: Basic  
 arith225 Finding the percentage increase or decrease: Advanced  
 arith232 Finding simple interest without a calculator  
 arith853 Introduction to compound interest

### Geometry, Measurement, Data Analysis

geom339 Perimeter of a polygon  
 geom300 Perimeter of a square or a rectangle  
 geom618 Perimeter of a polygon involving mixed numbers and fractions  
 geom078 Sides of polygons having the same perimeter  
 geom221 Finding the missing length in a figure  
 geom353 Perimeter of a piecewise rectangular figure  
 geom358 Identifying parallel and perpendicular lines  
 geom349 Naming segments, rays, and lines  
 geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom305 Identifying supplementary and vertical angles  
 geom304 Identifying corresponding and alternate angles  
 geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom361 Naming polygons  
 mstat042 Interpreting a Venn diagram of 2 sets  
 geom867 Identifying parallelograms, rectangles, and squares  
 geom310 Properties of quadrilaterals  
 geom532 Classifying parallelograms  
 geom019 Area of a square or a rectangle  
 geom866 Perimeter and area on a grid  
 geom620 Area of a rectangle involving fractions  
 geom619 Area of a rectangle involving mixed numbers and fractions  
 geom350 Distinguishing between the area and perimeter of a rectangle  
 geom351 Areas of rectangles with the same perimeter  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom340 Area of a piecewise rectangular figure

geom142 Word problem involving the area between two rectangles  
geom801 Area of a triangle  
geom344 Area involving rectangles and triangles  
geom022 Area of a parallelogram  
geom023 Area of a trapezoid  
geom347 Introduction to a circle: Diameter, radius, and chord  
geom016 Circumference of a circle  
geom301 Perimeter involving rectangles and circles  
geom802 Circumference and area of a circle  
geom302 Area involving rectangles and circles  
geom036 Word problem involving the area between two concentric circles  
geom214 Area involving inscribed figures  
geom868 Classifying solids  
geom348 Vertices, edges, and faces of a solid  
geom830 Counting the cubes in a solid made of cubes  
geom354 Volume of a rectangular prism made of unit cubes  
geom311 Volume of a rectangular prism  
geom505 Volume of a piecewise rectangular prism  
geom090 Volume of a triangular prism  
geom033 Volume of a pyramid  
geom035 Volume of a cylinder  
geom092 Word problem involving the rate of filling or emptying a cylinder  
geom622 Volume of a cone  
geom841 Volume of a sphere  
geom219 Nets of solids  
geom816 Side views of a solid made of cubes  
geom031 Surface area of a cube or a rectangular prism  
geom345 Surface area of a piecewise rectangular prism made of unit cubes  
geom091 Surface area of a triangular prism  
geom621 Surface area of a cylinder  
geom842 Surface area of a sphere  
arith016 Square root of a perfect square  
arith763 Using a calculator to approximate a square root  
arith602 Estimating a square root  
alge407 Introduction to the Pythagorean Theorem  
geom044 Pythagorean Theorem  
alge408 Word problem involving the Pythagorean Theorem  
geom359 Identifying congruent shapes on a grid  
geom520 Identifying and naming congruent triangles  
geom360 Identifying similar or congruent shapes on a grid  
geom037 Similar polygons  
geom038 Similar right triangles  
geom337 Indirect measurement  
mstat059 Choosing U.S. Customary measurement units  
unit005 U.S. Customary unit conversion with whole number values  
mstat035 Conversions involving measurements in feet and inches  
mstat036 Adding measurements in feet and inches  
unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
unit007 U.S. Customary unit conversion with mixed number values: One-step conversion  
unit008 U.S. Customary unit conversion with mixed number values: Two-step conversion  
unit009 U.S. Customary area unit conversion with whole number values  
mstat060 Choosing metric measurement units  
unit001 Metric distance conversion with whole number values  
unit002 Metric mass or capacity conversion with whole number values  
unit003 Metric distance conversion with decimal values  
unit004 Metric conversion with decimal values: Two-step problem  
unit010 Metric area unit conversion with decimal values  
unit012 Time unit conversion with whole number values  
time006 Adding time  
time007 Elapsed time  
arith063 Word problem with clocks  
mstat065 Converting between temperatures in Fahrenheit and Celsius

arith826 Simplifying a ratio of whole numbers: Problem type 2  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 mstat056 Interpreting a tally table  
 mstat037 Constructing a line plot  
 mstat005 Constructing a bar graph for non-numerical data  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat057 Interpreting a pictograph table  
 mstat007 Interpreting a line graph  
 mstat031 Interpreting a stem-and-leaf plot  
 stat804 Interpreting a circle graph or pie chart  
 arith856 Finding a percentage of a total amount in a circle graph  
 stat801 Computations from a circle graph  
 geom814 Angle measure in a circle graph  
 stat020 Calculating relative frequencies in a contingency table  
 stat805 Making a reasonable inference based on proportion statistics  
 mstat025 Finding if a question can be answered by the data  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 arith103 Average of two numbers  
 mstat001 Mean of a data set  
 mstat028 Mean and median of a data set  
 mstat029 How changing a value affects the mean and median  
 mstat053 Choosing the best measure to describe data  
 stat802 Rejecting unreasonable claims based on average statistics  
 mstat066 Weighted mean  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat072 Five-number summary and interquartile range  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 stat009 Percentiles  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 stat790 Permutations, combinations, and the multiplication principle for counting  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat039 Understanding likelihood  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat032 Probability of the union of two events

## Real Numbers

alge286 Plotting integers on a number line  
 arith605 Plotting rational numbers on a number line



mstat038 Reading the temperature from a thermometer  
 arith699 Writing a signed number for a real-world situation  
 arith691 Ordering integers  
 arith712 Ordering real numbers  
 arith071 Absolute value of a number  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith754 Addition and subtraction with 3 integers  
 arith755 Addition and subtraction with 4 or 5 integers  
 arith701 Word problem with addition or subtraction of integers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers  
 alge001 Identifying numbers as integers or non-integers  
 alge002 Identifying numbers as rational or irrational  
 arith116 Signed fraction addition or subtraction: Basic  
 arith864 Signed fraction subtraction involving double negation  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith811 Addition and subtraction of 3 fractions involving signs  
 arith822 Signed fraction multiplication: Basic  
 arith105 Signed fraction multiplication: Advanced  
 arith814 Signed fraction division  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 arith750 Signed decimal multiplication  
 arith751 Signed decimal division  
 arith104 Operations with absolute value: Problem type 2  
 geom525 Computing distances between decimals on the number line  
 unit052 Finding the absolute error and percent error of a measurement  
 arith702 Exponents and integers: Problem type 1  
 arith703 Exponents and integers: Problem type 2  
 arith704 Exponents and signed fractions  
 arith118 Order of operations with integers  
 arith600 Order of operations with integers and exponents  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
 alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
 alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 alge187 Properties of addition  
 alge310 Multiplying a constant and a linear monomial  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge188 Properties of real numbers  
 alge608 Using distribution and combining like terms to simplify: Univariate  
 alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
 alge293 Combining like terms in a quadratic expression

### Linear Equations and Inequalities

alge801 Additive property of equality with fractions and mixed numbers  
 alge800 Additive property of equality with decimals  
 alge010 Additive property of equality with integers  
 alge836 Additive property of equality with signed fractions  
 alge820 Multiplicative property of equality with fractions  
 alge825 Multiplicative property of equality with decimals

alge797 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge266 Additive property of equality with a negative coefficient  
 alge006 Solving a two-step equation with integers  
 alge200 Solving an equation to find the value of an expression  
 alge920 Introduction to solving an equation with parentheses  
 alge837 Solving a multi-step equation given in fractional form  
 alge986 Identifying properties used to solve a linear equation  
 alge824 Solving a two-step equation with signed decimals  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
 alge208 Solving a two-step equation with signed fractions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge840 Solving a proportion of the form  $(x+a)\div b = c\div d$   
 alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
 alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
 alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
 alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
 alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
 alge518 Solving for a variable inside parentheses in terms of other variables  
 alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
 alge733 Writing a one-step expression for a real-world situation  
 alge831 Translating a phrase into a one-step expression  
 alge291 Translating a phrase into a two-step expression  
 alge016 Translating a sentence into a one-step equation  
 alge841 Translating a sentence into a multi-step equation  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge730 Writing a multi-step equation for a real-world situation  
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge792 Solving a word problem with three unknowns using a linear equation  
 alge842 Solving a word problem involving consecutive integers  
 alge794 Solving a value mixture problem using a linear equation  
 alge218 Solving a word problem involving rates and time conversion  
 alge796 Solving a distance, rate, time problem using a linear equation  
 arith854 Computing a percent mixture  
 alge795 Solving a percent mixture problem using a linear equation  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom218 Finding the radius or the diameter of a circle given its circumference  
 geom838 Circumference ratios  
 geom530 Solving equations involving vertical angles  
 geom531 Solving equations involving angles and a pair of parallel lines  
 geom623 Finding angle measures of a triangle given angles with variables  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 stat803 Finding the value for a new score that will yield a given mean

alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge846 Translating a sentence into a multi-step inequality  
 alge748 Writing an inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line  
 set001 Set builder notation  
 set004 Set builder and interval notation  
 set002 Union and intersection of finite sets  
 set005 Union and intersection of intervals  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge860 Solving inequalities with no solution or all real numbers as solutions  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge747 Solving a compound linear inequality: Interval notation  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
 alge603 Introduction to solving an absolute value equation  
 alge864 Solving an absolute value equation: Problem type 1  
 alge865 Solving an absolute value equation: Problem type 2  
 alge866 Solving an absolute value equation: Problem type 3  
 alge867 Solving an absolute value equation: Problem type 4  
 alge167 Solving an absolute value equation of the form  $-ax+b = -cx+d$   
 alge868 Solving an absolute value inequality: Problem type 1  
 alge943 Writing an absolute value inequality given a graph on the number line  
 alge869 Solving an absolute value inequality: Problem type 2  
 alge870 Solving an absolute value inequality: Problem type 3  
 alge871 Solving an absolute value inequality: Problem type 4  
 alge872 Solving an absolute value inequality: Problem type 5

### Lines, Functions, Systems

alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge850 Table for a linear equation  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding x- and y-intercepts given the graph of a line on a grid  
 alge924 Finding x- and y-intercepts of a line given the equation: Basic  
 alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
 alge197 Graphing a line given its x- and y-intercepts

alge881 Graphing a line by first finding its x- and y-intercepts  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines  
 alge888 Finding the coordinate that yields a given slope  
 alge259 Graphing a line given its slope and y-intercept  
 alge196 Graphing a line through a given point with a given slope  
 alge876 Identifying linear equations: Advanced  
 alge874 Identifying linear functions given ordered pairs  
 alge891 Rewriting a linear equation in the form  $Ax + By = C$   
 alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
 alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
 alge882 Graphing a line by first finding its slope and y-intercept  
 alge258 Writing an equation of a line given its slope and y-intercept  
 alge892 Writing an equation and graphing a line given its slope and y-intercept  
 alge893 Writing an equation in slope-intercept form given the slope and a point  
 alge883 Graphing a line given its equation in point-slope form  
 alge894 Writing an equation in point-slope form given the slope and a point  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 alge895 Identifying parallel and perpendicular lines from equations  
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 alge897 Writing and evaluating a function that models a real-world situation: Advanced  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 alge992 Combining functions to write a new function that models a real-world situation  
 alge987 Comparing properties of linear functions given in different forms  
 alge989 Interpreting the parameters of a linear function that models a real-world situation  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 alge991 Solving a linear equation by graphing  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 mstat068 Predictions from the line of best fit  
 mstat067 Approximating the equation of a line of best fit and making predictions  
 mstat069 Computing residuals  
 mstat070 Interpreting residual plots  
 mstat071 Linear relationship and the correlation coefficient  
 mstat074 Identifying correlation and causation  
 stat021 Population standard deviation  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun016 Domain and range from ordered pairs  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun030 Evaluating a piecewise-defined function  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 pcalc924 Determining whether an equation defines a function: Basic  
 alge294 Finding outputs of a one-step function that models a real-world situation: Function notation  
 alge295 Finding outputs of a two-step function with decimals that models a real-world situation: Function notation  
 alge296 Finding inputs and outputs of a two-step function that models a real-world situation: Function notation  
 alge990 Domain and range of a linear function that models a real-world situation  
 fun007 Domain and range from the graph of a discrete relation  
 fun024 Domain and range from the graph of a continuous function  
 fun025 Domain and range from the graph of a piecewise function

fun026 Finding an output of a function from its graph  
pcalc761 Finding inputs and outputs of a function from its graph  
pcalc750 Finding intercepts of a nonlinear function given its graph  
alge999 Finding where a function is increasing, decreasing, or constant given the graph  
pcalc751 Finding where a function is increasing, decreasing, or constant given the graph: Interval notation  
pcalc752 Finding local maxima and minima of a function given the graph  
mstat018 Choosing a graph to fit a narrative: Basic  
mstat051 Choosing a graph to fit a narrative: Advanced  
alge896 Graphing an integer function and finding its range for a given domain  
alge570 Graphing a function of the form  $f(x) = ax + b$ : Integer slope  
alge571 Graphing a function of the form  $f(x) = ax + b$ : Fractional slope  
alge913 Graphing an absolute value equation of the form  $y = A - |x - h| + k$   
alge954 Graphing a parabola of the form  $y = ax^2 + bx + c$   
alge955 Graphing a parabola of the form  $y = ax^2 + c$   
alge572 Graphing a function of the form  $f(x) = ax^2$   
alge573 Graphing a function of the form  $f(x) = ax^2 + c$   
alge262 Graphing a cubic function of the form  $y = ax^3 + bx^2 + cx + d$   
fun031 Graphing a piecewise-defined function: Problem type 1  
alge997 Finding the average rate of change of a function given its equation  
alge998 Finding the average rate of change of a function given its graph  
alge914 Identifying solutions to a system of linear equations  
alge075 Classifying systems of linear equations from graphs  
alge725 Graphically solving a system of linear equations  
alge751 Solving a system of linear equations using substitution  
alge915 Solving a system of linear equations using elimination with addition  
alge076 Solving a system of linear equations using elimination with multiplication and addition  
alge916 Solving a system of linear equations with fractional coefficients  
alge917 Solving a system of linear equations with decimal coefficients  
alge752 Solving a 2x2 system of linear equations that is inconsistent or consistent dependent  
alge077 Creating an inconsistent system of linear equations  
alge988 Identifying the operations used to create equivalent systems of equations  
alge753 Solving a 3x3 system of linear equations: Problem type 1  
alge263 Interpreting the graphs of two functions  
alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
alge184 Solving a value mixture problem using a system of linear equations  
alge192 Solving a percent mixture problem using a system of linear equations  
alge224 Solving a distance, rate, time problem using a system of linear equations  
alge172 Solving a tax rate or interest rate problem using a system of linear equations  
alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
alge912 Identifying solutions to a linear inequality in two variables  
alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
alge720 Graphing a linear inequality in the plane: Slope-intercept form  
alge018 Graphing a linear inequality in the plane: Standard form  
alge079 Graphing a system of two linear inequalities: Basic  
alge921 Graphing a system of two linear inequalities: Advanced  
alge922 Graphing a system of three linear inequalities  
alge729 Writing a multi-step inequality for a real-world situation  
pcalc093 Solving a word problem using a system of linear inequalities: Problem type 1  
pcalc095 Linear programming  
pcalc094 Solving a word problem using linear programming  
pcalc037 Scalar multiplication of a matrix  
pcalc038 Addition or subtraction of matrices  
pcalc740 Linear combination of matrices  
pcalc042 Finding the determinant of a 2x2 matrix  
pcalc043 Finding the determinant of a 3x3 matrix  
pcalc045 Using Cramer's rule to solve a 2x2 system of linear equations  
pcalc047 Using Cramer's rule to solve a 3x3 system of linear equations  
pcalc712 Gauss-Jordan elimination with a 2x2 matrix  
pcalc046 Solving a system of linear equations given its augmented matrix

## Exponents and Polynomials

alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge311 Product rule with positive exponents: Univariate  
 alge030 Product rule with positive exponents: Multivariate  
 arith029 Ordering numbers with positive exponents  
 alge826 Understanding the power rules of exponents  
 alge306 Introduction to the power of a power rule of exponents  
 alge305 Introduction to the power of a product rule of exponents  
 alge307 Power rules with positive exponents: Multivariate products  
 alge308 Power rules with positive exponents: Multivariate quotients  
 alge756 Power and product rules with positive exponents  
 alge451 Simplifying a ratio of multivariate monomials: Basic  
 alge827 Introduction to the quotient rule of exponents  
 alge452 Simplifying a ratio of univariate monomials  
 alge026 Quotient of expressions involving exponents  
 alge453 Simplifying a ratio of multivariate monomials: Advanced  
 alge927 Power and quotient rules with positive exponents  
 alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 arith729 Evaluating an expression with a negative exponent: Whole number base  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge961 Introduction to the product rule with negative exponents  
 alge028 Product rule with negative exponents  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge926 Quotient rule with negative exponents: Problem type 2  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge928 Power and quotient rules with negative exponents: Problem type 1  
 alge929 Power and quotient rules with negative exponents: Problem type 2  
 alge757 Power, product, and quotient rules with negative exponents  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent  
 scinot012 Converting between scientific notation and standard form in a real-world situation  
 scinot008 Multiplying numbers written in scientific notation: Basic  
 scinot009 Multiplying numbers written in scientific notation: Advanced  
 scinot010 Dividing numbers written in scientific notation: Basic  
 scinot011 Dividing numbers written in scientific notation: Advanced  
 alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge932 Simplifying a sum or difference of multivariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge081 Multiplying conjugate binomials: Multivariate  
 alge032 Squaring a binomial: Univariate  
 alge068 Squaring a binomial: Multivariate  
 alge973 Multiplying binomials with negative coefficients  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge759 Dividing a polynomial by a monomial: Univariate  
 alge760 Dividing a polynomial by a monomial: Multivariate



alge761 Polynomial long division: Problem type 1  
 alge762 Polynomial long division: Problem type 2  
 alge763 Polynomial long division: Problem type 3  
 pcalc117 Synthetic division  
 pcalc786 Using the remainder theorem to evaluate a polynomial  
 alge985 Closure properties of integers and polynomials  
 alge605 Factoring a linear binomial  
 alge736 Introduction to the GCF of two monomials  
 alge930 Greatest common factor of three univariate monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge949 Factoring out a binomial from a polynomial: GCF factoring, basic  
 alge923 Factoring a univariate polynomial by grouping: Problem type 1  
 alge950 Factoring a univariate polynomial by grouping: Problem type 2  
 alge951 Factoring a multivariate polynomial by grouping: Problem type 1  
 alge952 Factoring a multivariate polynomial by grouping: Problem type 2  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge942 Factoring a quadratic in two variables with leading coefficient 1  
 alge936 Factoring out a constant before factoring a quadratic  
 alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1  
 alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
 alge941 Factoring a quadratic with leading coefficient greater than 1: Problem type 3  
 alge978 Factoring a quadratic by the ac-method  
 alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
 alge937 Factoring a quadratic with a negative leading coefficient  
 alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge945 Factoring a perfect square trinomial with leading coefficient greater than 1  
 alge946 Factoring a perfect square trinomial in two variables  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge839 Factoring a difference of squares in two variables  
 alge948 Factoring a polynomial involving a GCF and a difference of squares: Univariate  
 alge833 Factoring a polynomial involving a GCF and a difference of squares: Multivariate  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge042 Factoring with repeated use of the difference of squares formula  
 alge044 Factoring a sum or difference of two cubes  
 alge681 Solving an equation written in factored form  
 alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge703 Solving a word problem using a quadratic equation with rational roots  
 alge713 Using the Pythagorean Theorem and a quadratic equation to find side lengths of a right triangle  
 alge046 Roots of a product of polynomials  
 alge163 Writing a quadratic equation given the roots and the leading coefficient

### Rational Expressions

alge049 Restriction on a variable in a denominator: Linear  
 alge467 Restriction on a variable in a denominator: Quadratic  
 alge468 Evaluating a rational function: Problem type 1  
 alge469 Evaluating a rational function: Problem type 2  
 alge715 Domain of a rational function: Excluded values  
 alge454 Simplifying a ratio of factored polynomials: Linear factors  
 alge455 Simplifying a ratio of factored polynomials: Factors with exponents  
 alge456 Simplifying a ratio of polynomials using GCF factoring  
 alge457 Simplifying a ratio of linear polynomials: 1, -1, and no simplification  
 alge458 Simplifying a ratio of polynomials by factoring a quadratic with leading coefficient 1  
 alge710 Simplifying a ratio of polynomials: Problem type 1

alge682 Simplifying a ratio of polynomials: Problem type 2  
 alge459 Simplifying a ratio of polynomials: Problem type 3  
 alge034 Simplifying a ratio of multivariate polynomials  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge460 Multiplying rational expressions made up of linear expressions  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge461 Multiplying rational expressions involving quadratics with leading coefficients greater than 1  
 alge462 Multiplying rational expressions involving multivariate quadratics  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge463 Dividing rational expressions involving linear expressions  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge464 Dividing rational expressions involving quadratics with leading coefficients greater than 1  
 alge465 Dividing rational expressions involving multivariate quadratics  
 alge466 Multiplication and division of 3 rational expressions  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge427 Finding the LCD of rational expressions with linear denominators: Relatively prime  
 alge428 Finding the LCD of rational expressions with linear denominators: Common factors  
 alge429 Finding the LCD of rational expressions with quadratic denominators  
 alge430 Writing equivalent rational expressions with monomial denominators  
 alge431 Writing equivalent rational expressions with polynomial denominators  
 alge304 Writing equivalent rational expressions involving opposite factors  
 alge432 Introduction to adding fractions with variables and common denominators  
 alge433 Adding rational expressions with common denominators and monomial numerators  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge434 Adding rational expressions with common denominators and GCF factoring  
 alge435 Adding rational expressions with common denominators and quadratic factoring  
 alge436 Adding rational expressions with different denominators and a single occurrence of a variable  
 alge437 Adding rational expressions with denominators  $ax$  and  $bx$ : Basic  
 alge438 Adding rational expressions with denominators  $ax$  and  $bx$ : Advanced  
 alge439 Adding rational expressions with denominators  $axn$  and  $bxm$   
 alge440 Adding rational expressions with multivariate monomial denominators: Basic  
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge441 Adding rational expressions with linear denominators without common factors: Basic  
 alge442 Adding rational expressions with linear denominators without common factors: Advanced  
 alge443 Adding rational expressions with linear denominators with common factors: Basic  
 alge444 Adding rational expressions with linear denominators with common factors: Advanced  
 alge445 Adding rational expressions with denominators  $ax-b$  and  $b-ax$   
 alge661 Adding rational expressions involving different quadratic denominators  
 alge446 Adding 3 rational expressions with different quadratic denominators  
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 alge470 Complex fraction involving univariate monomials  
 alge058 Complex fraction involving multivariate monomials  
 alge471 Complex fraction: GCF factoring  
 alge472 Complex fraction: Quadratic factoring  
 alge473 Complex fraction made of sums involving rational expressions: Problem type 1  
 alge474 Complex fraction made of sums involving rational expressions: Problem type 2  
 alge475 Complex fraction made of sums involving rational expressions: Problem type 3  
 alge476 Complex fraction made of sums involving rational expressions: Problem type 4  
 alge477 Complex fraction made of sums involving rational expressions: Problem type 5  
 alge478 Complex fraction made of sums involving rational expressions: Problem type 6  
 alge479 Complex fraction made of sums involving rational expressions: Multivariate  
 alge480 Complex fraction with negative exponents: Problem type 1  
 alge481 Complex fraction with negative exponents: Problem type 2  
 alge162 Complex fraction that contains a complex fraction  
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge421 Solving a rational equation that simplifies to linear: Denominators  $ax$  and  $bx$   
 alge422 Solving a rational equation that simplifies to linear: Like binomial denominators

alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
alge423 Solving a rational equation that simplifies to linear: Factorable quadratic denominator  
alge424 Solving a rational equation that simplifies to quadratic: Proportional form, basic  
alge425 Solving a rational equation that simplifies to quadratic: Denominator  $x$   
alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
alge426 Solving a rational equation that simplifies to quadratic: Factorable quadratic denominator  
alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced  
alge508 Solving for a variable in terms of other variables in a rational equation: Problem type 1  
alge509 Solving for a variable in terms of other variables in a rational equation: Problem type 2  
alge510 Solving for a variable in terms of other variables in a rational equation: Problem type 3  
arith612 Word problem involving multiple rates  
alge770 Solving a work problem using a rational equation  
alge450 Solving a distance, rate, time problem using a rational equation  
geom133 Ratio of volumes  
alge059 Ordering fractions with variables  
alge982 Identifying direct variation equations  
alge938 Identifying direct variation from ordered pairs and writing equations  
alge904 Writing a direct variation equation  
alge175 Word problem on direct variation  
alge828 Interpreting direct variation from a graph  
alge905 Writing an inverse variation equation  
alge903 Identifying direct and inverse variation equations  
alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
alge176 Word problem on inverse variation  
alge220 Word problem on inverse proportions  
pcalc681 Writing an equation that models variation  
alge772 Word problem on combined variation  
pcalc917 Finding the asymptotes of a rational function: Constant over linear  
pcalc918 Finding the asymptotes of a rational function: Linear over linear  
alge515 Graphing a rational function: Constant over linear  
alge516 Graphing a rational function: Linear over linear

## Radicals

alge413 Finding all square roots of a number  
arith601 Square root of a rational perfect square  
arith760 Square roots of perfect squares with signs  
arith761 Square roots of integers raised to even exponents  
alge415 Introduction to simplifying a radical expression with an even exponent  
alge264 Square root of a perfect square monomial  
alge537 Using absolute value to simplify square roots of perfect square monomials  
arith094 Cube root of an integer  
alge549 Finding  $n$ th roots of perfect  $n$ th powers with signs  
arith768 Finding the  $n$ th root of a perfect  $n$ th power fraction  
alge550 Finding the  $n$ th root of a perfect  $n$ th power monomial  
alge538 Using absolute value to simplify higher radical expressions  
alge539 Table for a square root function  
alge546 Evaluating a cube root function  
alge540 Domain of a square root function: Basic  
pcalc763 Domain of a square root function: Advanced  
alge547 Domains of higher root functions  
alge543 Graphing a square root function: Problem type 1  
alge544 Graphing a square root function: Problem type 2  
alge545 Graphing a square root function: Problem type 3  
alge548 Graphing a cube root function  
alge812 Converting between radical form and exponent form  
alge560 Rational exponents: Unit fraction exponents and whole number bases  
alge561 Rational exponents: Unit fraction exponents and bases involving signs  
alge250 Rational exponents: Non-unit fraction exponent with a whole number base

alge251 Rational exponents: Negative exponents and fractional bases  
 alge558 Rational exponents: Product rule  
 alge559 Rational exponents: Quotient rule  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge562 Rational exponents: Power of a power rule  
 alge249 Rational exponents: Powers of powers with negative exponents  
 arith093 Simplifying the square root of a whole number less than 100  
 arith762 Simplifying the square root of a whole number greater than 100  
 alge080 Simplifying a radical expression with an even exponent  
 alge520 Introduction to simplifying a radical expression with an odd exponent  
 alge521 Simplifying a radical expression with an odd exponent  
 alge275 Simplifying a radical expression with two variables  
 alge273 Simplifying a higher root of a whole number  
 alge551 Introduction to simplifying a higher radical expression  
 alge552 Simplifying a higher radical expression: Univariate  
 alge811 Simplifying a higher radical expression: Multivariate  
 arith767 Introduction to square root addition or subtraction  
 arith032 Square root addition or subtraction  
 alge533 Square root addition or subtraction with three terms  
 alge531 Introduction to simplifying a sum or difference of radical expressions: Univariate  
 alge532 Simplifying a sum or difference of radical expressions: Univariate  
 alge084 Simplifying a sum or difference of radical expressions: Multivariate  
 alge554 Simplifying a sum or difference of higher roots  
 alge555 Simplifying a sum or difference of higher radical expressions  
 arith764 Introduction to square root multiplication  
 arith765 Square root multiplication: Basic  
 arith039 Square root multiplication: Advanced  
 alge522 Introduction to simplifying a product of radical expressions: Univariate  
 alge523 Simplifying a product of radical expressions: Univariate  
 alge640 Simplifying a product of radical expressions: Multivariate  
 alge082 Simplifying a product of radical expressions: Multivariate, fractional expressions  
 alge556 Introduction to simplifying a product of higher roots  
 alge557 Simplifying a product of higher radical expressions  
 alge525 Introduction to simplifying a product involving square roots using the distributive property  
 alge526 Simplifying a product involving square roots using the distributive property: Basic  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge984 Classifying sums and products as rational or irrational  
 arith766 Simplifying a quotient of square roots  
 alge530 Simplifying a quotient involving a sum or difference with a square root  
 alge527 Rationalizing a denominator: Quotient involving square roots  
 alge528 Rationalizing a denominator: Square root of a fraction  
 alge529 Rationalizing a denominator: Quotient involving a monomial  
 alge534 Rationalizing a denominator using conjugates: Integer numerator  
 alge535 Rationalizing a denominator using conjugates: Square root in numerator  
 alge536 Rationalizing a denominator using conjugates: Variable in denominator  
 alge564 Rationalizing a denominator: Quotient involving a higher radical  
 alge775 Rationalizing a denominator: Quotient involving higher radicals and monomials  
 alge563 Simplifying products or quotients of higher radicals with different indices: Univariate  
 alge776 Simplifying products or quotients of higher radicals with different indices: Multivariate  
 alge400 Introduction to solving a radical equation  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge402 Solving a radical equation that simplifies to a linear equation: One radical, advanced  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge405 Solving a radical equation with two radicals that simplifies to  $\sqrt{x} = a$   
 alge403 Solving a radical equation that simplifies to a quadratic equation: One radical, basic  
 alge404 Solving a radical equation that simplifies to a quadratic equation: One radical, advanced  
 alge411 Solving a radical equation with a quadratic expression under the radical  
 alge182 Solving a radical equation that simplifies to a quadratic equation: Two radicals  
 alge412 Algebraic symbol manipulation with radicals  
 alge542 Word problem involving radical equations: Basic  
 alge409 Word problem involving radical equations: Advanced

alge410 Solving an equation with a root index greater than 2: Problem type 1  
 alge417 Solving an equation with a root index greater than 2: Problem type 2  
 alge093 Solving an equation using the odd-root property: Problem type 1  
 alge228 Solving an equation using the odd-root property: Problem type 2  
 alge416 Solving an equation with exponent  $1/a$ : Problem type 1  
 alge418 Solving an equation with exponent  $1/a$ : Problem type 2  
 alge778 Using  $i$  to rewrite square roots of negative numbers  
 alge779 Simplifying a product and quotient involving square roots of negative numbers  
 pcalc048 Adding or subtracting complex numbers  
 pcalc049 Multiplying complex numbers  
 pcalc050 Dividing complex numbers  
 pcalc053 Simplifying a power of  $i$

### Quadratic Equations and Functions

alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
 alge227 Solving a quadratic equation using the square root property: Exact answers, advanced  
 alge094 Completing the square  
 alge780 Solving a quadratic equation by completing the square: Exact answers  
 alge095 Applying the quadratic formula: Exact answers  
 alge963 Applying the quadratic formula: Decimal answers  
 pcalc051 Solving a quadratic equation with complex roots  
 alge214 Discriminant of a quadratic equation  
 alge193 Discriminant of a quadratic equation with parameter  
 alge781 Solving an equation that can be written in quadratic form: Problem type 1  
 alge782 Solving an equation that can be written in quadratic form: Problem type 2  
 alge230 Solving an equation with positive rational exponent  
 alge231 Solving an equation with negative rational exponent  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge974 Finding the vertex,  $x$ -intercepts, and axis of symmetry from the graph of a parabola  
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 alge569 Graphing a parabola of the form  $y = x^2 + bx + c$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients  
 alge277 Finding the  $x$ -intercept(s) and the vertex of a parabola  
 pcalc793 Using a graphing calculator to find the  $x$ -intercept(s) and vertex of a quadratic function  
 pcalc774 Rewriting a quadratic function to find the vertex of its graph  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge975 Domain and range from the graph of a parabola  
 pcalc762 Range of a quadratic function  
 pcalc680 Writing the equation of a quadratic function given its graph  
 alge957 Solving a quadratic equation by graphing  
 alge996 Comparing properties of quadratic functions given in different forms  
 alge702 Classifying the graph of a function  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge784 Solving a quadratic inequality written in factored form  
 alge771 Solving a quadratic inequality  
 pcalc676 Solving a polynomial inequality  
 alge783 Solving a rational inequality: Problem type 1  
 pcalc677 Solving a rational inequality: Problem type 2  
 alge953 Translating the graph of a parabola: One step  
 alge898 Translating the graph of an absolute value function: One step  
 alge899 Translating the graph of an absolute value function: Two steps  
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge901 How the leading coefficient affects the graph of an absolute value function  
 alge185 Writing an equation for a function after a vertical translation  
 fun020 Writing an equation for a function after a vertical and horizontal translation

fun019 Sum, difference, and product of two functions  
 alge786 Quotient of two functions: Basic  
 pcalc756 Combining functions: Advanced  
 fun022 Composition of two functions: Basic  
 pcalc776 Expressing a function as a composition of two functions  
 fun021 Composition of two functions: Domain and range  
 alge129 Composition of two functions: Advanced  
 pcalc757 Determining whether an equation defines a function: Advanced  
 fun011 Horizontal line test  
 pcalc777 Determining whether two functions are inverses of each other  
 fun012 Inverse functions: Linear, discrete  
 alge130 Inverse functions: Rational  
 pcalc778 Inverse functions: Quadratic, cubic, radical

### Logarithms, Conic Sections, Sequences

alge971 Table for an exponential function  
 alge969 Graphing an exponential function:  $f(x) = ax$   
 alge970 Graphing an exponential function:  $f(x) = a(b)^x$   
 alge712 Graphing an exponential function and its asymptote:  $f(x) = a(b)^x$   
 pcalc922 Translating the graph of an exponential function  
 pcalc797 The graph, domain, and range of an exponential function  
 pcalc103 Graphing an exponential function and its asymptote:  $f(x) = a(e)^{x-b} + c$   
 alge830 Evaluating an exponential function that models a real-world situation  
 pcalc919 Evaluating an exponential function with base  $e$  that models a real-world situation  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest  
 alge966 Finding the initial amount and rate of change given an exponential function  
 alge968 Writing an equation that models exponential growth or decay  
 alge967 Writing an exponential function rule given a table of ordered pairs  
 alge993 Comparing linear, polynomial, and exponential functions  
 alge108 Converting between logarithmic and exponential equations  
 pcalc799 Converting between natural logarithmic and exponential equations  
 alge232 Evaluating a logarithmic expression  
 alge233 Solving an equation of the form  $\log_b a = c$   
 pcalc923 Translating the graph of a logarithmic function  
 alge788 Graphing a logarithmic function: Basic  
 pcalc800 The graph, domain, and range of a logarithmic function  
 pcalc104 Graphing a logarithmic function: Advanced  
 pcalc708 Basic properties of logarithms  
 pcalc779 Expanding a logarithmic expression: Problem type 1  
 pcalc780 Expanding a logarithmic expression: Problem type 2  
 alge787 Writing an expression as a single logarithm  
 pcalc612 Change of base for logarithms: Problem type 1  
 pcalc613 Change of base for logarithms: Problem type 2  
 pcalc803 Solving a multi-step equation involving a single logarithm  
 pcalc804 Solving a multi-step equation involving natural logarithms  
 alge113 Solving an equation involving logarithms on both sides: Problem type 1  
 pcalc805 Solving an equation involving logarithms on both sides: Problem type 2  
 alge301 Solving an exponential equation by finding common bases: Linear exponents  
 alge482 Solving an exponential equation by finding common bases: Linear and quadratic exponents  
 pcalc920 Solving an exponential equation by using logarithms: Decimal answers, basic  
 pcalc921 Solving an exponential equation by using natural logarithms: Decimal answers  
 alge111 Solving an exponential equation by using logarithms: Exact answers in logarithmic form  
 pcalc806 Using a graphing calculator to solve an exponential or logarithmic equation  
 alge178 Finding the time to reach a limit in a word problem on exponential growth or decay  
 pcalc614 Finding the initial or final amount in a word problem on exponential growth or decay  
 pcalc615 Finding the rate or time in a word problem on continuous exponential growth or decay  
 pcalc067 Graphing a parabola of the form  $ay^2 + by + cx + d = 0$  or  $ax^2 + bx + cy + d = 0$   
 pcalc068 Writing an equation of a parabola given the vertex and the focus



pcalc069 Finding the focus of a parabola of the form  $ay^2 + by + cx + d = 0$  or  $ax^2 + bx + cy + d = 0$   
 alge191 Midpoint of a line segment in the plane  
 alge414 Finding an endpoint of a line segment given the other endpoint and the midpoint  
 alge132 Distance between two points in the plane: Exact answers  
 pcalc605 Graphing a circle given its equation in standard form  
 pcalc128 Graphing a circle given its equation in general form: Basic  
 pcalc129 Graphing a circle given its equation in general form: Advanced  
 pcalc065 Writing an equation of a circle given its center and a point on the circle  
 pcalc066 Writing an equation of a circle given the endpoints of a diameter  
 pcalc734 Graphing an ellipse given its equation in standard form  
 pcalc070 Graphing an ellipse centered at the origin:  $Ax^2 + By^2 = C$   
 pcalc071 Graphing an ellipse given its equation in general form  
 pcalc735 Graphing a hyperbola given its equation in standard form  
 pcalc075 Graphing a hyperbola centered at the origin:  $Ax^2 - By^2 - C = 0$   
 pcalc076 Graphing a hyperbola given its equation in general form  
 pcalc736 Classifying conics given their equations  
 alge994 Graphically solving a system of linear and quadratic equations  
 alge995 Solving a system of linear and quadratic equations  
 pcalc796 Using a graphing calculator to solve a system of equations  
 pcalc098 Solving a system of nonlinear equations: Problem type 1  
 pcalc748 Graphing a quadratic inequality: Problem type 1  
 pcalc749 Graphing a quadratic inequality: Problem type 2  
 pcalc096 Graphing a system of nonlinear inequalities: Problem type 1  
 pcalc097 Graphing a system of nonlinear inequalities: Problem type 2  
 alge644 Finding the first terms of an arithmetic sequence using an explicit rule  
 alge645 Finding the first terms of a geometric sequence using an explicit rule  
 pcalc080 Finding the first terms of a sequence using an explicit rule with multiple occurrences of  $n$   
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge908 Finding the first terms of a sequence using a recursive rule  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 pcalc715 Finding a specified term of an arithmetic sequence given two terms of the sequence  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge910 Writing a recursive rule for an arithmetic sequence  
 pcalc718 Sum of the first  $n$  terms of an arithmetic sequence  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc717 Finding a specified term of a geometric sequence given two terms of the sequence  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge911 Writing recursive rules for arithmetic and geometric sequences  
 pcalc719 Sum of the first  $n$  terms of a geometric sequence  
 pcalc720 Sum of an infinite geometric series  
 alge965 Identifying linear, quadratic, and exponential functions given ordered pairs  
 pcalc087 Binomial formula

## B.54 Math Prep. for the CAHSEE

### Whole Numbers

arith001 Addition without carry  
 arith050 Addition with carry  
 arith630 Addition with carry to the hundreds place  
 arith012 Addition of large numbers  
 arith007 Subtraction without borrowing

arith006 Subtraction with borrowing  
arith682 Subtraction with multiple regrouping steps  
arith637 Subtraction and regrouping with zeros  
arith613 Word problem with addition or subtraction of whole numbers  
mstat061 Describing an increasing or decreasing pattern from a table of values  
arith008 One-digit multiplication  
arith003 Multiplication without carry  
arith004 Multiplication with carry  
arith615 Introduction to multiplication of large numbers  
arith014 Multiplication of large numbers  
arith075 Division facts  
arith614 Word problem with multiplication or division of whole numbers  
arith130 Word problem with multiplication and addition or subtraction of whole numbers  
arith451 Word problem on unit rates associated with ratios of whole numbers: Whole number answers  
arith243 Division of whole numbers given in fractional form  
arith052 Division without carry  
arith005 Division with carry  
arith901 Whole number division: 2-digit by 2-digit, no remainder  
arith902 Whole number division: 3-digit by 2-digit, no remainder  
arith616 Quotient and remainder: Problem type 1  
arith023 Word problem with division of whole numbers and rounding  
arith077 Ordering large numbers  
arith078 Rounding to tens or hundreds  
arith123 Rounding to hundreds or thousands  
arith061 Rounding to thousands, ten thousands, or hundred thousands  
arith101 Estimating a sum of whole numbers  
arith102 Estimating a difference of whole numbers  
arith677 Estimating a product  
arith678 Estimating a quotient  
arith604 Estimating a product or quotient of whole numbers  
arith692 Writing expressions using exponents  
arith233 Introduction to exponents  
arith683 Power of 10: Positive exponent  
arith645 Introduction to parentheses  
arith681 Introduction to order of operations  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith409 Introduction to the distributive property  
arith070 Least common multiple of 2 numbers  
arith804 Least common multiple of 3 numbers  
arith418 Word problem involving the least common multiple of 2 numbers  
arith240 Word problem with common multiples  
alge285 Evaluating an algebraic expression: Whole numbers with two operations  
alge649 Evaluating a formula  
alge648 Evaluating an algebraic expression: Whole numbers with one operation and an exponent  
alge650 Identifying solutions to a one-step linear equation: Problem type 1  
alge651 Identifying solutions to a one-step linear equation: Problem type 2  
alge009 Additive property of equality with whole numbers  
alge008 Multiplicative property of equality with whole numbers  
geom339 Perimeter of a polygon  
geom300 Perimeter of a square or a rectangle  
geom019 Area of a square or a rectangle  
geom866 Perimeter and area on a grid  
geom359 Identifying congruent shapes on a grid

**Fractions**

arith212 Equivalent fractions  
arith666 Introduction to simplifying a fraction  
arith067 Simplifying a fraction  
arith687 Fractional position on a number line  
arith667 Plotting fractions on a number line  
arith044 Ordering fractions with the same denominator  
arith091 Ordering fractions with the same numerator  
arith092 Using a common denominator to order fractions  
arith079 Product of a unit fraction and a whole number  
arith086 Product of a fraction and a whole number: Problem type 1  
arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith812 Product of a fraction and a whole number: Problem type 2  
arith905 Determining if a quantity is increased or decreased when multiplied by a fraction  
arith813 Multiplication of 3 fractions  
arith818 Word problem involving fractions and multiplication  
arith095 Multi-step word problem involving fractions and multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith819 Word problem involving fractions and division  
arith618 Addition or subtraction of fractions with the same denominator  
arith802 Addition or subtraction of fractions with the same denominator and simplification  
arith801 Finding the LCD of two fractions  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
arith803 Addition and subtraction of 3 fractions with different denominators  
arith805 Word problem involving addition or subtraction of fractions with different denominators  
arith100 Fractional part of a circle  
arith821 Exponents and fractions  
arith859 Order of operations with fractions: Problem type 1  
arith860 Order of operations with fractions: Problem type 2  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
alge646 Multiplicative property of equality with whole numbers: Fractional answers  
alge820 Multiplicative property of equality with fractions

**Decimals**

arith110 Decimal place value: Tenths and hundredths  
arith129 Introduction to ordering decimals  
arith608 Ordering decimals  
arith221 Rounding decimals  
arith718 Converting a decimal to a proper fraction in simplest form: Basic  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith624 Addition of aligned decimals  
arith013 Decimal addition with 3 numbers  
arith734 Subtraction of aligned decimals  
arith735 Decimal subtraction: Basic  
arith736 Decimal subtraction: Advanced  
arith132 Word problem with addition or subtraction of 2 decimals  
arith133 Word problem with addition of 3 or 4 decimals and whole numbers  
arith134 Word problem with subtraction of a whole number and a decimal: Regrouping with zeros  
arith739 Introduction to decimal multiplication  
arith017 Multiplication of a decimal by a whole number  
arith055 Decimal multiplication: Problem type 1  
arith082 Multiplication of a decimal by a power of ten

arith738 Multiplication of a decimal by a power of 0.1  
 arith135 Word problem with multiplication of a decimal and a whole number  
 arith628 Word problem with multiple decimal operations: Problem type 1  
 arith744 Whole number division with decimal answers  
 arith081 Division of a decimal by a whole number  
 arith083 Division of a decimal by a power of ten  
 arith136 Word problem with division of a decimal and a whole number  
 arith629 Word problem with multiple decimal operations: Problem type 2  
 arith103 Average of two numbers  
 arith131 Estimating a decimal sum or difference  
 arith752 Estimating a product of decimals  
 arith725 Converting a fraction with a denominator of 10 or 100 to a decimal  
 arith113 Converting a proper fraction with a denominator of 2, 4, or 5 to a decimal  
 arith114 Converting a mixed number with a denominator of 2, 4, or 5 to a decimal  
 arith727 Converting a fraction to a terminating decimal: Basic  
 arith728 Converting a fraction to a terminating decimal: Advanced  
 arith730 Converting a fraction to a repeating decimal: Basic  
 arith731 Converting a fraction to a repeating decimal: Advanced  
 arith111 Converting a mixed number to a terminating decimal: Basic  
 arith112 Converting a mixed number to a terminating decimal: Advanced  
 arith733 Using a calculator to convert a fraction to a rounded decimal  
 arith609 Ordering fractions and decimals  
 alge800 Additive property of equality with decimals  
 alge825 Multiplicative property of equality with decimals

### Ratios, Proportions, and Percents

arith663 Writing ratios for real-world situations  
 arith824 Simplifying a ratio of whole numbers: Problem type 1  
 arith827 Finding a unit price  
 arith455 Using tables to compare ratios  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 arith064 Solving a word problem on proportions using a unit rate  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 alge819 Solving a proportion of the form  $x/a=b/c$ : Basic  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 geom538 Finding lengths using scale models  
 geom539 Finding a scale factor: Same units  
 geom541 Using a scale drawing to find actual area  
 geom542 Reproducing a scale drawing at a different scale  
 unit005 U.S. Customary unit conversion with whole number values  
 mstat035 Conversions involving measurements in feet and inches  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 unit007 U.S. Customary unit conversion with mixed number values: One-step conversion  
 unit009 U.S. Customary area unit conversion with whole number values  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit012 Time unit conversion with whole number values  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 time006 Adding time  
 time011 Introduction to elapsed time  
 time007 Elapsed time  
 mstat065 Converting between temperatures in Fahrenheit and Celsius

arith836 Converting a fraction with a denominator of 100 to a percentage  
 arith837 Converting a percentage to a fraction with a denominator of 100  
 arith723 Introduction to converting a percentage to a decimal  
 arith833 Introduction to converting a decimal to a percentage  
 arith834 Converting between percentages and decimals  
 arith835 Converting between percentages and decimals in a real-world situation  
 arith090 Converting a percentage to a fraction in simplest form  
 arith838 Converting a fraction to a percentage: Denominator of 4, 5, or 10  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith843 Using a calculator to convert a fraction to a rounded percentage  
 arith842 Converting a fraction to a percentage in a real-world situation  
 arith840 Finding a percentage of a whole number  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith844 Finding a percentage of a whole number without a calculator: Advanced  
 arith862 Applying the percent equation: Problem type 1  
 arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount  
 arith857 Estimating a tip without a calculator  
 arith686 Writing a ratio as a percentage  
 arith069 Writing a ratio as a percentage without a calculator  
 arith850 Finding the rate of a tax or commission  
 arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
 arith851 Finding the final amount given the original amount and a percentage increase or decrease  
 arith847 Finding the sale price given the original price and percent discount  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith848 Finding the total cost including tax or markup  
 arith031 Finding the original price given the sale price and percent discount  
 arith858 Finding the percentage increase or decrease: Basic  
 arith225 Finding the percentage increase or decrease: Advanced  
 arith232 Finding simple interest without a calculator  
 arith853 Introduction to compound interest

### Real Numbers

alge286 Plotting integers on a number line  
 arith691 Ordering integers  
 arith402 Plotting opposite integers on a number line  
 arith403 Finding opposites of integers  
 arith605 Plotting rational numbers on a number line  
 arith071 Absolute value of a number  
 arith412 Finding all numbers with a given absolute value  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith754 Addition and subtraction with 3 integers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers  
 arith116 Signed fraction addition or subtraction: Basic  
 arith117 Signed decimal addition and subtraction  
 arith822 Signed fraction multiplication: Basic  
 arith814 Signed fraction division  
 arith440 Operations with absolute value: Problem type 1  
 alge694 Computing the distance between two integers on a number line  
 arith702 Exponents and integers: Problem type 1  
 arith703 Exponents and integers: Problem type 2  
 arith704 Exponents and signed fractions  
 arith118 Order of operations with integers  
 arith600 Order of operations with integers and exponents  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction

alge004 Evaluating a quadratic expression: Integers  
 alge010 Additive property of equality with integers  
 alge836 Additive property of equality with signed fractions  
 alge797 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions

### Equations and Inequalities

alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 alge666 Combining like terms: Fractional coefficients  
 alge665 Combining like terms: Decimal coefficients  
 alge310 Multiplying a constant and a linear monomial  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge610 Distributive property: Fractional coefficients  
 alge608 Using distribution and combining like terms to simplify: Univariate  
 alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
 alge293 Combining like terms in a quadratic expression  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge803 Using two steps to solve an equation with whole numbers  
 alge266 Additive property of equality with a negative coefficient  
 alge006 Solving a two-step equation with integers  
 alge200 Solving an equation to find the value of an expression  
 alge920 Introduction to solving an equation with parentheses  
 alge837 Solving a multi-step equation given in fractional form  
 alge986 Identifying properties used to solve a linear equation  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge611 Introduction to solving a linear equation with a variable on each side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge614 Clearing fractions in an equation  
 alge208 Solving a two-step equation with signed fractions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge840 Solving a proportion of the form  $(x+a) \div b = c \div d$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 alge658 Introduction to solving a rational equation  
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
 alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
 alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
 alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
 alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
 alge518 Solving for a variable inside parentheses in terms of other variables  
 alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
 alge603 Introduction to solving an absolute value equation  
 alge864 Solving an absolute value equation: Problem type 1  
 alge865 Solving an absolute value equation: Problem type 2  
 alge733 Writing a one-step expression for a real-world situation  
 alge831 Translating a phrase into a one-step expression  
 alge291 Translating a phrase into a two-step expression  
 alge016 Translating a sentence into a one-step equation  
 alge841 Translating a sentence into a multi-step equation



arith504 Writing an equation to represent a proportional relationship  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge628 Writing an equation of the form  $Ax + B = C$  to solve a word problem  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge673 Writing an equation to represent a real-world problem: Variable on both sides  
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge794 Solving a value mixture problem using a linear equation  
 alge218 Solving a word problem involving rates and time conversion  
 alge796 Solving a distance, rate, time problem using a linear equation  
 arith612 Word problem involving multiple rates  
 alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge653 Introduction to identifying solutions to an inequality  
 alge748 Writing an inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge652 Identifying solutions to a one-step linear inequality  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge809 Multiplicative property of inequality with whole numbers  
 alge854 Multiplicative property of inequality with integers  
 alge621 Solving a word problem using a one-step linear inequality  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge636 Solving a two-step linear inequality with whole numbers  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge619 Solving a word problem using a two-step linear inequality and describing the solution  
 alge623 Solving a word problem using a two-step linear inequality  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge868 Solving an absolute value inequality: Problem type 1  
 alge869 Solving an absolute value inequality: Problem type 2  
 alge870 Solving an absolute value inequality: Problem type 3

## Graphing

alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge695 Finding distances between points that share a common coordinate given the graph  
 alge696 Finding distances between points that share a common coordinate given their coordinates  
 alge282 Function tables with two-step rules  
 alge850 Table for a linear equation  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 alge280 Graphing a line in quadrant 1  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding x- and y-intercepts given the graph of a line on a grid  
 alge924 Finding x- and y-intercepts of a line given the equation: Basic  
 alge210 Finding x- and y-intercepts of a line given the equation: Advanced

alge197 Graphing a line given its x- and y-intercepts  
 geom358 Identifying parallel and perpendicular lines  
 mstat007 Interpreting a line graph  
 arith512 Finding outputs and rate of increase given the graph of a line that models a real-world situation  
 alge575 Finding slope given the graph of a line in quadrant 1 that models a real-world situation  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge814 Using right triangles to find the slope of a line  
 alge259 Graphing a line given its slope and y-intercept  
 alge196 Graphing a line through a given point with a given slope  
 alge175 Word problem on direct variation  
 alge828 Interpreting direct variation from a graph  
 alge176 Word problem on inverse variation  
 alge220 Word problem on inverse proportions  
 alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
 alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
 alge882 Graphing a line by first finding its slope and y-intercept  
 alge258 Writing an equation of a line given its slope and y-intercept  
 alge893 Writing an equation in slope-intercept form given the slope and a point  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge072 Writing the equation of the line through two given points  
 geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
 alge630 Finding outputs of a one-step function that models a real-world situation: Two variable equation  
 alge655 Writing and evaluating a function that models a real-world situation: Basic  
 alge897 Writing and evaluating a function that models a real-world situation: Advanced  
 alge656 Writing an equation and drawing its graph to model a real-world situation: Basic  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 mstat018 Choosing a graph to fit a narrative: Basic  
 set001 Set builder notation  
 set002 Union and intersection of finite sets  
 fun001 Table for a linear function  
 alge954 Graphing a parabola of the form  $y = ax^2$   
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 alge702 Classifying the graph of a function  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge914 Identifying solutions to a system of linear equations  
 alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations  
 alge815 Introduction to using substitution to solve a linear equation  
 alge816 Solving a system of linear equations of the form  $y = mx + b$   
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge079 Graphing a system of two linear inequalities: Basic

### Exponents, Polynomials, and Radicals

alge686 Introduction to the product rule with positive exponents: Whole number base  
 alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge311 Product rule with positive exponents: Univariate  
 alge030 Product rule with positive exponents: Multivariate  
 alge690 Introduction to the power of a power rule with positive exponents: Whole number base  
 alge826 Understanding the power rules of exponents  
 alge306 Introduction to the power of a power rule of exponents

alge305 Introduction to the power of a product rule of exponents  
 alge307 Power rules with positive exponents: Multivariate products  
 alge308 Power rules with positive exponents: Multivariate quotients  
 alge451 Simplifying a ratio of multivariate monomials: Basic  
 alge688 Introduction to the quotient rule with positive exponents: Whole number base  
 alge827 Introduction to the quotient rule of exponents  
 alge452 Simplifying a ratio of univariate monomials  
 alge026 Quotient of expressions involving exponents  
 arith029 Ordering numbers with positive exponents  
 alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 arith729 Evaluating an expression with a negative exponent: Whole number base  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge687 Introduction to the product rule with negative exponents: Whole number base  
 alge961 Introduction to the product rule with negative exponents  
 alge028 Product rule with negative exponents  
 alge689 Introduction to the quotient rule with negative exponents: Whole number base  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge691 Introduction to the power of a power rule with negative exponents: Whole number base  
 alge025 Power of a power rule with negative exponents  
 scinot023 Introduction to scientific notation with positive exponents  
 arith036 Scientific notation with positive exponent  
 scinot024 Introduction to scientific notation with negative exponents  
 arith037 Scientific notation with negative exponent  
 scinot012 Converting between scientific notation and standard form in a real-world situation  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge764 Multiplying conjugate binomials: Univariate  
 alge032 Squaring a binomial: Univariate  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge759 Dividing a polynomial by a monomial: Univariate  
 arith016 Square root of a perfect square  
 arith763 Using a calculator to approximate a square root  
 arith601 Square root of a rational perfect square  
 arith602 Estimating a square root  
 alge415 Introduction to simplifying a radical expression with an even exponent  
 alge264 Square root of a perfect square monomial  
 alge400 Introduction to solving a radical equation  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic

## Geometry

geom078 Sides of polygons having the same perimeter  
 geom221 Finding the missing length in a figure  
 geom353 Perimeter of a piecewise rectangular figure  
 alge615 Writing algebraic expressions for the perimeter of a figure  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom561 Finding the dimensions of a rectangle given its perimeter and a relationship between sides  
 geom350 Distinguishing between the area and perimeter of a rectangle  
 alge616 Writing algebraic expressions for the area of a figure  
 geom410 Word problem involving the area of a square or a rectangle

geom143 Finding the perimeter or area of a rectangle given one of these values  
geom340 Area of a piecewise rectangular figure  
geom562 Area between two rectangles  
geom142 Word problem involving the area between two rectangles  
geom501 Finding the area of a right triangle on a grid  
geom509 Finding the area of a right triangle or its corresponding rectangle  
geom801 Area of a triangle  
geom344 Area involving rectangles and triangles  
geom022 Area of a parallelogram  
geom023 Area of a trapezoid  
geom536 Drawing and identifying a polygon in the coordinate plane  
geom537 Finding the perimeter or area of a rectangle in the coordinate plane  
alge407 Introduction to the Pythagorean Theorem  
geom044 Pythagorean Theorem  
alge408 Word problem involving the Pythagorean Theorem  
geom068 Computing an area using the Pythagorean Theorem  
geom603 Identifying side lengths that give right triangles  
geom016 Circumference of a circle  
geom218 Finding the radius or the diameter of a circle given its circumference  
geom838 Circumference ratios  
geom301 Perimeter involving rectangles and circles  
geom026 Area of a circle  
geom802 Circumference and area of a circle  
geom805 Arc length and area of a sector of a circle  
geom302 Area involving rectangles and circles  
geom563 Area between two concentric circles  
geom036 Word problem involving the area between two concentric circles  
geom214 Area involving inscribed figures  
geom311 Volume of a rectangular prism  
geom354 Volume of a rectangular prism made of unit cubes  
geom571 Word problem involving the volume of a rectangular prism  
geom558 Word problem involving the rate of filling or emptying a rectangular prism  
geom505 Volume of a piecewise rectangular prism  
geom090 Volume of a triangular prism  
geom035 Volume of a cylinder  
geom573 Word problem involving the volume of a cylinder  
geom092 Word problem involving the rate of filling or emptying a cylinder  
geom133 Ratio of volumes  
geom031 Surface area of a cube or a rectangular prism  
geom632 Surface area of a rectangular prism made of unit cubes  
geom555 Distinguishing between surface area and volume  
geom576 Word problem involving the surface area of a rectangular prism  
geom345 Surface area of a piecewise rectangular prism made of unit cubes  
geom091 Surface area of a triangular prism  
geom621 Surface area of a cylinder  
geom034 Surface area of a cylinder: Exact answers in terms of  $\pi$   
geom578 Word problem involving the surface area of a cylinder  
geom338 Surface area involving prisms or cylinders  
geom360 Identifying similar or congruent shapes on a grid  
geom037 Similar polygons  
geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids  
geom847 Similar solids: Problem type 2  
geom519 Identifying and naming congruent parts of congruent triangles  
geom596 Translating a point and giving its coordinates: One step  
geom598 Determining if figures are related by a translation  
geom909 Translating a point and giving its coordinates: Two steps  
geom330 Translating a polygon  
geom331 Using a translated point to find coordinates of other translated points  
arith408 Reflecting a point across an axis  
geom590 Reflecting a point across an axis and giving its coordinates  
geom592 Determining if figures are related by a reflection  
arith407 Finding the coordinates of a point reflected across an axis

geom534 Reflecting a polygon across the x-axis or y-axis  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom333 Finding the coordinates of three points reflected over an axis  
 geom334 Drawing lines of symmetry

### Data Analysis and Probability

mstat080 Choosing an appropriate method for gathering data: Problem type 1  
 mstat081 Choosing an appropriate method for gathering data: Problem type 2  
 mstat097 Constructing a two-way frequency table: Basic  
 mstat049 Computing a percentage from a table of values  
 mstat087 Making an inference using a two-way frequency table  
 mstat005 Constructing a bar graph for non-numerical data  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 arith856 Finding a percentage of a total amount in a circle graph  
 arith916 Computing percentages for categories of a budget  
 stat801 Computations from a circle graph  
 stat804 Interpreting a circle graph or pie chart  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 mstat003 Mode of a data set  
 mstat001 Mean of a data set  
 mstat028 Mean and median of a data set  
 stat802 Rejecting unreasonable claims based on average statistics  
 stat805 Making a reasonable inference based on proportion statistics  
 mstat025 Finding if a question can be answered by the data  
 mstat042 Interpreting a Venn diagram of 2 sets  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 mstat099 Determining a sample space and outcomes for a simple event  
 mstat100 Determining a sample space and outcomes for a compound event  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events

## B.55 Prep. for FL Algebra 1 EOC Assessment

### Arithmetic Readiness

arith123 Rounding to hundreds or thousands  
 arith233 Introduction to exponents  
 arith692 Writing expressions using exponents  
 arith683 Power of 10: Positive exponent  
 arith048 Order of operations with whole numbers  
 arith051 Order of operations with whole numbers and grouping symbols  
 arith693 Order of operations with whole numbers and exponents: Basic  
 alge731 Evaluating an algebraic expression: Whole numbers with two operations

arith658 Filling in missing operations to make an equation  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith070 Least common multiple of 2 numbers  
arith212 Equivalent fractions  
arith067 Simplifying a fraction  
arith092 Using a common denominator to order fractions  
arith618 Addition or subtraction of fractions with the same denominator  
arith801 Finding the LCD of two fractions  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
arith079 Product of a unit fraction and a whole number  
arith086 Product of a fraction and a whole number: Problem type 1  
arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith697 Mixed arithmetic operations with fractions  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith084 Addition of mixed numbers with the same denominator and carry  
arith216 Subtraction of mixed numbers with the same denominator and borrowing  
arith020 Mixed number multiplication: Problem type 1  
arith068 Mixed number division  
arith110 Decimal place value: Tenths and hundredths  
arith220 Decimal place value: Hundreds to ten thousandths  
arith221 Rounding decimals  
arith608 Ordering decimals  
arith609 Ordering fractions and decimals  
arith222 Converting a fraction to a terminating decimal  
arith089 Converting a fraction to a repeating decimal  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith013 Decimal addition with 3 numbers  
arith625 Subtraction of aligned decimals  
arith626 Word problem with one decimal operation: Problem type 1  
arith627 Word problem with one decimal operation: Problem type 2  
arith017 Multiplication of a decimal by a whole number  
arith082 Multiplication of a decimal by a power of ten  
arith055 Decimal multiplication: Problem type 1  
arith081 Division of a decimal by a whole number  
arith083 Division of a decimal by a power of ten  
arith226 Converting between percentages and decimals  
arith090 Converting a percentage to a fraction in simplest form  
arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
arith069 Writing a ratio as a percentage without a calculator  
mstat049 Computing a percentage from a table of values  
arith030 Finding a percentage of a whole number without a calculator: Basic  
arith698 Applying the percent equation  
arith074 Finding the sale price without a calculator given the original price and percent discount  
arith031 Finding the original price given the sale price and percent discount  
arith225 Finding the percentage increase or decrease: Advanced  
arith232 Finding simple interest without a calculator  
geom339 Perimeter of a polygon  
geom300 Perimeter of a square or a rectangle  
geom221 Finding the missing length in a figure  
geom019 Area of a square or a rectangle  
geom340 Area of a piecewise rectangular figure  
geom142 Word problem involving the area between two rectangles  
geom801 Area of a triangle



geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom016 Circumference of a circle  
 geom301 Perimeter involving rectangles and circles  
 geom838 Circumference ratios  
 geom802 Circumference and area of a circle  
 geom302 Area involving rectangles and circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom031 Surface area of a cube or a rectangular prism  
 geom091 Surface area of a triangular prism  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom842 Surface area of a sphere  
 geom311 Volume of a rectangular prism  
 geom090 Volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom035 Volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom841 Volume of a sphere  
 geom039 Finding supplementary and complementary angles  
 mstat034 Measuring length to the nearest quarter or half inch  
 mstat035 Conversions involving measurements in feet and inches  
 mstat036 Adding measurements in feet and inches  
 unit005 U.S. Customary unit conversion with whole number values  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 unit009 U.S. Customary area unit conversion with whole number values  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 mstat065 Converting between temperatures in Fahrenheit and Celsius

## Real Numbers

alge001 Identifying numbers as integers or non-integers  
 alge002 Identifying numbers as rational or irrational  
 mstat038 Reading the temperature from a thermometer  
 arith699 Writing a signed number for a real-world situation  
 alge286 Plotting integers on a number line  
 arith687 Fractional position on a number line  
 arith605 Plotting rational numbers on a number line  
 arith691 Ordering integers  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith701 Word problem with addition or subtraction of integers  
 arith116 Signed fraction addition or subtraction: Basic  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers  
 arith822 Signed fraction multiplication: Basic  
 arith702 Exponents and integers: Problem type 1

arith703 Exponents and integers: Problem type 2  
 arith704 Exponents and signed fractions  
 arith118 Order of operations with integers  
 arith600 Order of operations with integers and exponents  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 arith071 Absolute value of a number  
 arith104 Operations with absolute value: Problem type 2  
 geom525 Computing distances between decimals on the number line  
 alge187 Properties of addition  
 alge188 Properties of real numbers  
 arith657 Understanding the distributive property  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 alge663 Combining like terms: Advanced  
 alge293 Combining like terms in a quadratic expression

### Linear Equations and Inequalities

alge009 Additive property of equality with whole numbers  
 alge800 Additive property of equality with decimals  
 alge010 Additive property of equality with integers  
 alge266 Additive property of equality with a negative coefficient  
 alge008 Multiplicative property of equality with whole numbers  
 alge820 Multiplicative property of equality with fractions  
 alge825 Multiplicative property of equality with decimals  
 alge740 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge803 Using two steps to solve an equation with whole numbers  
 alge006 Solving a two-step equation with integers  
 alge208 Solving a two-step equation with signed fractions  
 alge824 Solving a two-step equation with signed decimals  
 alge200 Solving an equation to find the value of an expression  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge810 Introduction to algebraic symbol manipulation  
 alge743 Algebraic symbol manipulation: Problem type 1  
 alge744 Algebraic symbol manipulation: Problem type 2  
 alge733 Writing a one-step expression for a real-world situation  
 alge602 Writing a one-step variable expression for a real-world situation  
 alge291 Translating a phrase into a two-step expression  
 alge016 Translating a sentence into a one-step equation  
 alge730 Writing a multi-step equation for a real-world situation  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge794 Solving a value mixture problem using a linear equation

alge795 Solving a percent mixture problem using a linear equation  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 alge218 Solving a word problem involving rates and time conversion  
 alge796 Solving a distance, rate, time problem using a linear equation  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom530 Solving equations involving vertical angles  
 geom531 Solving equations involving angles and a pair of parallel lines  
 geom001 Finding an angle measure of a triangle given two angles  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 alge015 Translating a sentence by using an inequality symbol  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge019 Solving a linear inequality: Problem type 1  
 alge020 Solving a linear inequality: Problem type 2  
 alge021 Solving a linear inequality: Problem type 3  
 alge207 Solving a linear inequality: Problem type 4  
 alge745 Solving a linear inequality: Problem type 5  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge748 Writing an inequality for a real-world situation  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
 alge270 Solving an absolute value equation of the form  $a - x = b$  or  $-x + a = b$   
 alge103 Solving an absolute value equation of the form  $-ax + b = c$   
 alge170 Solving an absolute value inequality: Basic

### Functions and Lines

set004 Set builder and interval notation  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 fun002 Graphing integer functions  
 fun016 Domain and range from ordered pairs  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 pcalc761 Finding inputs and outputs of a function from its graph  
 pcalc750 Finding intercepts of a nonlinear function given its graph  
 pcalc751 Finding where a function is increasing, decreasing, or constant given the graph: Interval notation  
 pcalc752 Finding local maxima and minima of a function given the graph  
 fun024 Domain and range from the graph of a continuous function  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 pcalc114 Even and odd functions: Problem type 1  
 pcalc768 Finding the average rate of change of a function  
 fun019 Sum, difference, and product of two functions  
 fun022 Composition of two functions: Basic  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge850 Table for a linear equation  
 alge066 Finding a solution to a linear equation in two variables  
 alge216 Determining whether given points lie on one, both, or neither of 2 lines given equations  
 alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
 alge194 Graphing a line given its equation in slope-intercept form  
 alge195 Graphing a line given its equation in standard form

alge196 Graphing a line through a given point with a given slope  
 alge198 Graphing a vertical or horizontal line  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge069 Finding the y-intercept of a line given its equation  
 alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
 alge684 Finding slope given the graph of a line on a grid  
 alge685 Finding slope given two points on the line  
 alge631 Finding the slope of a line given its equation  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge071 Writing the equation of a line given the slope and a point on the line  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form

### Systems

alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations  
 alge751 Solving a system of linear equations using substitution  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge752 Solving a 2x2 system of linear equations that is inconsistent or consistent dependent  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge184 Solving a value mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 alge079 Graphing a system of two linear inequalities: Basic  
 pcalc037 Scalar multiplication of a matrix  
 pcalc038 Addition or subtraction of matrices  
 pcalc740 Linear combination of matrices

### Exponents

alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge030 Product rule with positive exponents: Multivariate  
 alge028 Product rule with negative exponents  
 alge827 Introduction to the quotient rule of exponents  
 alge026 Quotient of expressions involving exponents  
 alge755 Quotient rule with negative exponents: Problem type 1

alge826 Understanding the power rules of exponents  
 alge754 Introduction to the power rules of exponents  
 alge027 Power rules with positive exponents  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge756 Power and product rules with positive exponents  
 arith029 Ordering numbers with positive exponents  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent  
 scinot002 Multiplying and dividing numbers written in scientific notation  
 alge812 Converting between radical form and exponent form  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge249 Rational exponents: Powers of powers with negative exponents  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest  
 alge712 Graphing an exponential function and its asymptote:  $f(x) = a(b)^x$   
 alge807 Finding the next terms of a sequence with whole numbers  
 alge732 Finding patterns in shapes  
 pcalc080 Finding the first terms of a sequence using an explicit rule with multiple occurrences of  $n$   
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term

### Polynomials and Factoring

alge758 Degree and leading coefficient of a univariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge764 Multiplying conjugate binomials: Univariate  
 alge765 Multiplying binomials in two variables  
 alge032 Squaring a binomial: Univariate  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge759 Dividing a polynomial by a monomial: Univariate  
 alge760 Dividing a polynomial by a monomial: Multivariate  
 alge761 Polynomial long division: Problem type 1  
 alge762 Polynomial long division: Problem type 2  
 alge736 Introduction to the GCF of two monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge040 Factoring a quadratic with leading coefficient greater than 1  
 alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
 alge043 Factoring a perfect square trinomial  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge624 Factoring a difference of squares  
 alge038 Factoring a polynomial by grouping: Problem type 1  
 alge181 Factoring a polynomial by grouping: Problem type 2

### Rational and Radical Expressions

alge715 Domain of a rational function: Excluded values  
 alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2

alge053 Multiplying rational expressions involving multivariate monomials  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge057 Adding rational expressions with different denominators:  $ax$ ,  $bx$   
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge622 Adding rational expressions with different denominators:  $x+a$ ,  $x+b$   
 alge661 Adding rational expressions involving different quadratic denominators  
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 alge058 Complex fraction involving multivariate monomials  
 alge767 Complex fraction: GCF and quadratic factoring  
 alge768 Complex fraction made of sums involving rational expressions  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 arith663 Writing ratios for real-world situations  
 arith064 Solving a word problem on proportions using a unit rate  
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 arith612 Word problem involving multiple rates  
 alge770 Solving a work problem using a rational equation  
 alge220 Word problem on inverse proportions  
 pcalc681 Writing an equation that models variation  
 alge175 Word problem on direct variation  
 alge176 Word problem on inverse variation  
 alge772 Word problem on combined variation  
 pcalc789 Finding the asymptotes of a rational function: Basic  
 pcalc108 Graphing a rational function: Constant or linear over linear  
 alge213 Domain of a square root function  
 pcalc781 Graphing a square root function  
 arith016 Square root of a perfect square  
 arith602 Estimating a square root  
 arith601 Square root of a rational perfect square  
 arith094 Cube root of an integer  
 arith093 Simplifying the square root of a whole number less than 100  
 alge264 Square root of a perfect square monomial  
 alge080 Simplifying a radical expression with an even exponent  
 alge275 Simplifying a radical expression with two variables  
 arith032 Square root addition or subtraction  
 arith039 Square root multiplication: Advanced  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge086 Rationalizing the denominator of a radical expression  
 alge088 Rationalizing the denominator of a radical expression using conjugates  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge091 Solving a radical equation that simplifies to a quadratic equation: One radical  
 alge182 Solving a radical equation that simplifies to a quadratic equation: Two radicals  
 geom044 Pythagorean Theorem



**Quadratic Functions and Equations**

alge277 Finding the x-intercept(s) and the vertex of a parabola  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge252 Graphing a parabola of the form  $y = ax^2$   
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 alge702 Classifying the graph of a function  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge185 Writing an equation for a function after a vertical translation  
 fun020 Writing an equation for a function after a vertical and horizontal translation  
 pcalc769 Translating the graph of a function: One step  
 pcalc770 Translating the graph of a function: Two steps  
 pcalc771 Transforming the graph of a function by reflecting over an axis  
 pcalc772 Transforming the graph of a function by shrinking or stretching  
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 alge681 Solving an equation written in factored form  
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
 alge227 Solving a quadratic equation using the square root property: Exact answers, advanced  
 alge094 Completing the square  
 alge780 Solving a quadratic equation by completing the square: Exact answers  
 alge095 Applying the quadratic formula: Exact answers  
 alge214 Discriminant of a quadratic equation  
 alge703 Solving a word problem using a quadratic equation with rational roots  
 alge524 Solving a word problem using a quadratic equation with irrational roots

**Data Analysis and Probability**

mstat004 Constructing a histogram for numerical data  
 mstat005 Constructing a bar graph for non-numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat007 Interpreting a line graph  
 stat804 Interpreting a circle graph or pie chart  
 stat801 Computations from a circle graph  
 mstat006 Constructing a box-and-whisker plot  
 mstat031 Interpreting a stem-and-leaf plot  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 geom814 Angle measure in a circle graph  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat001 Mean of a data set  
 mstat028 Mean and median of a data set  
 stat803 Finding the value for a new score that will yield a given mean  
 mstat029 How changing a value affects the mean and median  
 mstat053 Choosing the best measure to describe data  
 mstat066 Weighted mean  
 mstat025 Finding if a question can be answered by the data  
 stat802 Rejecting unreasonable claims based on average statistics  
 stat805 Making a reasonable inference based on proportion statistics  
 stat021 Population standard deviation  
 mstat042 Interpreting a Venn diagram of 2 sets  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle

mstat015 Counting principle  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 stat790 Permutations, combinations, and the multiplication principle for counting  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat032 Probability of the union of two events

### Perimeter, Area, and Volume

geom353 Perimeter of a piecewise rectangular figure  
 geom078 Sides of polygons having the same perimeter  
 geom350 Distinguishing between the area and perimeter of a rectangle  
 geom351 Areas of rectangles with the same perimeter  
 geom344 Area involving rectangles and triangles  
 geom213 Area of a regular polygon  
 geom832 Area of quadrilaterals in the coordinate plane  
 alge724 Finding an area in terms of variables  
 geom218 Finding the radius or the diameter of a circle given its circumference  
 geom805 Arc length and area of a sector of a circle  
 geom830 Counting the cubes in a solid made of cubes  
 geom354 Volume of a rectangular prism made of unit cubes  
 geom505 Volume of a piecewise rectangular prism  
 geom219 Nets of solids  
 geom861 Nets of solids: Advanced  
 geom348 Vertices, edges, and faces of a solid  
 geom816 Side views of a solid made of cubes  
 geom345 Surface area of a piecewise rectangular prism made of unit cubes  
 geom338 Surface area involving prisms or cylinders

### Lines, Angles, and Triangles

glogic001 Conditional statements and negations  
 glogic005 The converse, inverse, and contrapositive of a conditional statement  
 glogic008 Conditional statements and deductive reasoning  
 geom349 Naming segments, rays, and lines  
 geom526 Midpoint of a number line segment  
 geom521 Segment addition and midpoints  
 geom616 Introduction to proofs: Justifying statements  
 geom614 Proofs involving segment congruence  
 geom358 Identifying parallel and perpendicular lines  
 geom835 Introduction to proofs involving parallel lines  
 geom836 Proofs involving parallel lines  
 geom154 Constructing the perpendicular bisector of a line segment  
 geom150 Constructing a pair of perpendicular lines  
 geom157 Constructing a pair of parallel lines  
 geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom304 Identifying corresponding and alternate angles

geom305 Identifying supplementary and vertical angles  
 geom850 Angle addition with relationships between angles  
 geom851 Angle addition and angle bisectors  
 geom611 Proofs involving angle congruence  
 geom159 Constructing congruent angles  
 geom158 Constructing an angle bisector  
 geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom309 Finding an angle measure for a triangle sharing a side with another triangle  
 geom844 Using triangle inequality to determine if side lengths form a triangle  
 geom845 Using triangle inequality to determine possible lengths of a third side  
 geom854 Relationship between angle measures and side lengths in a triangle  
 geom855 Relationship between angle measures and side lengths in two triangles  
 geom068 Computing an area using the Pythagorean Theorem  
 geom862 Using the Pythagorean Theorem repeatedly  
 geom506 Special right triangles: Exact answers  
 geom212 Circles inscribed in and circumscribed about regular polygons  
 geom520 Identifying and naming congruent triangles  
 geom617 Proofs involving congruent triangles and vertical angles or the reflexive property  
 geom837 Proofs involving congruent triangles and segment or angle bisectors  
 geom840 Proofs involving congruent triangles that overlap: Basic  
 geom839 Proofs involving congruent triangles, parallel or perpendicular segments, and CPCTC  
 geom843 Proofs involving congruent triangles that overlap: Advanced  
 geom650 Indirect proof (proof by contradiction)  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc031 Solving a triangle with the law of sines: Problem type 1  
 pcalc032 Solving a triangle with the law of sines: Problem type 2  
 pcalc033 Solving a triangle with the law of cosines  
 pcalc060 Magnitude of a vector given in component form  
 pcalc063 Translation of a vector  
 geom858 Scalar multiplication of a vector: Geometric Approach  
 geom857 Vector addition: Geometric approach  
 geom856 Vector addition and scalar multiplication: Component form  
 vector008 Linear combination of vectors: Component form  
 vector002 Finding the magnitude and direction of a vector given its graph  
 vector005 Finding the components of a vector given its graph

### Polygons, Circles, and Similarity

alge191 Midpoint of a line segment in the plane  
 alge132 Distance between two points in the plane: Exact answers  
 geom310 Properties of quadrilaterals  
 geom523 Conditions for quadrilaterals  
 geom532 Classifying parallelograms  
 geom528 Finding measures involving diagonals of parallelograms  
 geom527 Conditions for parallelograms  
 geom833 Finding measures involving diagonals of rectangles  
 geom834 Finding measures involving diagonals of rhombi  
 geom870 Sum of the angle measures of a quadrilateral  
 geom852 The sum of interior angle measures in a convex polygon  
 geom853 Interior and exterior angle measures in a regular polygon  
 geom819 Finding coordinates of vertices of polygons

geom818 Finding the coordinates of a point to make a parallelogram  
 geom863 Congruence in the coordinate plane  
 geom347 Introduction to a circle: Diameter, radius, and chord  
 geom343 Identifying central angles, inscribed angles, arcs, chords, and tangents of a circle  
 geom848 Tangents of a circle: Problem type 1  
 geom849 Tangents of a circle: Problem type 2  
 geom511 Lengths of chords, secants, and tangents  
 geom514 Inscribed angles of a circle  
 geom512 Central angles and inscribed angles of a circle  
 geom513 Angles of intersecting secants and tangents  
 pcalc605 Graphing a circle given its equation in standard form  
 pcalc065 Writing an equation of a circle given its center and a point on the circle  
 pcalc066 Writing an equation of a circle given the endpoints of a diameter  
 geom359 Identifying congruent shapes on a grid  
 geom360 Identifying similar or congruent shapes on a grid  
 geom510 Triangles and parallel lines  
 geom507 Right triangles and geometric mean  
 geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids  
 geom847 Similar solids: Problem type 2  
 geom357 Identifying transformations  
 geom330 Translating a polygon  
 geom331 Using a translated point to find coordinates of other translated points  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom333 Finding the coordinates of three points reflected over an axis  
 geom334 Drawing lines of symmetry  
 geom335 Rotating a figure about the origin  
 geom815 Finding an angle of rotation  
 geom831 Rotational and point symmetries  
 geom336 Dilating a figure

## B.56 Prep. for FL Geometry EOC Assessment

### Arithmetic Readiness

arith048 Order of operations with whole numbers  
 arith051 Order of operations with whole numbers and grouping symbols  
 arith693 Order of operations with whole numbers and exponents: Basic  
 arith212 Equivalent fractions  
 arith067 Simplifying a fraction  
 arith801 Finding the LCD of two fractions  
 arith230 Addition or subtraction of fractions with different denominators  
 arith086 Product of a fraction and a whole number: Problem type 1  
 arith053 Fraction multiplication  
 arith088 The reciprocal of a number  
 arith022 Fraction division  
 arith015 Writing an improper fraction as a mixed number  
 arith110 Decimal place value: Tenths and hundredths  
 arith221 Rounding decimals  
 arith069 Writing a ratio as a percentage without a calculator  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith698 Applying the percent equation  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith031 Finding the original price given the sale price and percent discount  
 arith225 Finding the percentage increase or decrease: Advanced  
 mstat034 Measuring length to the nearest quarter or half inch  
 mstat035 Conversions involving measurements in feet and inches  
 mstat036 Adding measurements in feet and inches  
 unit005 U.S. Customary unit conversion with whole number values

unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 unit009 U.S. Customary area unit conversion with whole number values  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith701 Word problem with addition or subtraction of integers  
 arith116 Signed fraction addition or subtraction: Basic  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers  
 arith822 Signed fraction multiplication: Basic  
 arith118 Order of operations with integers  
 arith702 Exponents and integers: Problem type 1  
 arith703 Exponents and integers: Problem type 2  
 arith704 Exponents and signed fractions  
 arith600 Order of operations with integers and exponents  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 arith071 Absolute value of a number  
 arith104 Operations with absolute value: Problem type 2  
 arith016 Square root of a perfect square  
 arith602 Estimating a square root  
 arith601 Square root of a rational perfect square  
 arith094 Cube root of an integer  
 arith093 Simplifying the square root of a whole number less than 100  
 arith032 Square root addition or subtraction  
 arith039 Square root multiplication: Advanced  
 alge086 Rationalizing the denominator of a radical expression

### Equations and Inequalities

alge001 Identifying numbers as integers or non-integers  
 alge002 Identifying numbers as rational or irrational  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 alge663 Combining like terms: Advanced  
 alge293 Combining like terms in a quadratic expression  
 alge187 Properties of addition  
 alge188 Properties of real numbers  
 alge291 Translating a phrase into a two-step expression  
 alge016 Translating a sentence into a one-step equation  
 alge010 Additive property of equality with integers  
 alge266 Additive property of equality with a negative coefficient  
 alge740 Multiplicative property of equality with integers  
 alge820 Multiplicative property of equality with fractions  
 alge012 Multiplicative property of equality with signed fractions

alge006 Solving a two-step equation with integers  
 alge208 Solving a two-step equation with signed fractions  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge810 Introduction to algebraic symbol manipulation  
 alge743 Algebraic symbol manipulation: Problem type 1  
 alge744 Algebraic symbol manipulation: Problem type 2  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 arith663 Writing ratios for real-world situations  
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge166 Graphing a compound inequality on the number line  
 alge019 Solving a linear inequality: Problem type 1  
 alge020 Solving a linear inequality: Problem type 2  
 alge021 Solving a linear inequality: Problem type 3  
 alge746 Solving a compound linear inequality: Graph solution, basic

### Linear Equations in Two Variables

alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge850 Table for a linear equation  
 alge066 Finding a solution to a linear equation in two variables  
 alge216 Determining whether given points lie on one, both, or neither of 2 lines given equations  
 alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
 alge194 Graphing a line given its equation in slope-intercept form  
 alge195 Graphing a line given its equation in standard form  
 alge196 Graphing a line through a given point with a given slope  
 alge198 Graphing a vertical or horizontal line  
 alge069 Finding the  $y$ -intercept of a line given its equation  
 alge210 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Advanced  
 alge684 Finding slope given the graph of a line on a grid  
 alge685 Finding slope given two points on the line  
 alge631 Finding the slope of a line given its equation  
 alge070 Writing an equation of a line given the  $y$ -intercept and another point  
 alge071 Writing the equation of a line given the slope and a point on the line  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations  
 alge751 Solving a system of linear equations using substitution  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge752 Solving a  $2 \times 2$  system of linear equations that is inconsistent or consistent dependent

### Reasoning, Lines, and Angles



alge807 Finding the next terms of a sequence with whole numbers  
 alge732 Finding patterns in shapes  
 mstat042 Interpreting a Venn diagram of 2 sets  
 mstat043 Interpreting a Venn diagram of 3 sets  
 glogic001 Conditional statements and negations  
 glogic005 The converse, inverse, and contrapositive of a conditional statement  
 glogic008 Conditional statements and deductive reasoning  
 geom349 Naming segments, rays, and lines  
 geom525 Computing distances between decimals on the number line  
 geom526 Midpoint of a number line segment  
 geom521 Segment addition and midpoints  
 geom616 Introduction to proofs: Justifying statements  
 geom614 Proofs involving segment congruence  
 alge132 Distance between two points in the plane: Exact answers  
 alge191 Midpoint of a line segment in the plane  
 geom358 Identifying parallel and perpendicular lines  
 geom835 Introduction to proofs involving parallel lines  
 geom836 Proofs involving parallel lines  
 geom154 Constructing the perpendicular bisector of a line segment  
 geom150 Constructing a pair of perpendicular lines  
 geom157 Constructing a pair of parallel lines  
 geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom304 Identifying corresponding and alternate angles  
 geom305 Identifying supplementary and vertical angles  
 geom530 Solving equations involving vertical angles  
 geom531 Solving equations involving angles and a pair of parallel lines  
 geom850 Angle addition with relationships between angles  
 geom851 Angle addition and angle bisectors  
 geom611 Proofs involving angle congruence  
 geom158 Constructing an angle bisector  
 geom159 Constructing congruent angles

### Triangles

geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom801 Area of a triangle  
 geom001 Finding an angle measure of a triangle given two angles  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom309 Finding an angle measure for a triangle sharing a side with another triangle  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom844 Using triangle inequality to determine if side lengths form a triangle  
 geom845 Using triangle inequality to determine possible lengths of a third side  
 geom854 Relationship between angle measures and side lengths in a triangle  
 geom855 Relationship between angle measures and side lengths in two triangles  
 geom650 Indirect proof (proof by contradiction)  
 geom359 Identifying congruent shapes on a grid  
 geom520 Identifying and naming congruent triangles  
 geom617 Proofs involving congruent triangles and vertical angles or the reflexive property  
 geom837 Proofs involving congruent triangles and segment or angle bisectors  
 geom840 Proofs involving congruent triangles that overlap: Basic  
 geom839 Proofs involving congruent triangles, parallel or perpendicular segments, and CPCTC  
 geom843 Proofs involving congruent triangles that overlap: Advanced  
 geom044 Pythagorean Theorem  
 geom068 Computing an area using the Pythagorean Theorem

geom862 Using the Pythagorean Theorem repeatedly  
 geom506 Special right triangles: Exact answers  
 geom212 Circles inscribed in and circumscribed about regular polygons

### Polygons

geom310 Properties of quadrilaterals  
 geom523 Conditions for quadrilaterals  
 geom532 Classifying parallelograms  
 geom819 Finding coordinates of vertices of polygons  
 geom818 Finding the coordinates of a point to make a parallelogram  
 geom863 Congruence in the coordinate plane  
 geom870 Sum of the angle measures of a quadrilateral  
 geom528 Finding measures involving diagonals of parallelograms  
 geom527 Conditions for parallelograms  
 geom833 Finding measures involving diagonals of rectangles  
 geom834 Finding measures involving diagonals of rhombi  
 geom852 The sum of interior angle measures in a convex polygon  
 geom853 Interior and exterior angle measures in a regular polygon  
 geom300 Perimeter of a square or a rectangle  
 geom339 Perimeter of a polygon  
 geom221 Finding the missing length in a figure  
 geom353 Perimeter of a piecewise rectangular figure  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom078 Sides of polygons having the same perimeter  
 geom019 Area of a square or a rectangle  
 geom350 Distinguishing between the area and perimeter of a rectangle  
 geom351 Areas of rectangles with the same perimeter  
 geom340 Area of a piecewise rectangular figure  
 geom142 Word problem involving the area between two rectangles  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom344 Area involving rectangles and triangles  
 geom213 Area of a regular polygon  
 geom832 Area of quadrilaterals in the coordinate plane  
 alge724 Finding an area in terms of variables

### Similarity, Trigonometry, and Transformations

geom360 Identifying similar or congruent shapes on a grid  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom510 Triangles and parallel lines  
 geom507 Right triangles and geometric mean  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc031 Solving a triangle with the law of sines: Problem type 1  
 pcalc032 Solving a triangle with the law of sines: Problem type 2  
 pcalc033 Solving a triangle with the law of cosines  
 geom357 Identifying transformations  
 geom330 Translating a polygon

geom331 Using a translated point to find coordinates of other translated points  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom333 Finding the coordinates of three points reflected over an axis  
 geom334 Drawing lines of symmetry  
 geom335 Rotating a figure about the origin  
 geom815 Finding an angle of rotation  
 geom831 Rotational and point symmetries  
 geom336 Dilating a figure  
 pcalc060 Magnitude of a vector given in component form  
 pcalc063 Translation of a vector  
 geom858 Scalar multiplication of a vector: Geometric Approach  
 geom857 Vector addition: Geometric approach  
 geom856 Vector addition and scalar multiplication: Component form  
 vector008 Linear combination of vectors: Component form  
 vector002 Finding the magnitude and direction of a vector given its graph  
 vector005 Finding the components of a vector given its graph

### Circles

geom347 Introduction to a circle: Diameter, radius, and chord  
 geom343 Identifying central angles, inscribed angles, arcs, chords, and tangents of a circle  
 geom848 Tangents of a circle: Problem type 1  
 geom849 Tangents of a circle: Problem type 2  
 geom511 Lengths of chords, secants, and tangents  
 geom514 Inscribed angles of a circle  
 geom512 Central angles and inscribed angles of a circle  
 geom513 Angles of intersecting secants and tangents  
 geom016 Circumference of a circle  
 geom218 Finding the radius or the diameter of a circle given its circumference  
 geom301 Perimeter involving rectangles and circles  
 geom838 Circumference ratios  
 geom802 Circumference and area of a circle  
 geom805 Arc length and area of a sector of a circle  
 geom302 Area involving rectangles and circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 pcalc605 Graphing a circle given its equation in standard form  
 pcalc065 Writing an equation of a circle given its center and a point on the circle  
 pcalc066 Writing an equation of a circle given the endpoints of a diameter

### Volumes and Surface Areas

geom830 Counting the cubes in a solid made of cubes  
 geom354 Volume of a rectangular prism made of unit cubes  
 geom311 Volume of a rectangular prism  
 geom505 Volume of a piecewise rectangular prism  
 geom090 Volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom035 Volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom841 Volume of a sphere  
 geom348 Vertices, edges, and faces of a solid  
 geom219 Nets of solids  
 geom861 Nets of solids: Advanced  
 geom816 Side views of a solid made of cubes  
 geom031 Surface area of a cube or a rectangular prism  
 geom345 Surface area of a piecewise rectangular prism made of unit cubes

geom091 Surface area of a triangular prism  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom338 Surface area involving prisms or cylinders  
 geom842 Surface area of a sphere  
 geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids  
 geom847 Similar solids: Problem type 2

### Statistics and Probability

mstat004 Constructing a histogram for numerical data  
 mstat005 Constructing a bar graph for non-numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat007 Interpreting a line graph  
 stat804 Interpreting a circle graph or pie chart  
 stat801 Computations from a circle graph  
 mstat006 Constructing a box-and-whisker plot  
 mstat031 Interpreting a stem-and-leaf plot  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 geom814 Angle measure in a circle graph  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat001 Mean of a data set  
 mstat028 Mean and median of a data set  
 stat803 Finding the value for a new score that will yield a given mean  
 mstat029 How changing a value affects the mean and median  
 mstat053 Choosing the best measure to describe data  
 mstat066 Weighted mean  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 stat790 Permutations, combinations, and the multiplication principle for counting  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat032 Probability of the union of two events

### Removed Topics - Arithmetic, Equations, Inequalities

arith056 Factors  
 arith033 Greatest common factor of 2 numbers  
 arith123 Rounding to hundreds or thousands  
 arith233 Introduction to exponents  
 arith692 Writing expressions using exponents  
 arith683 Power of 10: Positive exponent  
 alge731 Evaluating an algebraic expression: Whole numbers with two operations  
 arith658 Filling in missing operations to make an equation  
 arith034 Prime numbers  
 arith035 Prime factorization

arith064 Solving a word problem on proportions using a unit rate  
arith657 Understanding the distributive property  
arith070 Least common multiple of 2 numbers  
arith092 Using a common denominator to order fractions  
arith618 Addition or subtraction of fractions with the same denominator  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith079 Product of a unit fraction and a whole number  
arith119 Introduction to fraction multiplication  
arith694 Division involving a whole number and a fraction  
arith697 Mixed arithmetic operations with fractions  
arith619 Writing a mixed number as an improper fraction  
arith084 Addition of mixed numbers with the same denominator and carry  
arith216 Subtraction of mixed numbers with the same denominator and borrowing  
arith020 Mixed number multiplication: Problem type 1  
arith068 Mixed number division  
arith220 Decimal place value: Hundreds to ten thousandths  
arith608 Ordering decimals  
arith609 Ordering fractions and decimals  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith222 Converting a fraction to a terminating decimal  
arith089 Converting a fraction to a repeating decimal  
arith013 Decimal addition with 3 numbers  
arith625 Subtraction of aligned decimals  
arith626 Word problem with one decimal operation: Problem type 1  
arith627 Word problem with one decimal operation: Problem type 2  
arith017 Multiplication of a decimal by a whole number  
arith082 Multiplication of a decimal by a power of ten  
arith055 Decimal multiplication: Problem type 1  
arith081 Division of a decimal by a whole number  
arith083 Division of a decimal by a power of ten  
arith226 Converting between percentages and decimals  
arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
arith090 Converting a percentage to a fraction in simplest form  
mstat049 Computing a percentage from a table of values  
arith232 Finding simple interest without a calculator  
arith699 Writing a signed number for a real-world situation  
mstat038 Reading the temperature from a thermometer  
alge286 Plotting integers on a number line  
arith691 Ordering integers  
arith687 Fractional position on a number line  
arith605 Plotting rational numbers on a number line  
alge009 Additive property of equality with whole numbers  
alge800 Additive property of equality with decimals  
alge008 Multiplicative property of equality with whole numbers  
alge825 Multiplicative property of equality with decimals  
alge803 Using two steps to solve an equation with whole numbers  
alge824 Solving a two-step equation with signed decimals  
alge200 Solving an equation to find the value of an expression  
alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
alge742 Solving equations with zero, one, or infinitely many solutions  
alge733 Writing a one-step expression for a real-world situation  
alge602 Writing a one-step variable expression for a real-world situation  
alge730 Writing a multi-step equation for a real-world situation  
alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
alge014 Solving a word problem with two unknowns using a linear equation  
alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$

alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge794 Solving a value mixture problem using a linear equation  
 alge795 Solving a percent mixture problem using a linear equation  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 alge218 Solving a word problem involving rates and time conversion  
 alge796 Solving a distance, rate, time problem using a linear equation  
 alge015 Translating a sentence by using an inequality symbol  
 alge186 Translating a sentence into a compound inequality  
 alge207 Solving a linear inequality: Problem type 4  
 alge745 Solving a linear inequality: Problem type 5  
 alge748 Writing an inequality for a real-world situation  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
 alge270 Solving an absolute value equation of the form  $a - x = b$  or  $-x + a = b$   
 alge103 Solving an absolute value equation of the form  $-ax + b = c$   
 alge170 Solving an absolute value inequality: Basic  
 mstat025 Finding if a question can be answered by the data  
 stat802 Rejecting unreasonable claims based on average statistics  
 stat805 Making a reasonable inference based on proportion statistics  
 stat021 Population standard deviation

### Removed Topics - Advanced Algebra

set004 Set builder and interval notation  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun016 Domain and range from ordered pairs  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 pcalc768 Finding the average rate of change of a function  
 fun019 Sum, difference, and product of two functions  
 fun022 Composition of two functions: Basic  
 fun002 Graphing integer functions  
 pcalc761 Finding inputs and outputs of a function from its graph  
 pcalc750 Finding intercepts of a nonlinear function given its graph  
 pcalc751 Finding where a function is increasing, decreasing, or constant given the graph: Interval notation  
 pcalc752 Finding local maxima and minima of a function given the graph  
 fun024 Domain and range from the graph of a continuous function  
 pcalc114 Even and odd functions: Problem type 1  
 alge185 Writing an equation for a function after a vertical translation  
 fun020 Writing an equation for a function after a vertical and horizontal translation  
 pcalc769 Translating the graph of a function: One step  
 pcalc770 Translating the graph of a function: Two steps  
 pcalc771 Transforming the graph of a function by reflecting over an axis  
 pcalc772 Transforming the graph of a function by shrinking or stretching  
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge712 Graphing an exponential function and its asymptote:  $f(x) = a(b)^x$   
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge753 Solving a  $3 \times 3$  system of linear equations: Problem type 1  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge184 Solving a value mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations



alge172 Solving a tax rate or interest rate problem using a system of linear equations  
alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
alge018 Graphing a linear inequality in the plane: Standard form  
alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
alge720 Graphing a linear inequality in the plane: Slope-intercept form  
alge079 Graphing a system of two linear inequalities: Basic  
arith036 Scientific notation with positive exponent  
arith037 Scientific notation with negative exponent  
scinot002 Multiplying and dividing numbers written in scientific notation  
alge790 Evaluating expressions with exponents of zero  
arith684 Power of 10: Negative exponent  
arith042 Evaluating an expression with a negative exponent: Positive fraction base  
arith043 Evaluating an expression with a negative exponent: Negative integer base  
alge791 Rewriting an algebraic expression without a negative exponent  
alge821 Understanding the product rule of exponents  
alge024 Introduction to the product rule of exponents  
alge030 Product rule with positive exponents: Multivariate  
alge028 Product rule with negative exponents  
alge827 Introduction to the quotient rule of exponents  
alge026 Quotient of expressions involving exponents  
alge755 Quotient rule with negative exponents: Problem type 1  
alge826 Understanding the power rules of exponents  
alge754 Introduction to the power rules of exponents  
alge027 Power rules with positive exponents  
alge025 Power of a power rule with negative exponents  
alge799 Power rules with negative exponents  
alge756 Power and product rules with positive exponents  
arith029 Ordering numbers with positive exponents  
alge758 Degree and leading coefficient of a univariate polynomial  
alge798 Simplifying a sum or difference of two univariate polynomials  
alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
alge835 Multiplying a multivariate polynomial by a monomial  
alge033 Multiplying binomials with leading coefficients of 1  
alge764 Multiplying conjugate binomials: Univariate  
alge765 Multiplying binomials in two variables  
alge032 Squaring a binomial: Univariate  
alge180 Multiplication involving binomials and trinomials in two variables  
alge759 Dividing a polynomial by a monomial: Univariate  
alge760 Dividing a polynomial by a monomial: Multivariate  
alge761 Polynomial long division: Problem type 1  
alge762 Polynomial long division: Problem type 2  
alge736 Introduction to the GCF of two monomials  
alge037 Greatest common factor of two multivariate monomials  
alge738 Factoring out a monomial from a polynomial: Univariate  
alge739 Factoring out a monomial from a polynomial: Multivariate  
alge039 Factoring a quadratic with leading coefficient 1  
alge043 Factoring a perfect square trinomial  
alge040 Factoring a quadratic with leading coefficient greater than 1  
alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
alge041 Factoring a product of a quadratic trinomial and a monomial  
alge624 Factoring a difference of squares  
alge038 Factoring a polynomial by grouping: Problem type 1  
alge181 Factoring a polynomial by grouping: Problem type 2  
alge681 Solving an equation written in factored form  
alge045 Finding the roots of a quadratic equation with leading coefficient 1  
alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
alge211 Solving a quadratic equation needing simplification  
alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
alge227 Solving a quadratic equation using the square root property: Exact answers, advanced  
alge094 Completing the square  
alge780 Solving a quadratic equation by completing the square: Exact answers  
alge095 Applying the quadratic formula: Exact answers

alge214 Discriminant of a quadratic equation  
 alge703 Solving a word problem using a quadratic equation with rational roots  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 pcalc037 Scalar multiplication of a matrix  
 pcalc038 Addition or subtraction of matrices  
 pcalc740 Linear combination of matrices  
 alge277 Finding the x-intercept(s) and the vertex of a parabola  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge252 Graphing a parabola of the form  $y = ax^2$   
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 alge702 Classifying the graph of a function  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge715 Domain of a rational function: Excluded values  
 alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge057 Adding rational expressions with different denominators:  $ax, bx$   
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge622 Adding rational expressions with different denominators:  $x+a, x+b$   
 alge661 Adding rational expressions involving different quadratic denominators  
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 alge058 Complex fraction involving multivariate monomials  
 alge767 Complex fraction: GCF and quadratic factoring  
 alge768 Complex fraction made of sums involving rational expressions  
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge769 Solving a rational equation that simplifies to linear: Denominators  $a, x$ , or  $ax$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 pcalc789 Finding the asymptotes of a rational function: Basic  
 pcalc108 Graphing a rational function: Constant or linear over linear  
 arith612 Word problem involving multiple rates  
 alge770 Solving a work problem using a rational equation  
 alge220 Word problem on inverse proportions  
 pcalc681 Writing an equation that models variation  
 alge175 Word problem on direct variation  
 alge176 Word problem on inverse variation  
 alge772 Word problem on combined variation  
 alge213 Domain of a square root function  
 pcalc781 Graphing a square root function  
 alge264 Square root of a perfect square monomial  
 alge080 Simplifying a radical expression with an even exponent  
 alge275 Simplifying a radical expression with two variables  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge088 Rationalizing the denominator of a radical expression using conjugates  
 alge812 Converting between radical form and exponent form  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge249 Rational exponents: Powers of powers with negative exponents  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge091 Solving a radical equation that simplifies to a quadratic equation: One radical

alge182 Solving a radical equation that simplifies to a quadratic equation: Two radicals  
 pcalc080 Finding the first terms of a sequence using an explicit rule with multiple occurrences of  $n$   
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest

## B.57 Prep. for IN Algebra 1 ECA

### Arithmetic Readiness

arith078 Rounding to tens or hundreds  
 arith123 Rounding to hundreds or thousands  
 arith101 Estimating a sum of whole numbers  
 arith233 Introduction to exponents  
 arith692 Writing expressions using exponents  
 arith683 Power of 10: Positive exponent  
 arith048 Order of operations with whole numbers  
 arith051 Order of operations with whole numbers and grouping symbols  
 arith693 Order of operations with whole numbers and exponents: Basic  
 arith713 Order of operations with whole numbers and exponents: Advanced  
 alge731 Evaluating an algebraic expression: Whole numbers with two operations  
 alge832 Evaluating an algebraic expression: Whole number operations and exponents  
 arith056 Factors  
 arith034 Prime numbers  
 arith035 Prime factorization  
 arith033 Greatest common factor of 2 numbers  
 arith070 Least common multiple of 2 numbers  
 arith240 Word problem with common multiples  
 arith212 Equivalent fractions  
 arith067 Simplifying a fraction  
 arith092 Using a common denominator to order fractions  
 arith618 Addition or subtraction of fractions with the same denominator  
 arith801 Finding the LCD of two fractions  
 arith664 Introduction to addition or subtraction of fractions with different denominators  
 arith230 Addition or subtraction of fractions with different denominators  
 arith100 Fractional part of a circle  
 arith079 Product of a unit fraction and a whole number  
 arith086 Product of a fraction and a whole number: Problem type 1  
 arith119 Introduction to fraction multiplication  
 arith053 Fraction multiplication  
 arith088 The reciprocal of a number  
 arith694 Division involving a whole number and a fraction  
 arith022 Fraction division  
 arith697 Mixed arithmetic operations with fractions  
 arith095 Multi-step word problem involving fractions and multiplication  
 arith015 Writing an improper fraction as a mixed number  
 arith619 Writing a mixed number as an improper fraction  
 arith084 Addition of mixed numbers with the same denominator and carry  
 arith216 Subtraction of mixed numbers with the same denominator and borrowing  
 arith085 Addition or subtraction of mixed numbers with different denominators  
 arith020 Mixed number multiplication: Problem type 1  
 arith068 Mixed number division  
 arith110 Decimal place value: Tenths and hundredths  
 arith221 Rounding decimals  
 arith129 Introduction to ordering decimals  
 arith608 Ordering decimals

arith609 Ordering fractions and decimals  
 arith222 Converting a fraction to a terminating decimal  
 arith089 Converting a fraction to a repeating decimal  
 arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
 arith624 Addition of aligned decimals  
 arith625 Subtraction of aligned decimals  
 arith131 Estimating a decimal sum or difference  
 arith017 Multiplication of a decimal by a whole number  
 arith082 Multiplication of a decimal by a power of ten  
 arith055 Decimal multiplication: Problem type 1  
 arith081 Division of a decimal by a whole number  
 arith083 Division of a decimal by a power of ten  
 arith019 Division of a decimal by a 2-digit decimal  
 arith626 Word problem with one decimal operation: Problem type 1  
 arith627 Word problem with one decimal operation: Problem type 2  
 arith628 Word problem with multiple decimal operations: Problem type 1  
 geom339 Perimeter of a polygon  
 geom300 Perimeter of a square or a rectangle  
 geom019 Area of a square or a rectangle  
 geom221 Finding the missing length in a figure  
 geom340 Area of a piecewise rectangular figure  
 geom142 Word problem involving the area between two rectangles  
 geom801 Area of a triangle  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom016 Circumference of a circle  
 geom301 Perimeter involving rectangles and circles  
 geom838 Circumference ratios  
 geom802 Circumference and area of a circle  
 geom302 Area involving rectangles and circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom031 Surface area of a cube or a rectangular prism  
 geom091 Surface area of a triangular prism  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom842 Surface area of a sphere  
 geom311 Volume of a rectangular prism  
 geom090 Volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom035 Volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom841 Volume of a sphere  
 geom039 Finding supplementary and complementary angles

### Real Numbers

alge001 Identifying numbers as integers or non-integers  
 alge002 Identifying numbers as rational or irrational  
 mstat038 Reading the temperature from a thermometer  
 arith699 Writing a signed number for a real-world situation  
 alge286 Plotting integers on a number line  
 arith687 Fractional position on a number line  
 arith605 Plotting rational numbers on a number line  
 arith691 Ordering integers  
 arith712 Ordering real numbers  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2

arith690 Integer subtraction: Problem type 3  
 arith701 Word problem with addition or subtraction of integers  
 arith116 Signed fraction addition or subtraction: Basic  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers  
 arith822 Signed fraction multiplication: Basic  
 arith105 Signed fraction multiplication: Advanced  
 alge984 Classifying sums and products as rational or irrational  
 arith702 Exponents and integers: Problem type 1  
 arith703 Exponents and integers: Problem type 2  
 arith704 Exponents and signed fractions  
 arith118 Order of operations with integers  
 arith600 Order of operations with integers and exponents  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 arith071 Absolute value of a number  
 arith104 Operations with absolute value: Problem type 2  
 geom525 Computing distances between decimals on the number line  
 alge187 Properties of addition  
 alge188 Properties of real numbers  
 arith657 Understanding the distributive property  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 alge663 Combining like terms: Advanced  
 alge293 Combining like terms in a quadratic expression

### Linear Equations

alge009 Additive property of equality with whole numbers  
 alge801 Additive property of equality with fractions and mixed numbers  
 alge800 Additive property of equality with decimals  
 alge010 Additive property of equality with integers  
 alge266 Additive property of equality with a negative coefficient  
 alge836 Additive property of equality with signed fractions  
 alge008 Multiplicative property of equality with whole numbers  
 alge820 Multiplicative property of equality with fractions  
 alge825 Multiplicative property of equality with decimals  
 alge797 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge803 Using two steps to solve an equation with whole numbers  
 alge006 Solving a two-step equation with integers  
 alge837 Solving a multi-step equation given in fractional form  
 alge208 Solving a two-step equation with signed fractions  
 alge824 Solving a two-step equation with signed decimals  
 alge200 Solving an equation to find the value of an expression  
 alge920 Introduction to solving an equation with parentheses  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions

alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge986 Identifying properties used to solve a linear equation  
 alge810 Introduction to algebraic symbol manipulation  
 alge743 Algebraic symbol manipulation: Problem type 1  
 alge744 Algebraic symbol manipulation: Problem type 2  
 alge733 Writing a one-step expression for a real-world situation  
 alge831 Translating a phrase into a one-step expression  
 alge291 Translating a phrase into a two-step expression  
 alge016 Translating a sentence into a one-step equation  
 alge841 Translating a sentence into a multi-step equation  
 alge730 Writing a multi-step equation for a real-world situation  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge792 Solving a word problem with three unknowns using a linear equation  
 alge842 Solving a word problem involving consecutive integers  
 alge794 Solving a value mixture problem using a linear equation  
 alge795 Solving a percent mixture problem using a linear equation  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 alge218 Solving a word problem involving rates and time conversion  
 alge796 Solving a distance, rate, time problem using a linear equation  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom530 Solving equations involving vertical angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 stat803 Finding the value for a new score that will yield a given mean  
 arith663 Writing ratios for real-world situations  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 alge840 Solving a proportion of the form  $(x+a) \div b = c \div d$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 arith064 Solving a word problem on proportions using a unit rate  
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 arith226 Converting between percentages and decimals  
 arith090 Converting a percentage to a fraction in simplest form  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith069 Writing a ratio as a percentage without a calculator  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith698 Applying the percent equation  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith031 Finding the original price given the sale price and percent discount  
 arith225 Finding the percentage increase or decrease: Advanced  
 arith232 Finding simple interest without a calculator  
 unit005 U.S. Customary unit conversion with whole number values  
 unit001 Metric distance conversion with whole number values  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 unit052 Finding the absolute error and percent error of a measurement



alge864 Solving an absolute value equation: Problem type 1  
 alge865 Solving an absolute value equation: Problem type 2  
 alge866 Solving an absolute value equation: Problem type 3  
 alge867 Solving an absolute value equation: Problem type 4

### Linear Inequalities

alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge846 Translating a sentence into a multi-step inequality  
 alge748 Writing an inequality for a real-world situation  
 alge729 Writing a multi-step inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge860 Solving inequalities with no solution or all real numbers as solutions  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge861 Solving a compound linear inequality: Graph solution, advanced  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
 alge943 Writing an absolute value inequality given a graph on the number line  
 alge868 Solving an absolute value inequality: Problem type 1  
 alge869 Solving an absolute value inequality: Problem type 2  
 alge870 Solving an absolute value inequality: Problem type 3  
 alge871 Solving an absolute value inequality: Problem type 4  
 alge872 Solving an absolute value inequality: Problem type 5

### Functions and Lines

set001 Set builder notation  
 set002 Union and intersection of finite sets  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 fun016 Domain and range from ordered pairs  
 alge896 Graphing an integer function and finding its range for a given domain  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 pcalc761 Finding inputs and outputs of a function from its graph  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 pcalc752 Finding local maxima and minima of a function given the graph  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules

alge716 Introduction to the composition of two functions  
 fun012 Inverse functions: Linear, discrete  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge873 Identifying solutions to a linear equation in two variables  
 alge850 Table for a linear equation  
 alge066 Finding a solution to a linear equation in two variables  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
 alge881 Graphing a line by first finding its  $x$ - and  $y$ -intercepts  
 alge196 Graphing a line through a given point with a given slope  
 alge882 Graphing a line by first finding its slope and  $y$ -intercept  
 alge883 Graphing a line given its equation in point-slope form  
 alge198 Graphing a vertical or horizontal line  
 alge876 Identifying linear equations: Advanced  
 alge874 Identifying linear functions given ordered pairs  
 alge891 Rewriting a linear equation in the form  $Ax + By = C$   
 alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
 alge924 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Basic  
 alge210 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Advanced  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines  
 alge888 Finding the coordinate that yields a given slope  
 alge889 Finding the slope and  $y$ -intercept of a line given its equation in the form  $y = mx + b$   
 alge890 Finding the slope and  $y$ -intercept of a line given its equation in the form  $Ax + By = C$   
 alge892 Writing an equation and graphing a line given its slope and  $y$ -intercept  
 alge070 Writing an equation of a line given the  $y$ -intercept and another point  
 alge893 Writing an equation in slope-intercept form given the slope and a point  
 alge894 Writing an equation in point-slope form given the slope and a point  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 alge897 Writing and evaluating a function that models a real-world situation: Advanced  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 alge990 Domain and range of a linear function that models a real-world situation  
 alge989 Interpreting the parameters of a linear function that models a real-world situation  
 alge992 Combining functions to write a new function that models a real-world situation  
 alge987 Comparing properties of linear functions given in different forms  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 alge895 Identifying parallel and perpendicular lines from equations  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 alge991 Solving a linear equation by graphing  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge828 Interpreting direct variation from a graph  
 alge982 Identifying direct variation equations  
 alge938 Identifying direct variation from ordered pairs and writing equations  
 alge904 Writing a direct variation equation  
 alge175 Word problem on direct variation  
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge908 Finding the first terms of a sequence using a recursive rule

alge910 Writing a recursive rule for an arithmetic sequence  
 mstat023 Scatter plots and correlation  
 mstat030 Sketching the line of best fit  
 mstat068 Predictions from the line of best fit  
 mstat067 Approximating the equation of a line of best fit and making predictions  
 mstat069 Computing residuals  
 mstat070 Interpreting residual plots  
 mstat071 Linear relationship and the correlation coefficient  
 mstat074 Identifying correlation and causation  
 alge898 Translating the graph of an absolute value function: One step  
 alge899 Translating the graph of an absolute value function: Two steps  
 alge913 Graphing an absolute value equation of the form  $y = A - |x - h| + k$   
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge901 How the leading coefficient affects the graph of an absolute value function  
 alge954 Graphing a parabola of the form  $y = ax^2 + bx + c$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge262 Graphing a cubic function of the form  $y = ax^3 + bx^2 + cx + d$   
 fun030 Evaluating a piecewise-defined function  
 fun031 Graphing a piecewise-defined function: Problem type 1

## Systems

alge914 Identifying solutions to a system of linear equations  
 alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations  
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge916 Solving a system of linear equations with fractional coefficients  
 alge917 Solving a system of linear equations with decimal coefficients  
 alge752 Solving a 2x2 system of linear equations that is inconsistent or consistent dependent  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 alge988 Identifying the operations used to create equivalent systems of equations  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced  
 alge922 Graphing a system of three linear inequalities  
 pcalc093 Solving a word problem using a system of linear inequalities: Problem type 1  
 pcalc037 Scalar multiplication of a matrix  
 pcalc038 Addition or subtraction of matrices  
 pcalc740 Linear combination of matrices  
 pcalc712 Gauss-Jordan elimination with a 2x2 matrix

## Exponents

alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith029 Ordering numbers with positive exponents  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge030 Product rule with positive exponents: Multivariate  
 alge961 Introduction to the product rule with negative exponents  
 alge028 Product rule with negative exponents  
 alge827 Introduction to the quotient rule of exponents  
 alge026 Quotient of expressions involving exponents  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge926 Quotient rule with negative exponents: Problem type 2  
 alge826 Understanding the power rules of exponents  
 alge754 Introduction to the power rules of exponents  
 alge027 Power rules with positive exponents  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge756 Power and product rules with positive exponents  
 alge927 Power and quotient rules with positive exponents  
 alge928 Power and quotient rules with negative exponents: Problem type 1  
 alge929 Power and quotient rules with negative exponents: Problem type 2  
 alge757 Power, product, and quotient rules with negative exponents  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent  
 scinot002 Multiplying and dividing numbers written in scientific notation  
 alge812 Converting between radical form and exponent form  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge249 Rational exponents: Powers of powers with negative exponents  
 alge971 Table for an exponential function  
 alge830 Evaluating an exponential function that models a real-world situation  
 alge966 Finding the initial amount and rate of change given an exponential function  
 alge968 Writing an equation that models exponential growth or decay  
 alge967 Writing an exponential function rule given a table of ordered pairs  
 alge301 Solving an exponential equation by finding common bases: Linear exponents  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest  
 alge969 Graphing an exponential function:  $f(x) = ax$   
 alge970 Graphing an exponential function:  $f(x) = a(b)x$   
 alge993 Comparing linear, polynomial, and exponential functions  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge911 Writing recursive rules for arithmetic and geometric sequences

### Polynomials and Factoring

alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials

alge932 Simplifying a sum or difference of multivariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge081 Multiplying conjugate binomials: Multivariate  
 alge032 Squaring a binomial: Univariate  
 alge068 Squaring a binomial: Multivariate  
 alge973 Multiplying binomials with negative coefficients  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge759 Dividing a polynomial by a monomial: Univariate  
 alge760 Dividing a polynomial by a monomial: Multivariate  
 alge761 Polynomial long division: Problem type 1  
 alge762 Polynomial long division: Problem type 2  
 alge763 Polynomial long division: Problem type 3  
 alge985 Closure properties of integers and polynomials  
 alge736 Introduction to the GCF of two monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge930 Greatest common factor of three univariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge949 Factoring out a binomial from a polynomial: GCF factoring, basic  
 alge923 Factoring a univariate polynomial by grouping: Problem type 1  
 alge950 Factoring a univariate polynomial by grouping: Problem type 2  
 alge951 Factoring a multivariate polynomial by grouping: Problem type 1  
 alge952 Factoring a multivariate polynomial by grouping: Problem type 2  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge942 Factoring a quadratic in two variables with leading coefficient 1  
 alge936 Factoring out a constant before factoring a quadratic  
 alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1  
 alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
 alge941 Factoring a quadratic with leading coefficient greater than 1: Problem type 3  
 alge978 Factoring a quadratic by the ac-method  
 alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
 alge937 Factoring a quadratic with a negative leading coefficient  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge945 Factoring a perfect square trinomial with leading coefficient greater than 1  
 alge946 Factoring a perfect square trinomial in two variables  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge839 Factoring a difference of squares in two variables  
 alge948 Factoring a polynomial involving a GCF and a difference of squares: Univariate  
 alge833 Factoring a polynomial involving a GCF and a difference of squares: Multivariate  
 alge042 Factoring with repeated use of the difference of squares formula  
 alge044 Factoring a sum or difference of two cubes  
 alge681 Solving an equation written in factored form  
 alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge703 Solving a word problem using a quadratic equation with rational roots

### Quadratic Functions and Equations

alge974 Finding the vertex, x-intercepts, and axis of symmetry from the graph of a parabola  
 alge277 Finding the x-intercept(s) and the vertex of a parabola

pcalc774 Rewriting a quadratic function to find the vertex of its graph  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge975 Domain and range from the graph of a parabola  
 alge976 Range of a quadratic function  
 alge996 Comparing properties of quadratic functions given in different forms  
 alge953 Translating the graph of a parabola: One step  
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients  
 alge702 Classifying the graph of a function  
 alge965 Identifying linear, quadratic, and exponential functions given ordered pairs  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge185 Writing an equation for a function after a vertical translation  
 fun020 Writing an equation for a function after a vertical and horizontal translation  
 pcalc748 Graphing a quadratic inequality: Problem type 1  
 pcalc749 Graphing a quadratic inequality: Problem type 2  
 alge957 Solving a quadratic equation by graphing  
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 alge958 Solving a quadratic equation using the square root property: Decimal answers, basic  
 alge959 Solving a quadratic equation using the square root property: Decimal answers, advanced  
 alge094 Completing the square  
 alge960 Solving a quadratic equation by completing the square: Decimal answers  
 alge963 Applying the quadratic formula: Decimal answers  
 alge095 Applying the quadratic formula: Exact answers  
 alge214 Discriminant of a quadratic equation  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge994 Graphically solving a system of linear and quadratic equations  
 alge995 Solving a system of linear and quadratic equations  
 alge997 Finding the average rate of change of a function given its equation  
 alge998 Finding the average rate of change of a function given its graph

## Radicals

alge213 Domain of a square root function  
 pcalc781 Graphing a square root function  
 arith016 Square root of a perfect square  
 arith602 Estimating a square root  
 arith601 Square root of a rational perfect square  
 arith094 Cube root of an integer  
 arith093 Simplifying the square root of a whole number less than 100  
 alge264 Square root of a perfect square monomial  
 alge080 Simplifying a radical expression with an even exponent  
 alge275 Simplifying a radical expression with two variables  
 alge273 Simplifying a higher root of a whole number  
 alge811 Simplifying a higher radical expression: Multivariate  
 arith032 Square root addition or subtraction  
 alge084 Simplifying a sum or difference of radical expressions: Multivariate  
 arith039 Square root multiplication: Advanced  
 alge640 Simplifying a product of radical expressions: Multivariate  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge086 Rationalizing the denominator of a radical expression  
 alge088 Rationalizing the denominator of a radical expression using conjugates  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge091 Solving a radical equation that simplifies to a quadratic equation: One radical  
 geom044 Pythagorean Theorem  
 alge132 Distance between two points in the plane: Exact answers  
 alge191 Midpoint of a line segment in the plane



pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc642 Solving a right triangle

### Rational Expressions

alge049 Restriction on a variable in a denominator: Linear  
 alge715 Domain of a rational function: Excluded values  
 alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2  
 alge034 Simplifying a ratio of multivariate polynomials  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge057 Adding rational expressions with different denominators:  $ax$ ,  $bx$   
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge622 Adding rational expressions with different denominators:  $x+a$ ,  $x+b$   
 alge661 Adding rational expressions involving different quadratic denominators  
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 alge058 Complex fraction involving multivariate monomials  
 alge767 Complex fraction: GCF and quadratic factoring  
 alge768 Complex fraction made of sums involving rational expressions  
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced  
 arith612 Word problem involving multiple rates  
 alge770 Solving a work problem using a rational equation  
 alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
 alge903 Identifying direct and inverse variation equations  
 alge905 Writing an inverse variation equation  
 alge176 Word problem on inverse variation  
 alge220 Word problem on inverse proportions  
 pcalc789 Finding the asymptotes of a rational function: Basic  
 pcalc108 Graphing a rational function: Constant or linear over linear

### Data Analysis and Probability

mstat037 Constructing a line plot  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat007 Interpreting a line graph  
 stat804 Interpreting a circle graph or pie chart  
 stat801 Computations from a circle graph

geom814 Angle measure in a circle graph  
 mstat031 Interpreting a stem-and-leaf plot  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat001 Mean of a data set  
 mstat028 Mean and median of a data set  
 mstat066 Weighted mean  
 mstat029 How changing a value affects the mean and median  
 mstat053 Choosing the best measure to describe data  
 stat802 Rejecting unreasonable claims based on average statistics  
 mstat025 Finding if a question can be answered by the data  
 mstat049 Computing a percentage from a table of values  
 stat020 Calculating relative frequencies in a contingency table  
 stat805 Making a reasonable inference based on proportion statistics  
 stat009 Percentiles  
 mstat072 Five-number summary and interquartile range  
 stat021 Population standard deviation  
 mstat042 Interpreting a Venn diagram of 2 sets  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 stat790 Permutations, combinations, and the multiplication principle for counting  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat032 Probability of the union of two events

## B.58 Prep. for LA Algebra 1 EOC Assessment

### Arithmetic Readiness

arith078 Rounding to tens or hundreds  
 arith123 Rounding to hundreds or thousands  
 arith101 Estimating a sum of whole numbers  
 arith233 Introduction to exponents  
 arith692 Writing expressions using exponents  
 arith683 Power of 10: Positive exponent  
 arith048 Order of operations with whole numbers  
 arith051 Order of operations with whole numbers and grouping symbols  
 arith693 Order of operations with whole numbers and exponents: Basic  
 arith713 Order of operations with whole numbers and exponents: Advanced  
 alge731 Evaluating an algebraic expression: Whole numbers with two operations  
 alge832 Evaluating an algebraic expression: Whole number operations and exponents

arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith070 Least common multiple of 2 numbers  
arith240 Word problem with common multiples  
arith212 Equivalent fractions  
arith067 Simplifying a fraction  
arith092 Using a common denominator to order fractions  
arith618 Addition or subtraction of fractions with the same denominator  
arith801 Finding the LCD of two fractions  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
arith100 Fractional part of a circle  
arith079 Product of a unit fraction and a whole number  
arith086 Product of a fraction and a whole number: Problem type 1  
arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith697 Mixed arithmetic operations with fractions  
arith095 Multi-step word problem involving fractions and multiplication  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith084 Addition of mixed numbers with the same denominator and carry  
arith216 Subtraction of mixed numbers with the same denominator and borrowing  
arith085 Addition or subtraction of mixed numbers with different denominators  
arith020 Mixed number multiplication: Problem type 1  
arith068 Mixed number division  
arith110 Decimal place value: Tenths and hundredths  
arith221 Rounding decimals  
arith129 Introduction to ordering decimals  
arith608 Ordering decimals  
arith609 Ordering fractions and decimals  
arith222 Converting a fraction to a terminating decimal  
arith089 Converting a fraction to a repeating decimal  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith624 Addition of aligned decimals  
arith625 Subtraction of aligned decimals  
arith131 Estimating a decimal sum or difference  
arith017 Multiplication of a decimal by a whole number  
arith082 Multiplication of a decimal by a power of ten  
arith055 Decimal multiplication: Problem type 1  
arith081 Division of a decimal by a whole number  
arith083 Division of a decimal by a power of ten  
arith019 Division of a decimal by a 2-digit decimal  
arith626 Word problem with one decimal operation: Problem type 1  
arith627 Word problem with one decimal operation: Problem type 2  
arith628 Word problem with multiple decimal operations: Problem type 1  
geom339 Perimeter of a polygon  
geom300 Perimeter of a square or a rectangle  
geom019 Area of a square or a rectangle  
geom221 Finding the missing length in a figure  
geom340 Area of a piecewise rectangular figure  
geom142 Word problem involving the area between two rectangles  
geom801 Area of a triangle  
geom022 Area of a parallelogram  
geom023 Area of a trapezoid  
geom016 Circumference of a circle  
geom301 Perimeter involving rectangles and circles  
geom838 Circumference ratios

geom802 Circumference and area of a circle  
 geom302 Area involving rectangles and circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom031 Surface area of a cube or a rectangular prism  
 geom091 Surface area of a triangular prism  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom842 Surface area of a sphere  
 geom311 Volume of a rectangular prism  
 geom090 Volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom035 Volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom841 Volume of a sphere  
 geom039 Finding supplementary and complementary angles

### Real Numbers

alge001 Identifying numbers as integers or non-integers  
 alge002 Identifying numbers as rational or irrational  
 mstat038 Reading the temperature from a thermometer  
 arith699 Writing a signed number for a real-world situation  
 alge286 Plotting integers on a number line  
 arith687 Fractional position on a number line  
 arith605 Plotting rational numbers on a number line  
 arith691 Ordering integers  
 arith712 Ordering real numbers  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith701 Word problem with addition or subtraction of integers  
 arith116 Signed fraction addition or subtraction: Basic  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers  
 arith822 Signed fraction multiplication: Basic  
 arith105 Signed fraction multiplication: Advanced  
 alge984 Classifying sums and products as rational or irrational  
 arith702 Exponents and integers: Problem type 1  
 arith703 Exponents and integers: Problem type 2  
 arith704 Exponents and signed fractions  
 arith118 Order of operations with integers  
 arith600 Order of operations with integers and exponents  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 arith071 Absolute value of a number  
 arith104 Operations with absolute value: Problem type 2  
 geom525 Computing distances between decimals on the number line  
 alge187 Properties of addition  
 alge188 Properties of real numbers  
 arith657 Understanding the distributive property  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients

alge663 Combining like terms: Advanced  
 alge293 Combining like terms in a quadratic expression

### Linear Equations

alge009 Additive property of equality with whole numbers  
 alge801 Additive property of equality with fractions and mixed numbers  
 alge800 Additive property of equality with decimals  
 alge010 Additive property of equality with integers  
 alge266 Additive property of equality with a negative coefficient  
 alge836 Additive property of equality with signed fractions  
 alge008 Multiplicative property of equality with whole numbers  
 alge820 Multiplicative property of equality with fractions  
 alge825 Multiplicative property of equality with decimals  
 alge797 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge803 Using two steps to solve an equation with whole numbers  
 alge006 Solving a two-step equation with integers  
 alge837 Solving a multi-step equation given in fractional form  
 alge208 Solving a two-step equation with signed fractions  
 alge824 Solving a two-step equation with signed decimals  
 alge200 Solving an equation to find the value of an expression  
 alge920 Introduction to solving an equation with parentheses  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge986 Identifying properties used to solve a linear equation  
 alge810 Introduction to algebraic symbol manipulation  
 alge743 Algebraic symbol manipulation: Problem type 1  
 alge744 Algebraic symbol manipulation: Problem type 2  
 alge733 Writing a one-step expression for a real-world situation  
 alge831 Translating a phrase into a one-step expression  
 alge291 Translating a phrase into a two-step expression  
 alge016 Translating a sentence into a one-step equation  
 alge841 Translating a sentence into a multi-step equation  
 alge730 Writing a multi-step equation for a real-world situation  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge792 Solving a word problem with three unknowns using a linear equation  
 alge842 Solving a word problem involving consecutive integers  
 alge794 Solving a value mixture problem using a linear equation  
 alge795 Solving a percent mixture problem using a linear equation  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 alge218 Solving a word problem involving rates and time conversion

alge796 Solving a distance, rate, time problem using a linear equation  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom530 Solving equations involving vertical angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 stat803 Finding the value for a new score that will yield a given mean  
 arith663 Writing ratios for real-world situations  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 alge840 Solving a proportion of the form  $(x+a) \div b = c \div d$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 arith064 Solving a word problem on proportions using a unit rate  
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 arith226 Converting between percentages and decimals  
 arith090 Converting a percentage to a fraction in simplest form  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith069 Writing a ratio as a percentage without a calculator  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith698 Applying the percent equation  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith031 Finding the original price given the sale price and percent discount  
 arith225 Finding the percentage increase or decrease: Advanced  
 arith232 Finding simple interest without a calculator  
 unit005 U.S. Customary unit conversion with whole number values  
 unit001 Metric distance conversion with whole number values  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 unit052 Finding the absolute error and percent error of a measurement  
 alge864 Solving an absolute value equation: Problem type 1  
 alge865 Solving an absolute value equation: Problem type 2  
 alge866 Solving an absolute value equation: Problem type 3  
 alge867 Solving an absolute value equation: Problem type 4

### Linear Inequalities

alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge846 Translating a sentence into a multi-step inequality  
 alge748 Writing an inequality for a real-world situation  
 alge729 Writing a multi-step inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge855 Solving a two-step linear inequality: Problem type 1



alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge860 Solving inequalities with no solution or all real numbers as solutions  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge861 Solving a compound linear inequality: Graph solution, advanced  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
 alge943 Writing an absolute value inequality given a graph on the number line  
 alge868 Solving an absolute value inequality: Problem type 1  
 alge869 Solving an absolute value inequality: Problem type 2  
 alge870 Solving an absolute value inequality: Problem type 3  
 alge871 Solving an absolute value inequality: Problem type 4  
 alge872 Solving an absolute value inequality: Problem type 5

### Functions and Lines

set001 Set builder notation  
 set002 Union and intersection of finite sets  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 fun016 Domain and range from ordered pairs  
 alge896 Graphing an integer function and finding its range for a given domain  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 pcalc761 Finding inputs and outputs of a function from its graph  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 pcalc752 Finding local maxima and minima of a function given the graph  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 alge716 Introduction to the composition of two functions  
 fun012 Inverse functions: Linear, discrete  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge873 Identifying solutions to a linear equation in two variables  
 alge850 Table for a linear equation  
 alge066 Finding a solution to a linear equation in two variables  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
 alge881 Graphing a line by first finding its  $x$ - and  $y$ -intercepts  
 alge196 Graphing a line through a given point with a given slope  
 alge882 Graphing a line by first finding its slope and  $y$ -intercept  
 alge883 Graphing a line given its equation in point-slope form  
 alge198 Graphing a vertical or horizontal line  
 alge876 Identifying linear equations: Advanced  
 alge874 Identifying linear functions given ordered pairs  
 alge891 Rewriting a linear equation in the form  $Ax + By = C$   
 alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
 alge924 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Basic  
 alge210 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Advanced  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines

alge888 Finding the coordinate that yields a given slope  
 alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
 alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
 alge892 Writing an equation and graphing a line given its slope and y-intercept  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge893 Writing an equation in slope-intercept form given the slope and a point  
 alge894 Writing an equation in point-slope form given the slope and a point  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 alge897 Writing and evaluating a function that models a real-world situation: Advanced  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 alge990 Domain and range of a linear function that models a real-world situation  
 alge989 Interpreting the parameters of a linear function that models a real-world situation  
 alge992 Combining functions to write a new function that models a real-world situation  
 alge987 Comparing properties of linear functions given in different forms  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 alge895 Identifying parallel and perpendicular lines from equations  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 alge991 Solving a linear equation by graphing  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge828 Interpreting direct variation from a graph  
 alge982 Identifying direct variation equations  
 alge938 Identifying direct variation from ordered pairs and writing equations  
 alge904 Writing a direct variation equation  
 alge175 Word problem on direct variation  
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge908 Finding the first terms of a sequence using a recursive rule  
 alge910 Writing a recursive rule for an arithmetic sequence  
 mstat023 Scatter plots and correlation  
 mstat030 Sketching the line of best fit  
 mstat068 Predictions from the line of best fit  
 mstat067 Approximating the equation of a line of best fit and making predictions  
 mstat069 Computing residuals  
 mstat070 Interpreting residual plots  
 mstat071 Linear relationship and the correlation coefficient  
 mstat074 Identifying correlation and causation  
 alge898 Translating the graph of an absolute value function: One step  
 alge899 Translating the graph of an absolute value function: Two steps  
 alge913 Graphing an absolute value equation of the form  $y = A|x - h| + k$   
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge901 How the leading coefficient affects the graph of an absolute value function  
 alge954 Graphing a parabola of the form  $y = ax^2 + bx + c$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge262 Graphing a cubic function of the form  $y = ax^3 + bx^2 + cx + d$   
 fun030 Evaluating a piecewise-defined function  
 fun031 Graphing a piecewise-defined function: Problem type 1

## Systems

alge914 Identifying solutions to a system of linear equations  
 alge075 Classifying systems of linear equations from graphs

alge725 Graphically solving a system of linear equations  
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge916 Solving a system of linear equations with fractional coefficients  
 alge917 Solving a system of linear equations with decimal coefficients  
 alge752 Solving a 2x2 system of linear equations that is inconsistent or consistent dependent  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 alge988 Identifying the operations used to create equivalent systems of equations  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced  
 alge922 Graphing a system of three linear inequalities  
 pcalc093 Solving a word problem using a system of linear inequalities: Problem type 1  
 pcalc037 Scalar multiplication of a matrix  
 pcalc038 Addition or subtraction of matrices  
 pcalc740 Linear combination of matrices  
 pcalc712 Gauss-Jordan elimination with a 2x2 matrix

## Exponents

alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith029 Ordering numbers with positive exponents  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge030 Product rule with positive exponents: Multivariate  
 alge961 Introduction to the product rule with negative exponents  
 alge028 Product rule with negative exponents  
 alge827 Introduction to the quotient rule of exponents  
 alge026 Quotient of expressions involving exponents  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge926 Quotient rule with negative exponents: Problem type 2  
 alge826 Understanding the power rules of exponents  
 alge754 Introduction to the power rules of exponents  
 alge027 Power rules with positive exponents  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge756 Power and product rules with positive exponents  
 alge927 Power and quotient rules with positive exponents  
 alge928 Power and quotient rules with negative exponents: Problem type 1  
 alge929 Power and quotient rules with negative exponents: Problem type 2  
 alge757 Power, product, and quotient rules with negative exponents  
 arith036 Scientific notation with positive exponent

arith037 Scientific notation with negative exponent  
 scinot002 Multiplying and dividing numbers written in scientific notation  
 alge812 Converting between radical form and exponent form  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge249 Rational exponents: Powers of powers with negative exponents  
 alge971 Table for an exponential function  
 alge830 Evaluating an exponential function that models a real-world situation  
 alge966 Finding the initial amount and rate of change given an exponential function  
 alge968 Writing an equation that models exponential growth or decay  
 alge967 Writing an exponential function rule given a table of ordered pairs  
 alge301 Solving an exponential equation by finding common bases: Linear exponents  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest  
 alge969 Graphing an exponential function:  $f(x) = ax$   
 alge970 Graphing an exponential function:  $f(x) = a(b)^x$   
 alge993 Comparing linear, polynomial, and exponential functions  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge911 Writing recursive rules for arithmetic and geometric sequences

### Polynomials and Factoring

alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge932 Simplifying a sum or difference of multivariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge081 Multiplying conjugate binomials: Multivariate  
 alge032 Squaring a binomial: Univariate  
 alge068 Squaring a binomial: Multivariate  
 alge973 Multiplying binomials with negative coefficients  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge759 Dividing a polynomial by a monomial: Univariate  
 alge760 Dividing a polynomial by a monomial: Multivariate  
 alge761 Polynomial long division: Problem type 1  
 alge762 Polynomial long division: Problem type 2  
 alge763 Polynomial long division: Problem type 3  
 alge985 Closure properties of integers and polynomials  
 alge736 Introduction to the GCF of two monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge930 Greatest common factor of three univariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge949 Factoring out a binomial from a polynomial: GCF factoring, basic  
 alge923 Factoring a univariate polynomial by grouping: Problem type 1

alge950 Factoring a univariate polynomial by grouping: Problem type 2  
 alge951 Factoring a multivariate polynomial by grouping: Problem type 1  
 alge952 Factoring a multivariate polynomial by grouping: Problem type 2  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge942 Factoring a quadratic in two variables with leading coefficient 1  
 alge936 Factoring out a constant before factoring a quadratic  
 alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1  
 alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
 alge941 Factoring a quadratic with leading coefficient greater than 1: Problem type 3  
 alge978 Factoring a quadratic by the ac-method  
 alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
 alge937 Factoring a quadratic with a negative leading coefficient  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge945 Factoring a perfect square trinomial with leading coefficient greater than 1  
 alge946 Factoring a perfect square trinomial in two variables  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge839 Factoring a difference of squares in two variables  
 alge948 Factoring a polynomial involving a GCF and a difference of squares: Univariate  
 alge833 Factoring a polynomial involving a GCF and a difference of squares: Multivariate  
 alge042 Factoring with repeated use of the difference of squares formula  
 alge044 Factoring a sum or difference of two cubes  
 alge681 Solving an equation written in factored form  
 alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge703 Solving a word problem using a quadratic equation with rational roots

### Quadratic Functions and Equations

alge974 Finding the vertex, x-intercepts, and axis of symmetry from the graph of a parabola  
 alge277 Finding the x-intercept(s) and the vertex of a parabola  
 pcalc774 Rewriting a quadratic function to find the vertex of its graph  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge975 Domain and range from the graph of a parabola  
 alge976 Range of a quadratic function  
 alge996 Comparing properties of quadratic functions given in different forms  
 alge953 Translating the graph of a parabola: One step  
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients  
 alge702 Classifying the graph of a function  
 alge965 Identifying linear, quadratic, and exponential functions given ordered pairs  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge185 Writing an equation for a function after a vertical translation  
 fun020 Writing an equation for a function after a vertical and horizontal translation  
 pcalc748 Graphing a quadratic inequality: Problem type 1  
 pcalc749 Graphing a quadratic inequality: Problem type 2  
 alge957 Solving a quadratic equation by graphing  
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 alge958 Solving a quadratic equation using the square root property: Decimal answers, basic  
 alge959 Solving a quadratic equation using the square root property: Decimal answers, advanced  
 alge094 Completing the square  
 alge960 Solving a quadratic equation by completing the square: Decimal answers  
 alge963 Applying the quadratic formula: Decimal answers  
 alge095 Applying the quadratic formula: Exact answers  
 alge214 Discriminant of a quadratic equation

alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge994 Graphically solving a system of linear and quadratic equations  
 alge995 Solving a system of linear and quadratic equations  
 alge997 Finding the average rate of change of a function given its equation  
 alge998 Finding the average rate of change of a function given its graph

### Radicals

alge213 Domain of a square root function  
 pcalc781 Graphing a square root function  
 arith016 Square root of a perfect square  
 arith602 Estimating a square root  
 arith601 Square root of a rational perfect square  
 arith094 Cube root of an integer  
 arith093 Simplifying the square root of a whole number less than 100  
 alge264 Square root of a perfect square monomial  
 alge080 Simplifying a radical expression with an even exponent  
 alge275 Simplifying a radical expression with two variables  
 alge273 Simplifying a higher root of a whole number  
 alge811 Simplifying a higher radical expression: Multivariate  
 arith032 Square root addition or subtraction  
 alge084 Simplifying a sum or difference of radical expressions: Multivariate  
 arith039 Square root multiplication: Advanced  
 alge640 Simplifying a product of radical expressions: Multivariate  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge086 Rationalizing the denominator of a radical expression  
 alge088 Rationalizing the denominator of a radical expression using conjugates  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge091 Solving a radical equation that simplifies to a quadratic equation: One radical  
 geom044 Pythagorean Theorem  
 alge132 Distance between two points in the plane: Exact answers  
 alge191 Midpoint of a line segment in the plane  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc642 Solving a right triangle

### Rational Expressions

alge049 Restriction on a variable in a denominator: Linear  
 alge715 Domain of a rational function: Excluded values  
 alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2  
 alge034 Simplifying a ratio of multivariate polynomials  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge057 Adding rational expressions with different denominators:  $ax$ ,  $bx$



alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge622 Adding rational expressions with different denominators:  $x+a$ ,  $x+b$   
 alge661 Adding rational expressions involving different quadratic denominators  
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 alge058 Complex fraction involving multivariate monomials  
 alge767 Complex fraction: GCF and quadratic factoring  
 alge768 Complex fraction made of sums involving rational expressions  
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced  
 arith612 Word problem involving multiple rates  
 alge770 Solving a work problem using a rational equation  
 alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
 alge903 Identifying direct and inverse variation equations  
 alge905 Writing an inverse variation equation  
 alge176 Word problem on inverse variation  
 alge220 Word problem on inverse proportions  
 pcalc789 Finding the asymptotes of a rational function: Basic  
 pcalc108 Graphing a rational function: Constant or linear over linear

### Data Analysis and Probability

mstat037 Constructing a line plot  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat007 Interpreting a line graph  
 stat804 Interpreting a circle graph or pie chart  
 stat801 Computations from a circle graph  
 geom814 Angle measure in a circle graph  
 mstat031 Interpreting a stem-and-leaf plot  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat001 Mean of a data set  
 mstat028 Mean and median of a data set  
 mstat066 Weighted mean  
 mstat029 How changing a value affects the mean and median  
 mstat053 Choosing the best measure to describe data  
 stat802 Rejecting unreasonable claims based on average statistics  
 mstat025 Finding if a question can be answered by the data  
 mstat049 Computing a percentage from a table of values  
 stat020 Calculating relative frequencies in a contingency table  
 stat805 Making a reasonable inference based on proportion statistics  
 stat009 Percentiles  
 mstat072 Five-number summary and interquartile range  
 stat021 Population standard deviation  
 mstat042 Interpreting a Venn diagram of 2 sets  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 pcalc082 Factorial expressions

mstat017 Computing permutations and combinations  
mstat008 Word problem involving permutations  
mstat009 Word problem involving combinations  
stat790 Permutations, combinations, and the multiplication principle for counting  
mstat026 Introduction to the probability of an event  
mstat010 Probability of an event  
mstat048 Odds of an event  
stat106 Outcomes and event probability  
stat112 Probabilities involving two dice  
mstat011 Area as probability  
mstat046 Experimental and theoretical probability  
mstat047 Introduction to expectation  
mstat012 Probability of independent events  
mstat013 Probability of dependent events  
mstat032 Probability of the union of two events

## B.59 Prep. for LA Geometry EOC Assessment

### Arithmetic Readiness

arith233 Introduction to exponents  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
alge731 Evaluating an algebraic expression: Whole numbers with two operations  
arith056 Factors  
arith070 Least common multiple of 2 numbers  
arith212 Equivalent fractions  
arith067 Simplifying a fraction  
arith801 Finding the LCD of two fractions  
arith230 Addition or subtraction of fractions with different denominators  
arith086 Product of a fraction and a whole number: Problem type 1  
arith053 Fraction multiplication  
arith088 The reciprocal of a number  
arith022 Fraction division  
arith015 Writing an improper fraction as a mixed number  
arith110 Decimal place value: Tenths and hundredths  
arith221 Rounding decimals  
arith069 Writing a ratio as a percentage without a calculator  
arith030 Finding a percentage of a whole number without a calculator: Basic  
alge286 Plotting integers on a number line  
arith691 Ordering integers  
arith200 Integer addition: Problem type 1  
arith108 Integer addition: Problem type 2  
arith688 Integer subtraction: Problem type 1  
arith689 Integer subtraction: Problem type 2  
arith690 Integer subtraction: Problem type 3  
arith701 Word problem with addition or subtraction of integers  
arith116 Signed fraction addition or subtraction: Basic  
arith117 Signed decimal addition and subtraction  
arith234 Signed decimal addition and subtraction with 3 numbers  
arith231 Integer multiplication and division  
arith800 Multiplication of 3 or 4 integers  
arith822 Signed fraction multiplication: Basic  
arith118 Order of operations with integers  
arith702 Exponents and integers: Problem type 1  
arith703 Exponents and integers: Problem type 2  
arith704 Exponents and signed fractions

arith600 Order of operations with integers and exponents  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 arith071 Absolute value of a number  
 arith104 Operations with absolute value: Problem type 2  
 arith016 Square root of a perfect square  
 arith602 Estimating a square root  
 arith601 Square root of a rational perfect square  
 arith094 Cube root of an integer  
 arith093 Simplifying the square root of a whole number less than 100  
 arith032 Square root addition or subtraction  
 arith039 Square root multiplication: Advanced  
 alge086 Rationalizing the denominator of a radical expression

### Equations and Inequalities

alge001 Identifying numbers as integers or non-integers  
 alge002 Identifying numbers as rational or irrational  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 alge663 Combining like terms: Advanced  
 alge293 Combining like terms in a quadratic expression  
 alge187 Properties of addition  
 alge188 Properties of real numbers  
 alge291 Translating a phrase into a two-step expression  
 alge016 Translating a sentence into a one-step equation  
 alge010 Additive property of equality with integers  
 alge266 Additive property of equality with a negative coefficient  
 alge740 Multiplicative property of equality with integers  
 alge820 Multiplicative property of equality with fractions  
 alge012 Multiplicative property of equality with signed fractions  
 alge803 Using two steps to solve an equation with whole numbers  
 alge006 Solving a two-step equation with integers  
 alge208 Solving a two-step equation with signed fractions  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge810 Introduction to algebraic symbol manipulation  
 alge743 Algebraic symbol manipulation: Problem type 1  
 alge744 Algebraic symbol manipulation: Problem type 2  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 arith663 Writing ratios for real-world situations  
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 unit034 Converting between metric and U.S. Customary unit systems  
 alge015 Translating a sentence by using an inequality symbol  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge166 Graphing a compound inequality on the number line  
 alge019 Solving a linear inequality: Problem type 1  
 alge020 Solving a linear inequality: Problem type 2  
 alge021 Solving a linear inequality: Problem type 3  
 alge746 Solving a compound linear inequality: Graph solution, basic

### Linear Equations in Two Variables

alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge850 Table for a linear equation  
 alge066 Finding a solution to a linear equation in two variables  
 alge216 Determining whether given points lie on one, both, or neither of 2 lines given equations  
 alge197 Graphing a line given its x- and y-intercepts  
 alge194 Graphing a line given its equation in slope-intercept form  
 alge195 Graphing a line given its equation in standard form  
 alge196 Graphing a line through a given point with a given slope  
 alge198 Graphing a vertical or horizontal line  
 alge069 Finding the y-intercept of a line given its equation  
 alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
 alge684 Finding slope given the graph of a line on a grid  
 alge685 Finding slope given two points on the line  
 alge631 Finding the slope of a line given its equation  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge071 Writing the equation of a line given the slope and a point on the line  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation

### Reasoning, Lines, and Angles

alge807 Finding the next terms of a sequence with whole numbers  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 alge732 Finding patterns in shapes  
 mstat042 Interpreting a Venn diagram of 2 sets  
 mstat043 Interpreting a Venn diagram of 3 sets  
 glogic001 Conditional statements and negations  
 glogic005 The converse, inverse, and contrapositive of a conditional statement  
 glogic008 Conditional statements and deductive reasoning  
 geom349 Naming segments, rays, and lines  
 geom525 Computing distances between decimals on the number line  
 geom526 Midpoint of a number line segment  
 geom521 Segment addition and midpoints  
 geom616 Introduction to proofs: Justifying statements  
 geom614 Proofs involving segment congruence  
 alge132 Distance between two points in the plane: Exact answers  
 alge191 Midpoint of a line segment in the plane  
 geom358 Identifying parallel and perpendicular lines  
 geom835 Introduction to proofs involving parallel lines  
 geom836 Proofs involving parallel lines  
 geom154 Constructing the perpendicular bisector of a line segment  
 geom150 Constructing a pair of perpendicular lines  
 geom157 Constructing a pair of parallel lines  
 geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom304 Identifying corresponding and alternate angles  
 geom305 Identifying supplementary and vertical angles  
 geom530 Solving equations involving vertical angles  
 geom531 Solving equations involving angles and a pair of parallel lines  
 geom850 Angle addition with relationships between angles

geom851 Angle addition and angle bisectors  
geom611 Proofs involving angle congruence  
geom158 Constructing an angle bisector  
geom159 Constructing congruent angles

### Triangles

geom306 Acute, obtuse, and right triangles  
geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
geom801 Area of a triangle  
geom001 Finding an angle measure of a triangle given two angles  
geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
geom908 Finding an angle measure for a triangle with an extended side  
geom309 Finding an angle measure for a triangle sharing a side with another triangle  
geom812 Finding an angle measure given extended triangles  
geom813 Finding an angle measure given a triangle and parallel lines  
geom844 Using triangle inequality to determine if side lengths form a triangle  
geom845 Using triangle inequality to determine possible lengths of a third side  
geom854 Relationship between angle measures and side lengths in a triangle  
geom855 Relationship between angle measures and side lengths in two triangles  
geom650 Indirect proof (proof by contradiction)  
geom359 Identifying congruent shapes on a grid  
geom520 Identifying and naming congruent triangles  
geom617 Proofs involving congruent triangles and vertical angles or the reflexive property  
geom837 Proofs involving congruent triangles and segment or angle bisectors  
geom840 Proofs involving congruent triangles that overlap: Basic  
geom839 Proofs involving congruent triangles, parallel or perpendicular segments, and CPCTC  
geom843 Proofs involving congruent triangles that overlap: Advanced  
geom044 Pythagorean Theorem  
geom068 Computing an area using the Pythagorean Theorem  
geom862 Using the Pythagorean Theorem repeatedly  
geom506 Special right triangles: Exact answers

### Polygons

geom310 Properties of quadrilaterals  
geom523 Conditions for quadrilaterals  
geom532 Classifying parallelograms  
geom819 Finding coordinates of vertices of polygons  
geom818 Finding the coordinates of a point to make a parallelogram  
geom863 Congruence in the coordinate plane  
geom870 Sum of the angle measures of a quadrilateral  
geom528 Finding measures involving diagonals of parallelograms  
geom527 Conditions for parallelograms  
geom833 Finding measures involving diagonals of rectangles  
geom834 Finding measures involving diagonals of rhombi  
geom852 The sum of interior angle measures in a convex polygon  
geom853 Interior and exterior angle measures in a regular polygon  
geom300 Perimeter of a square or a rectangle  
geom339 Perimeter of a polygon  
geom221 Finding the missing length in a figure  
geom353 Perimeter of a piecewise rectangular figure  
geom817 Finding a side length given the perimeter and side lengths with variables  
geom078 Sides of polygons having the same perimeter  
geom019 Area of a square or a rectangle  
geom350 Distinguishing between the area and perimeter of a rectangle  
geom351 Areas of rectangles with the same perimeter  
geom340 Area of a piecewise rectangular figure

geom142 Word problem involving the area between two rectangles  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom344 Area involving rectangles and triangles  
 geom213 Area of a regular polygon  
 geom832 Area of quadrilaterals in the coordinate plane  
 alge724 Finding an area in terms of variables

### Similarity, Trigonometry, and Transformations

geom360 Identifying similar or congruent shapes on a grid  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom510 Triangles and parallel lines  
 geom507 Right triangles and geometric mean  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc031 Solving a triangle with the law of sines: Problem type 1  
 pcalc032 Solving a triangle with the law of sines: Problem type 2  
 pcalc033 Solving a triangle with the law of cosines  
 geom357 Identifying transformations  
 geom330 Translating a polygon  
 geom331 Using a translated point to find coordinates of other translated points  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom333 Finding the coordinates of three points reflected over an axis  
 geom334 Drawing lines of symmetry  
 geom335 Rotating a figure about the origin  
 geom815 Finding an angle of rotation  
 geom831 Rotational and point symmetries  
 geom336 Dilating a figure  
 pcalc060 Magnitude of a vector given in component form  
 pcalc063 Translation of a vector  
 geom858 Scalar multiplication of a vector: Geometric Approach  
 geom857 Vector addition: Geometric approach  
 geom856 Vector addition and scalar multiplication: Component form  
 vector008 Linear combination of vectors: Component form  
 vector002 Finding the magnitude and direction of a vector given its graph  
 vector005 Finding the components of a vector given its graph

### Circles

geom347 Introduction to a circle: Diameter, radius, and chord  
 geom343 Identifying central angles, inscribed angles, arcs, chords, and tangents of a circle  
 geom848 Tangents of a circle: Problem type 1  
 geom849 Tangents of a circle: Problem type 2  
 geom511 Lengths of chords, secants, and tangents  
 geom514 Inscribed angles of a circle  
 geom512 Central angles and inscribed angles of a circle  
 geom513 Angles of intersecting secants and tangents  
 geom016 Circumference of a circle  
 geom218 Finding the radius or the diameter of a circle given its circumference



geom301 Perimeter involving rectangles and circles  
geom838 Circumference ratios  
geom802 Circumference and area of a circle  
geom805 Arc length and area of a sector of a circle  
geom302 Area involving rectangles and circles  
geom036 Word problem involving the area between two concentric circles  
geom214 Area involving inscribed figures  
geom212 Circles inscribed in and circumscribed about regular polygons  
pcalc605 Graphing a circle given its equation in standard form  
pcalc065 Writing an equation of a circle given its center and a point on the circle  
pcalc066 Writing an equation of a circle given the endpoints of a diameter

### Volumes and Surface Areas

geom830 Counting the cubes in a solid made of cubes  
geom354 Volume of a rectangular prism made of unit cubes  
geom311 Volume of a rectangular prism  
geom505 Volume of a piecewise rectangular prism  
geom090 Volume of a triangular prism  
geom033 Volume of a pyramid  
geom035 Volume of a cylinder  
geom092 Word problem involving the rate of filling or emptying a cylinder  
geom086 Volume of a cone: Exact answers in terms of  $\pi$   
geom841 Volume of a sphere  
geom348 Vertices, edges, and faces of a solid  
geom219 Nets of solids  
geom861 Nets of solids: Advanced  
geom816 Side views of a solid made of cubes  
geom031 Surface area of a cube or a rectangular prism  
geom345 Surface area of a piecewise rectangular prism made of unit cubes  
geom091 Surface area of a triangular prism  
geom034 Surface area of a cylinder: Exact answers in terms of  $\pi$   
geom338 Surface area involving prisms or cylinders  
geom842 Surface area of a sphere  
geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids  
geom847 Similar solids: Problem type 2

### Statistics and Probability

mstat005 Constructing a bar graph for non-numerical data  
mstat024 Interpreting a bar graph  
mstat044 Interpreting a double bar graph  
mstat007 Interpreting a line graph  
mstat049 Computing a percentage from a table of values  
stat804 Interpreting a circle graph or pie chart  
stat801 Computations from a circle graph  
geom814 Angle measure in a circle graph  
mstat041 Interpreting a tree diagram  
mstat040 Introduction to the counting principle  
mstat015 Counting principle  
mstat008 Word problem involving permutations  
mstat009 Word problem involving combinations  
stat790 Permutations, combinations, and the multiplication principle for counting  
mstat026 Introduction to the probability of an event  
mstat010 Probability of an event  
mstat048 Odds of an event  
stat106 Outcomes and event probability  
stat112 Probabilities involving two dice

mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat032 Probability of the union of two events

### Removed Topics - Arithmetic, Equations, Inequalities

arith033 Greatest common factor of 2 numbers  
 arith123 Rounding to hundreds or thousands  
 arith692 Writing expressions using exponents  
 arith683 Power of 10: Positive exponent  
 arith658 Filling in missing operations to make an equation  
 arith034 Prime numbers  
 arith035 Prime factorization  
 arith064 Solving a word problem on proportions using a unit rate  
 arith657 Understanding the distributive property  
 arith092 Using a common denominator to order fractions  
 arith618 Addition or subtraction of fractions with the same denominator  
 arith664 Introduction to addition or subtraction of fractions with different denominators  
 arith079 Product of a unit fraction and a whole number  
 arith119 Introduction to fraction multiplication  
 arith694 Division involving a whole number and a fraction  
 arith697 Mixed arithmetic operations with fractions  
 arith619 Writing a mixed number as an improper fraction  
 arith084 Addition of mixed numbers with the same denominator and carry  
 arith216 Subtraction of mixed numbers with the same denominator and borrowing  
 arith020 Mixed number multiplication: Problem type 1  
 arith068 Mixed number division  
 arith220 Decimal place value: Hundreds to ten thousandths  
 arith608 Ordering decimals  
 arith609 Ordering fractions and decimals  
 arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
 arith222 Converting a fraction to a terminating decimal  
 arith089 Converting a fraction to a repeating decimal  
 arith013 Decimal addition with 3 numbers  
 arith625 Subtraction of aligned decimals  
 arith626 Word problem with one decimal operation: Problem type 1  
 arith627 Word problem with one decimal operation: Problem type 2  
 arith017 Multiplication of a decimal by a whole number  
 arith082 Multiplication of a decimal by a power of ten  
 arith055 Decimal multiplication: Problem type 1  
 arith081 Division of a decimal by a whole number  
 arith083 Division of a decimal by a power of ten  
 mstat034 Measuring length to the nearest quarter or half inch  
 mstat035 Conversions involving measurements in feet and inches  
 mstat036 Adding measurements in feet and inches  
 unit005 U.S. Customary unit conversion with whole number values  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 unit009 U.S. Customary area unit conversion with whole number values  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 arith226 Converting between percentages and decimals

arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
arith090 Converting a percentage to a fraction in simplest form  
arith232 Finding simple interest without a calculator  
arith698 Applying the percent equation  
arith074 Finding the sale price without a calculator given the original price and percent discount  
arith031 Finding the original price given the sale price and percent discount  
arith225 Finding the percentage increase or decrease: Advanced  
arith699 Writing a signed number for a real-world situation  
mstat038 Reading the temperature from a thermometer  
arith687 Fractional position on a number line  
arith605 Plotting rational numbers on a number line  
alge009 Additive property of equality with whole numbers  
alge800 Additive property of equality with decimals  
alge008 Multiplicative property of equality with whole numbers  
alge825 Multiplicative property of equality with decimals  
alge824 Solving a two-step equation with signed decimals  
alge200 Solving an equation to find the value of an expression  
alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
alge742 Solving equations with zero, one, or infinitely many solutions  
alge733 Writing a one-step expression for a real-world situation  
alge602 Writing a one-step variable expression for a real-world situation  
alge730 Writing a multi-step equation for a real-world situation  
alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
alge014 Solving a word problem with two unknowns using a linear equation  
alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
alge794 Solving a value mixture problem using a linear equation  
alge795 Solving a percent mixture problem using a linear equation  
arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
alge823 Solving a one-step word problem using the formula  $d = rt$   
alge218 Solving a word problem involving rates and time conversion  
alge796 Solving a distance, rate, time problem using a linear equation  
alge186 Translating a sentence into a compound inequality  
alge207 Solving a linear inequality: Problem type 4  
alge745 Solving a linear inequality: Problem type 5  
alge748 Writing an inequality for a real-world situation  
alge749 Solving a decimal word problem using a two-step linear inequality  
alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
alge270 Solving an absolute value equation of the form  $a - x = b$  or  $-x + a = b$   
alge103 Solving an absolute value equation of the form  $-ax + b = c$   
alge170 Solving an absolute value inequality: Basic  
mstat004 Constructing a histogram for numerical data  
mstat006 Constructing a box-and-whisker plot  
mstat031 Interpreting a stem-and-leaf plot  
mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
mstat025 Finding if a question can be answered by the data  
stat802 Rejecting unreasonable claims based on average statistics  
stat805 Making a reasonable inference based on proportion statistics  
stat021 Population standard deviation  
mstat003 Mode of a data set  
mstat055 Finding the mode and range of a data set  
mstat001 Mean of a data set  
mstat028 Mean and median of a data set  
stat803 Finding the value for a new score that will yield a given mean  
mstat029 How changing a value affects the mean and median  
mstat053 Choosing the best measure to describe data

mstat066 Weighted mean

### Removed Topics - Advanced Algebra

alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 set004 Set builder and interval notation  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun016 Domain and range from ordered pairs  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 pcalc768 Finding the average rate of change of a function  
 fun019 Sum, difference, and product of two functions  
 fun022 Composition of two functions: Basic  
 fun002 Graphing integer functions  
 pcalc761 Finding inputs and outputs of a function from its graph  
 pcalc750 Finding intercepts of a nonlinear function given its graph  
 pcalc751 Finding where a function is increasing, decreasing, or constant given the graph: Interval notation  
 pcalc752 Finding local maxima and minima of a function given the graph  
 fun024 Domain and range from the graph of a continuous function  
 pcalc114 Even and odd functions: Problem type 1  
 alge185 Writing an equation for a function after a vertical translation  
 fun020 Writing an equation for a function after a vertical and horizontal translation  
 pcalc769 Translating the graph of a function: One step  
 pcalc770 Translating the graph of a function: Two steps  
 pcalc771 Transforming the graph of a function by reflecting over an axis  
 pcalc772 Transforming the graph of a function by shrinking or stretching  
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge712 Graphing an exponential function and its asymptote:  $f(x) = a(b)^x$   
 alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations  
 alge751 Solving a system of linear equations using substitution  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge752 Solving a  $2 \times 2$  system of linear equations that is inconsistent or consistent dependent  
 alge753 Solving a  $3 \times 3$  system of linear equations: Problem type 1  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge184 Solving a value mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a  $3 \times 3$  system of linear equations: Problem type 1  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge079 Graphing a system of two linear inequalities: Basic  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent  
 scinot002 Multiplying and dividing numbers written in scientific notation  
 alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge821 Understanding the product rule of exponents

alge024 Introduction to the product rule of exponents  
alge030 Product rule with positive exponents: Multivariate  
alge028 Product rule with negative exponents  
alge827 Introduction to the quotient rule of exponents  
alge026 Quotient of expressions involving exponents  
alge755 Quotient rule with negative exponents: Problem type 1  
alge826 Understanding the power rules of exponents  
alge754 Introduction to the power rules of exponents  
alge027 Power rules with positive exponents  
alge025 Power of a power rule with negative exponents  
alge799 Power rules with negative exponents  
alge756 Power and product rules with positive exponents  
arith029 Ordering numbers with positive exponents  
alge758 Degree and leading coefficient of a univariate polynomial  
alge798 Simplifying a sum or difference of two univariate polynomials  
alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
alge835 Multiplying a multivariate polynomial by a monomial  
alge033 Multiplying binomials with leading coefficients of 1  
alge764 Multiplying conjugate binomials: Univariate  
alge765 Multiplying binomials in two variables  
alge032 Squaring a binomial: Univariate  
alge180 Multiplication involving binomials and trinomials in two variables  
alge759 Dividing a polynomial by a monomial: Univariate  
alge760 Dividing a polynomial by a monomial: Multivariate  
alge761 Polynomial long division: Problem type 1  
alge762 Polynomial long division: Problem type 2  
alge736 Introduction to the GCF of two monomials  
alge037 Greatest common factor of two multivariate monomials  
alge738 Factoring out a monomial from a polynomial: Univariate  
alge739 Factoring out a monomial from a polynomial: Multivariate  
alge039 Factoring a quadratic with leading coefficient 1  
alge043 Factoring a perfect square trinomial  
alge040 Factoring a quadratic with leading coefficient greater than 1  
alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
alge041 Factoring a product of a quadratic trinomial and a monomial  
alge624 Factoring a difference of squares  
alge038 Factoring a polynomial by grouping: Problem type 1  
alge181 Factoring a polynomial by grouping: Problem type 2  
alge681 Solving an equation written in factored form  
alge045 Finding the roots of a quadratic equation with leading coefficient 1  
alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
alge211 Solving a quadratic equation needing simplification  
alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
alge227 Solving a quadratic equation using the square root property: Exact answers, advanced  
alge094 Completing the square  
alge780 Solving a quadratic equation by completing the square: Exact answers  
alge095 Applying the quadratic formula: Exact answers  
alge214 Discriminant of a quadratic equation  
alge703 Solving a word problem using a quadratic equation with rational roots  
alge524 Solving a word problem using a quadratic equation with irrational roots  
pcalc037 Scalar multiplication of a matrix  
pcalc038 Addition or subtraction of matrices  
pcalc740 Linear combination of matrices  
alge277 Finding the x-intercept(s) and the vertex of a parabola  
pcalc775 Finding the maximum or minimum of a quadratic function  
alge785 Word problem involving the maximum or minimum of a quadratic function  
alge252 Graphing a parabola of the form  $y = ax^2$   
alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
alge702 Classifying the graph of a function  
alge723 How the leading coefficient affects the shape of a parabola  
alge715 Domain of a rational function: Excluded values

alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge057 Adding rational expressions with different denominators:  $ax$ ,  $bx$   
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge622 Adding rational expressions with different denominators:  $x+a$ ,  $x+b$   
 alge661 Adding rational expressions involving different quadratic denominators  
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 alge058 Complex fraction involving multivariate monomials  
 alge767 Complex fraction: GCF and quadratic factoring  
 alge768 Complex fraction made of sums involving rational expressions  
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 pcalc789 Finding the asymptotes of a rational function: Basic  
 pcalc108 Graphing a rational function: Constant or linear over linear  
 arith612 Word problem involving multiple rates  
 alge770 Solving a work problem using a rational equation  
 alge220 Word problem on inverse proportions  
 pcalc681 Writing an equation that models variation  
 alge175 Word problem on direct variation  
 alge176 Word problem on inverse variation  
 alge772 Word problem on combined variation  
 alge213 Domain of a square root function  
 pcalc781 Graphing a square root function  
 alge264 Square root of a perfect square monomial  
 alge080 Simplifying a radical expression with an even exponent  
 alge275 Simplifying a radical expression with two variables  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge088 Rationalizing the denominator of a radical expression using conjugates  
 alge812 Converting between radical form and exponent form  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge249 Rational exponents: Powers of powers with negative exponents  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge091 Solving a radical equation that simplifies to a quadratic equation: One radical  
 alge182 Solving a radical equation that simplifies to a quadratic equation: Two radicals  
 pcalc080 Finding the first terms of a sequence using an explicit rule with multiple occurrences of  $n$   
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest

## B.60 Prep. for MN Mathematics GRAD

### Arithmetic Readiness



arith078 Rounding to tens or hundreds  
arith123 Rounding to hundreds or thousands  
arith101 Estimating a sum of whole numbers  
arith233 Introduction to exponents  
arith692 Writing expressions using exponents  
arith683 Power of 10: Positive exponent  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
alge731 Evaluating an algebraic expression: Whole numbers with two operations  
alge832 Evaluating an algebraic expression: Whole number operations and exponents  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith070 Least common multiple of 2 numbers  
arith240 Word problem with common multiples  
arith212 Equivalent fractions  
arith067 Simplifying a fraction  
arith092 Using a common denominator to order fractions  
arith618 Addition or subtraction of fractions with the same denominator  
arith801 Finding the LCD of two fractions  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
arith100 Fractional part of a circle  
arith079 Product of a unit fraction and a whole number  
arith086 Product of a fraction and a whole number: Problem type 1  
arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith697 Mixed arithmetic operations with fractions  
arith095 Multi-step word problem involving fractions and multiplication  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith084 Addition of mixed numbers with the same denominator and carry  
arith216 Subtraction of mixed numbers with the same denominator and borrowing  
arith085 Addition or subtraction of mixed numbers with different denominators  
arith020 Mixed number multiplication: Problem type 1  
arith068 Mixed number division  
arith110 Decimal place value: Tenths and hundredths  
arith221 Rounding decimals  
arith129 Introduction to ordering decimals  
arith608 Ordering decimals  
arith609 Ordering fractions and decimals  
arith222 Converting a fraction to a terminating decimal  
arith089 Converting a fraction to a repeating decimal  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith624 Addition of aligned decimals  
arith625 Subtraction of aligned decimals  
arith131 Estimating a decimal sum or difference  
arith017 Multiplication of a decimal by a whole number  
arith082 Multiplication of a decimal by a power of ten  
arith055 Decimal multiplication: Problem type 1  
arith081 Division of a decimal by a whole number  
arith083 Division of a decimal by a power of ten  
arith019 Division of a decimal by a 2-digit decimal  
arith626 Word problem with one decimal operation: Problem type 1  
arith627 Word problem with one decimal operation: Problem type 2  
arith628 Word problem with multiple decimal operations: Problem type 1

geom339 Perimeter of a polygon  
 geom300 Perimeter of a square or a rectangle  
 geom019 Area of a square or a rectangle  
 geom221 Finding the missing length in a figure  
 geom340 Area of a piecewise rectangular figure  
 geom142 Word problem involving the area between two rectangles  
 geom801 Area of a triangle  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom016 Circumference of a circle  
 geom301 Perimeter involving rectangles and circles  
 geom838 Circumference ratios  
 geom802 Circumference and area of a circle  
 geom302 Area involving rectangles and circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom031 Surface area of a cube or a rectangular prism  
 geom091 Surface area of a triangular prism  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom842 Surface area of a sphere  
 geom311 Volume of a rectangular prism  
 geom090 Volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom035 Volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom841 Volume of a sphere  
 geom039 Finding supplementary and complementary angles

### Real Numbers

alge001 Identifying numbers as integers or non-integers  
 alge002 Identifying numbers as rational or irrational  
 mstat038 Reading the temperature from a thermometer  
 arith699 Writing a signed number for a real-world situation  
 alge286 Plotting integers on a number line  
 arith687 Fractional position on a number line  
 arith605 Plotting rational numbers on a number line  
 arith691 Ordering integers  
 arith712 Ordering real numbers  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith701 Word problem with addition or subtraction of integers  
 arith116 Signed fraction addition or subtraction: Basic  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers  
 arith822 Signed fraction multiplication: Basic  
 arith105 Signed fraction multiplication: Advanced  
 alge984 Classifying sums and products as rational or irrational  
 arith702 Exponents and integers: Problem type 1  
 arith703 Exponents and integers: Problem type 2  
 arith704 Exponents and signed fractions  
 arith118 Order of operations with integers  
 arith600 Order of operations with integers and exponents

alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 arith071 Absolute value of a number  
 arith104 Operations with absolute value: Problem type 2  
 geom525 Computing distances between decimals on the number line  
 alge187 Properties of addition  
 alge188 Properties of real numbers  
 arith657 Understanding the distributive property  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 alge663 Combining like terms: Advanced  
 alge293 Combining like terms in a quadratic expression

### Linear Equations

alge009 Additive property of equality with whole numbers  
 alge801 Additive property of equality with fractions and mixed numbers  
 alge800 Additive property of equality with decimals  
 alge010 Additive property of equality with integers  
 alge266 Additive property of equality with a negative coefficient  
 alge836 Additive property of equality with signed fractions  
 alge008 Multiplicative property of equality with whole numbers  
 alge820 Multiplicative property of equality with fractions  
 alge825 Multiplicative property of equality with decimals  
 alge797 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge803 Using two steps to solve an equation with whole numbers  
 alge006 Solving a two-step equation with integers  
 alge837 Solving a multi-step equation given in fractional form  
 alge208 Solving a two-step equation with signed fractions  
 alge824 Solving a two-step equation with signed decimals  
 alge200 Solving an equation to find the value of an expression  
 alge920 Introduction to solving an equation with parentheses  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge986 Identifying properties used to solve a linear equation  
 alge810 Introduction to algebraic symbol manipulation  
 alge743 Algebraic symbol manipulation: Problem type 1  
 alge744 Algebraic symbol manipulation: Problem type 2  
 alge733 Writing a one-step expression for a real-world situation  
 alge831 Translating a phrase into a one-step expression  
 alge291 Translating a phrase into a two-step expression  
 alge016 Translating a sentence into a one-step equation  
 alge841 Translating a sentence into a multi-step equation  
 alge730 Writing a multi-step equation for a real-world situation

alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge792 Solving a word problem with three unknowns using a linear equation  
 alge842 Solving a word problem involving consecutive integers  
 alge794 Solving a value mixture problem using a linear equation  
 alge795 Solving a percent mixture problem using a linear equation  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 alge218 Solving a word problem involving rates and time conversion  
 alge796 Solving a distance, rate, time problem using a linear equation  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom530 Solving equations involving vertical angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 stat803 Finding the value for a new score that will yield a given mean  
 arith663 Writing ratios for real-world situations  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 alge840 Solving a proportion of the form  $(x+a) \div b = c \div d$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 arith064 Solving a word problem on proportions using a unit rate  
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 arith226 Converting between percentages and decimals  
 arith090 Converting a percentage to a fraction in simplest form  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith069 Writing a ratio as a percentage without a calculator  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith698 Applying the percent equation  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith031 Finding the original price given the sale price and percent discount  
 arith225 Finding the percentage increase or decrease: Advanced  
 arith232 Finding simple interest without a calculator  
 unit005 U.S. Customary unit conversion with whole number values  
 unit001 Metric distance conversion with whole number values  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 unit052 Finding the absolute error and percent error of a measurement  
 alge864 Solving an absolute value equation: Problem type 1  
 alge865 Solving an absolute value equation: Problem type 2  
 alge866 Solving an absolute value equation: Problem type 3  
 alge867 Solving an absolute value equation: Problem type 4

### Linear Inequalities

alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge846 Translating a sentence into a multi-step inequality  
 alge748 Writing an inequality for a real-world situation  
 alge729 Writing a multi-step inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line

alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge860 Solving inequalities with no solution or all real numbers as solutions  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge861 Solving a compound linear inequality: Graph solution, advanced  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
 alge943 Writing an absolute value inequality given a graph on the number line  
 alge868 Solving an absolute value inequality: Problem type 1  
 alge869 Solving an absolute value inequality: Problem type 2  
 alge870 Solving an absolute value inequality: Problem type 3  
 alge871 Solving an absolute value inequality: Problem type 4  
 alge872 Solving an absolute value inequality: Problem type 5

### Functions and Lines

set001 Set builder notation  
 set002 Union and intersection of finite sets  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 fun016 Domain and range from ordered pairs  
 alge896 Graphing an integer function and finding its range for a given domain  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 pcalc761 Finding inputs and outputs of a function from its graph  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 pcalc752 Finding local maxima and minima of a function given the graph  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 alge716 Introduction to the composition of two functions  
 fun012 Inverse functions: Linear, discrete  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge873 Identifying solutions to a linear equation in two variables  
 alge850 Table for a linear equation  
 alge066 Finding a solution to a linear equation in two variables  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
 alge881 Graphing a line by first finding its  $x$ - and  $y$ -intercepts  
 alge196 Graphing a line through a given point with a given slope  
 alge882 Graphing a line by first finding its slope and  $y$ -intercept

alge883 Graphing a line given its equation in point-slope form  
 alge198 Graphing a vertical or horizontal line  
 alge876 Identifying linear equations: Advanced  
 alge874 Identifying linear functions given ordered pairs  
 alge891 Rewriting a linear equation in the form  $Ax + By = C$   
 alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
 alge924 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Basic  
 alge210 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Advanced  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines  
 alge888 Finding the coordinate that yields a given slope  
 alge889 Finding the slope and  $y$ -intercept of a line given its equation in the form  $y = mx + b$   
 alge890 Finding the slope and  $y$ -intercept of a line given its equation in the form  $Ax + By = C$   
 alge892 Writing an equation and graphing a line given its slope and  $y$ -intercept  
 alge070 Writing an equation of a line given the  $y$ -intercept and another point  
 alge893 Writing an equation in slope-intercept form given the slope and a point  
 alge894 Writing an equation in point-slope form given the slope and a point  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 alge897 Writing and evaluating a function that models a real-world situation: Advanced  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 alge990 Domain and range of a linear function that models a real-world situation  
 alge989 Interpreting the parameters of a linear function that models a real-world situation  
 alge992 Combining functions to write a new function that models a real-world situation  
 alge987 Comparing properties of linear functions given in different forms  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 alge895 Identifying parallel and perpendicular lines from equations  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 alge991 Solving a linear equation by graphing  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge828 Interpreting direct variation from a graph  
 alge982 Identifying direct variation equations  
 alge938 Identifying direct variation from ordered pairs and writing equations  
 alge904 Writing a direct variation equation  
 alge175 Word problem on direct variation  
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge908 Finding the first terms of a sequence using a recursive rule  
 alge910 Writing a recursive rule for an arithmetic sequence  
 mstat023 Scatter plots and correlation  
 mstat030 Sketching the line of best fit  
 mstat068 Predictions from the line of best fit  
 mstat067 Approximating the equation of a line of best fit and making predictions  
 mstat069 Computing residuals  
 mstat070 Interpreting residual plots  
 mstat071 Linear relationship and the correlation coefficient  
 mstat074 Identifying correlation and causation  
 alge898 Translating the graph of an absolute value function: One step  
 alge899 Translating the graph of an absolute value function: Two steps  
 alge913 Graphing an absolute value equation of the form  $y = A|x - h| + k$   
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge901 How the leading coefficient affects the graph of an absolute value function



alge954 Graphing a parabola of the form  $y = ax^2$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 fun030 Evaluating a piecewise-defined function  
 fun031 Graphing a piecewise-defined function: Problem type 1

### Systems

alge914 Identifying solutions to a system of linear equations  
 alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations  
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge916 Solving a system of linear equations with fractional coefficients  
 alge917 Solving a system of linear equations with decimal coefficients  
 alge752 Solving a 2x2 system of linear equations that is inconsistent or consistent dependent  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 alge988 Identifying the operations used to create equivalent systems of equations  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced  
 alge922 Graphing a system of three linear inequalities  
 pcalc093 Solving a word problem using a system of linear inequalities: Problem type 1  
 pcalc037 Scalar multiplication of a matrix  
 pcalc038 Addition or subtraction of matrices  
 pcalc740 Linear combination of matrices  
 pcalc712 Gauss-Jordan elimination with a 2x2 matrix

### Exponents

alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith029 Ordering numbers with positive exponents  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge030 Product rule with positive exponents: Multivariate  
 alge961 Introduction to the product rule with negative exponents  
 alge028 Product rule with negative exponents  
 alge827 Introduction to the quotient rule of exponents  
 alge026 Quotient of expressions involving exponents  
 alge755 Quotient rule with negative exponents: Problem type 1

alge926 Quotient rule with negative exponents: Problem type 2  
 alge826 Understanding the power rules of exponents  
 alge754 Introduction to the power rules of exponents  
 alge027 Power rules with positive exponents  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge756 Power and product rules with positive exponents  
 alge927 Power and quotient rules with positive exponents  
 alge928 Power and quotient rules with negative exponents: Problem type 1  
 alge929 Power and quotient rules with negative exponents: Problem type 2  
 alge757 Power, product, and quotient rules with negative exponents  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent  
 scinot002 Multiplying and dividing numbers written in scientific notation  
 alge812 Converting between radical form and exponent form  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge249 Rational exponents: Powers of powers with negative exponents  
 alge971 Table for an exponential function  
 alge830 Evaluating an exponential function that models a real-world situation  
 alge966 Finding the initial amount and rate of change given an exponential function  
 alge968 Writing an equation that models exponential growth or decay  
 alge967 Writing an exponential function rule given a table of ordered pairs  
 alge301 Solving an exponential equation by finding common bases: Linear exponents  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest  
 alge969 Graphing an exponential function:  $f(x) = ax$   
 alge970 Graphing an exponential function:  $f(x) = a(b)x$   
 alge993 Comparing linear, polynomial, and exponential functions  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge911 Writing recursive rules for arithmetic and geometric sequences

### Polynomials and Factoring

alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge932 Simplifying a sum or difference of multivariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge081 Multiplying conjugate binomials: Multivariate  
 alge032 Squaring a binomial: Univariate  
 alge068 Squaring a binomial: Multivariate  
 alge973 Multiplying binomials with negative coefficients  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge759 Dividing a polynomial by a monomial: Univariate

alge760 Dividing a polynomial by a monomial: Multivariate  
 alge761 Polynomial long division: Problem type 1  
 alge762 Polynomial long division: Problem type 2  
 alge763 Polynomial long division: Problem type 3  
 alge985 Closure properties of integers and polynomials  
 alge736 Introduction to the GCF of two monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge930 Greatest common factor of three univariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge949 Factoring out a binomial from a polynomial: GCF factoring, basic  
 alge923 Factoring a univariate polynomial by grouping: Problem type 1  
 alge950 Factoring a univariate polynomial by grouping: Problem type 2  
 alge951 Factoring a multivariate polynomial by grouping: Problem type 1  
 alge952 Factoring a multivariate polynomial by grouping: Problem type 2  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge942 Factoring a quadratic in two variables with leading coefficient 1  
 alge936 Factoring out a constant before factoring a quadratic  
 alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1  
 alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
 alge941 Factoring a quadratic with leading coefficient greater than 1: Problem type 3  
 alge978 Factoring a quadratic by the ac-method  
 alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
 alge937 Factoring a quadratic with a negative leading coefficient  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge945 Factoring a perfect square trinomial with leading coefficient greater than 1  
 alge946 Factoring a perfect square trinomial in two variables  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge839 Factoring a difference of squares in two variables  
 alge948 Factoring a polynomial involving a GCF and a difference of squares: Univariate  
 alge833 Factoring a polynomial involving a GCF and a difference of squares: Multivariate  
 alge042 Factoring with repeated use of the difference of squares formula  
 alge044 Factoring a sum or difference of two cubes  
 alge681 Solving an equation written in factored form  
 alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge703 Solving a word problem using a quadratic equation with rational roots

### Quadratic Functions and Equations

alge974 Finding the vertex, x-intercepts, and axis of symmetry from the graph of a parabola  
 alge277 Finding the x-intercept(s) and the vertex of a parabola  
 pcalc774 Rewriting a quadratic function to find the vertex of its graph  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge975 Domain and range from the graph of a parabola  
 alge976 Range of a quadratic function  
 alge996 Comparing properties of quadratic functions given in different forms  
 alge953 Translating the graph of a parabola: One step  
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients  
 alge702 Classifying the graph of a function  
 alge965 Identifying linear, quadratic, and exponential functions given ordered pairs  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge185 Writing an equation for a function after a vertical translation

fun020 Writing an equation for a function after a vertical and horizontal translation  
 pcalc748 Graphing a quadratic inequality: Problem type 1  
 pcalc749 Graphing a quadratic inequality: Problem type 2  
 alge957 Solving a quadratic equation by graphing  
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 alge958 Solving a quadratic equation using the square root property: Decimal answers, basic  
 alge959 Solving a quadratic equation using the square root property: Decimal answers, advanced  
 alge094 Completing the square  
 alge960 Solving a quadratic equation by completing the square: Decimal answers  
 alge963 Applying the quadratic formula: Decimal answers  
 alge095 Applying the quadratic formula: Exact answers  
 alge214 Discriminant of a quadratic equation  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge994 Graphically solving a system of linear and quadratic equations  
 alge995 Solving a system of linear and quadratic equations  
 alge997 Finding the average rate of change of a function given its equation  
 alge998 Finding the average rate of change of a function given its graph

### Radicals

alge213 Domain of a square root function  
 pcalc781 Graphing a square root function  
 arith016 Square root of a perfect square  
 arith602 Estimating a square root  
 arith601 Square root of a rational perfect square  
 arith094 Cube root of an integer  
 arith093 Simplifying the square root of a whole number less than 100  
 alge264 Square root of a perfect square monomial  
 alge080 Simplifying a radical expression with an even exponent  
 alge275 Simplifying a radical expression with two variables  
 alge273 Simplifying a higher root of a whole number  
 alge811 Simplifying a higher radical expression: Multivariate  
 arith032 Square root addition or subtraction  
 alge084 Simplifying a sum or difference of radical expressions: Multivariate  
 arith039 Square root multiplication: Advanced  
 alge640 Simplifying a product of radical expressions: Multivariate  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge086 Rationalizing the denominator of a radical expression  
 alge088 Rationalizing the denominator of a radical expression using conjugates  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge091 Solving a radical equation that simplifies to a quadratic equation: One radical  
 geom044 Pythagorean Theorem  
 alge132 Distance between two points in the plane: Exact answers  
 alge191 Midpoint of a line segment in the plane  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc642 Solving a right triangle

### Rational Expressions

alge049 Restriction on a variable in a denominator: Linear  
 alge715 Domain of a rational function: Excluded values

alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2  
 alge034 Simplifying a ratio of multivariate polynomials  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge057 Adding rational expressions with different denominators:  $ax$ ,  $bx$   
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge622 Adding rational expressions with different denominators:  $x+a$ ,  $x+b$   
 alge661 Adding rational expressions involving different quadratic denominators  
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 alge058 Complex fraction involving multivariate monomials  
 alge767 Complex fraction: GCF and quadratic factoring  
 alge768 Complex fraction made of sums involving rational expressions  
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced  
 arith612 Word problem involving multiple rates  
 alge770 Solving a work problem using a rational equation  
 alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
 alge903 Identifying direct and inverse variation equations  
 alge905 Writing an inverse variation equation  
 alge176 Word problem on inverse variation  
 alge220 Word problem on inverse proportions  
 pcalc789 Finding the asymptotes of a rational function: Basic  
 pcalc108 Graphing a rational function: Constant or linear over linear

### Data Analysis and Probability

mstat037 Constructing a line plot  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat007 Interpreting a line graph  
 stat804 Interpreting a circle graph or pie chart  
 stat801 Computations from a circle graph  
 geom814 Angle measure in a circle graph  
 mstat031 Interpreting a stem-and-leaf plot  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat001 Mean of a data set  
 mstat028 Mean and median of a data set  
 mstat066 Weighted mean  
 mstat029 How changing a value affects the mean and median  
 mstat053 Choosing the best measure to describe data  
 stat802 Rejecting unreasonable claims based on average statistics  
 mstat025 Finding if a question can be answered by the data  
 mstat049 Computing a percentage from a table of values

stat020 Calculating relative frequencies in a contingency table  
 stat805 Making a reasonable inference based on proportion statistics  
 stat009 Percentiles  
 mstat072 Five-number summary and interquartile range  
 stat021 Population standard deviation  
 mstat042 Interpreting a Venn diagram of 2 sets  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 stat790 Permutations, combinations, and the multiplication principle for counting  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat032 Probability of the union of two events

## B.61 Prep. for PA Algebra 1 Keystone Exam

### Arithmetic Readiness

arith078 Rounding to tens or hundreds  
 arith123 Rounding to hundreds or thousands  
 arith101 Estimating a sum of whole numbers  
 arith233 Introduction to exponents  
 arith692 Writing expressions using exponents  
 arith683 Power of 10: Positive exponent  
 arith048 Order of operations with whole numbers  
 arith051 Order of operations with whole numbers and grouping symbols  
 arith693 Order of operations with whole numbers and exponents: Basic  
 arith713 Order of operations with whole numbers and exponents: Advanced  
 alge731 Evaluating an algebraic expression: Whole numbers with two operations  
 alge832 Evaluating an algebraic expression: Whole number operations and exponents  
 arith056 Factors  
 arith034 Prime numbers  
 arith035 Prime factorization  
 arith033 Greatest common factor of 2 numbers  
 arith070 Least common multiple of 2 numbers  
 arith240 Word problem with common multiples  
 arith212 Equivalent fractions  
 arith067 Simplifying a fraction  
 arith092 Using a common denominator to order fractions  
 arith618 Addition or subtraction of fractions with the same denominator  
 arith801 Finding the LCD of two fractions  
 arith664 Introduction to addition or subtraction of fractions with different denominators  
 arith230 Addition or subtraction of fractions with different denominators  
 arith100 Fractional part of a circle  
 arith079 Product of a unit fraction and a whole number



arith086 Product of a fraction and a whole number: Problem type 1  
arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith697 Mixed arithmetic operations with fractions  
arith095 Multi-step word problem involving fractions and multiplication  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith084 Addition of mixed numbers with the same denominator and carry  
arith216 Subtraction of mixed numbers with the same denominator and borrowing  
arith085 Addition or subtraction of mixed numbers with different denominators  
arith020 Mixed number multiplication: Problem type 1  
arith068 Mixed number division  
arith110 Decimal place value: Tenths and hundredths  
arith221 Rounding decimals  
arith129 Introduction to ordering decimals  
arith608 Ordering decimals  
arith609 Ordering fractions and decimals  
arith222 Converting a fraction to a terminating decimal  
arith089 Converting a fraction to a repeating decimal  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith624 Addition of aligned decimals  
arith625 Subtraction of aligned decimals  
arith131 Estimating a decimal sum or difference  
arith017 Multiplication of a decimal by a whole number  
arith082 Multiplication of a decimal by a power of ten  
arith055 Decimal multiplication: Problem type 1  
arith081 Division of a decimal by a whole number  
arith083 Division of a decimal by a power of ten  
arith019 Division of a decimal by a 2-digit decimal  
arith626 Word problem with one decimal operation: Problem type 1  
arith627 Word problem with one decimal operation: Problem type 2  
arith628 Word problem with multiple decimal operations: Problem type 1  
geom339 Perimeter of a polygon  
geom300 Perimeter of a square or a rectangle  
geom019 Area of a square or a rectangle  
geom221 Finding the missing length in a figure  
geom340 Area of a piecewise rectangular figure  
geom142 Word problem involving the area between two rectangles  
geom801 Area of a triangle  
geom022 Area of a parallelogram  
geom023 Area of a trapezoid  
geom016 Circumference of a circle  
geom301 Perimeter involving rectangles and circles  
geom838 Circumference ratios  
geom802 Circumference and area of a circle  
geom302 Area involving rectangles and circles  
geom036 Word problem involving the area between two concentric circles  
geom214 Area involving inscribed figures  
geom031 Surface area of a cube or a rectangular prism  
geom091 Surface area of a triangular prism  
geom034 Surface area of a cylinder: Exact answers in terms of pi  
geom842 Surface area of a sphere  
geom311 Volume of a rectangular prism  
geom090 Volume of a triangular prism  
geom033 Volume of a pyramid  
geom035 Volume of a cylinder  
geom092 Word problem involving the rate of filling or emptying a cylinder  
geom086 Volume of a cone: Exact answers in terms of pi  
geom841 Volume of a sphere

geom039 Finding supplementary and complementary angles

### Real Numbers

alge001 Identifying numbers as integers or non-integers  
alge002 Identifying numbers as rational or irrational  
mstat038 Reading the temperature from a thermometer  
arith699 Writing a signed number for a real-world situation  
alge286 Plotting integers on a number line  
arith687 Fractional position on a number line  
arith605 Plotting rational numbers on a number line  
arith691 Ordering integers  
arith712 Ordering real numbers  
arith200 Integer addition: Problem type 1  
arith108 Integer addition: Problem type 2  
arith688 Integer subtraction: Problem type 1  
arith689 Integer subtraction: Problem type 2  
arith690 Integer subtraction: Problem type 3  
arith701 Word problem with addition or subtraction of integers  
arith116 Signed fraction addition or subtraction: Basic  
arith106 Signed fraction addition or subtraction: Advanced  
arith117 Signed decimal addition and subtraction  
arith234 Signed decimal addition and subtraction with 3 numbers  
arith231 Integer multiplication and division  
arith800 Multiplication of 3 or 4 integers  
arith822 Signed fraction multiplication: Basic  
arith105 Signed fraction multiplication: Advanced  
alge984 Classifying sums and products as rational or irrational  
arith702 Exponents and integers: Problem type 1  
arith703 Exponents and integers: Problem type 2  
arith704 Exponents and signed fractions  
arith118 Order of operations with integers  
arith600 Order of operations with integers and exponents  
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
alge004 Evaluating a quadratic expression: Integers  
arith071 Absolute value of a number  
arith104 Operations with absolute value: Problem type 2  
geom525 Computing distances between decimals on the number line  
alge187 Properties of addition  
alge188 Properties of real numbers  
arith657 Understanding the distributive property  
alge606 Distributive property: Whole number coefficients  
alge604 Distributive property: Integer coefficients  
alge700 Combining like terms: Whole number coefficients  
alge607 Combining like terms: Integer coefficients  
alge663 Combining like terms: Advanced  
alge293 Combining like terms in a quadratic expression

### Linear Equations

alge009 Additive property of equality with whole numbers  
alge801 Additive property of equality with fractions and mixed numbers  
alge800 Additive property of equality with decimals  
alge010 Additive property of equality with integers  
alge266 Additive property of equality with a negative coefficient  
alge836 Additive property of equality with signed fractions  
alge008 Multiplicative property of equality with whole numbers  
alge820 Multiplicative property of equality with fractions

alge825 Multiplicative property of equality with decimals  
alge797 Multiplicative property of equality with integers  
alge012 Multiplicative property of equality with signed fractions  
alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
alge803 Using two steps to solve an equation with whole numbers  
alge006 Solving a two-step equation with integers  
alge837 Solving a multi-step equation given in fractional form  
alge208 Solving a two-step equation with signed fractions  
alge824 Solving a two-step equation with signed decimals  
alge200 Solving an equation to find the value of an expression  
alge920 Introduction to solving an equation with parentheses  
alge838 Introduction to solving an equation with variables on the same side  
alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
alge742 Solving equations with zero, one, or infinitely many solutions  
alge986 Identifying properties used to solve a linear equation  
alge810 Introduction to algebraic symbol manipulation  
alge743 Algebraic symbol manipulation: Problem type 1  
alge744 Algebraic symbol manipulation: Problem type 2  
alge733 Writing a one-step expression for a real-world situation  
alge831 Translating a phrase into a one-step expression  
alge291 Translating a phrase into a two-step expression  
alge016 Translating a sentence into a one-step equation  
alge841 Translating a sentence into a multi-step equation  
alge730 Writing a multi-step equation for a real-world situation  
alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
alge014 Solving a word problem with two unknowns using a linear equation  
alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
alge792 Solving a word problem with three unknowns using a linear equation  
alge842 Solving a word problem involving consecutive integers  
alge794 Solving a value mixture problem using a linear equation  
alge795 Solving a percent mixture problem using a linear equation  
arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
alge823 Solving a one-step word problem using the formula  $d = rt$   
alge218 Solving a word problem involving rates and time conversion  
alge796 Solving a distance, rate, time problem using a linear equation  
geom817 Finding a side length given the perimeter and side lengths with variables  
geom217 Finding the side length of a rectangle given its perimeter or area  
geom143 Finding the perimeter or area of a rectangle given one of these values  
geom530 Solving equations involving vertical angles  
geom001 Finding an angle measure of a triangle given two angles  
geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
stat803 Finding the value for a new score that will yield a given mean  
arith663 Writing ratios for real-world situations  
alge272 Solving a proportion of the form  $x/a = b/c$   
alge840 Solving a proportion of the form  $(x+a)/b = c/d$   
alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
arith064 Solving a word problem on proportions using a unit rate  
arith610 Word problem on proportions: Problem type 1  
arith611 Word problem on proportions: Problem type 2

geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 arith226 Converting between percentages and decimals  
 arith090 Converting a percentage to a fraction in simplest form  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith069 Writing a ratio as a percentage without a calculator  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith698 Applying the percent equation  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith031 Finding the original price given the sale price and percent discount  
 arith225 Finding the percentage increase or decrease: Advanced  
 arith232 Finding simple interest without a calculator  
 unit005 U.S. Customary unit conversion with whole number values  
 unit001 Metric distance conversion with whole number values  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 unit052 Finding the absolute error and percent error of a measurement  
 alge864 Solving an absolute value equation: Problem type 1  
 alge865 Solving an absolute value equation: Problem type 2  
 alge866 Solving an absolute value equation: Problem type 3  
 alge867 Solving an absolute value equation: Problem type 4

### Linear Inequalities

alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge846 Translating a sentence into a multi-step inequality  
 alge748 Writing an inequality for a real-world situation  
 alge729 Writing a multi-step inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge860 Solving inequalities with no solution or all real numbers as solutions  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge861 Solving a compound linear inequality: Graph solution, advanced  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
 alge943 Writing an absolute value inequality given a graph on the number line  
 alge868 Solving an absolute value inequality: Problem type 1  
 alge869 Solving an absolute value inequality: Problem type 2  
 alge870 Solving an absolute value inequality: Problem type 3  
 alge871 Solving an absolute value inequality: Problem type 4

alge872 Solving an absolute value inequality: Problem type 5

### Functions and Lines

set001 Set builder notation  
 set002 Union and intersection of finite sets  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 fun016 Domain and range from ordered pairs  
 alge896 Graphing an integer function and finding its range for a given domain  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 pcalc761 Finding inputs and outputs of a function from its graph  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 pcalc752 Finding local maxima and minima of a function given the graph  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 alge716 Introduction to the composition of two functions  
 fun012 Inverse functions: Linear, discrete  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge873 Identifying solutions to a linear equation in two variables  
 alge850 Table for a linear equation  
 alge066 Finding a solution to a linear equation in two variables  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge197 Graphing a line given its x- and y-intercepts  
 alge881 Graphing a line by first finding its x- and y-intercepts  
 alge196 Graphing a line through a given point with a given slope  
 alge882 Graphing a line by first finding its slope and y-intercept  
 alge883 Graphing a line given its equation in point-slope form  
 alge198 Graphing a vertical or horizontal line  
 alge876 Identifying linear equations: Advanced  
 alge874 Identifying linear functions given ordered pairs  
 alge891 Rewriting a linear equation in the form  $Ax + By = C$   
 alge884 Finding x- and y-intercepts given the graph of a line on a grid  
 alge924 Finding x- and y-intercepts of a line given the equation: Basic  
 alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines  
 alge888 Finding the coordinate that yields a given slope  
 alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
 alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
 alge892 Writing an equation and graphing a line given its slope and y-intercept  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge893 Writing an equation in slope-intercept form given the slope and a point  
 alge894 Writing an equation in point-slope form given the slope and a point  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 alge897 Writing and evaluating a function that models a real-world situation: Advanced  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 alge990 Domain and range of a linear function that models a real-world situation  
 alge989 Interpreting the parameters of a linear function that models a real-world situation  
 alge992 Combining functions to write a new function that models a real-world situation

alge987 Comparing properties of linear functions given in different forms  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 alge895 Identifying parallel and perpendicular lines from equations  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 alge991 Solving a linear equation by graphing  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge828 Interpreting direct variation from a graph  
 alge982 Identifying direct variation equations  
 alge938 Identifying direct variation from ordered pairs and writing equations  
 alge904 Writing a direct variation equation  
 alge175 Word problem on direct variation  
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge908 Finding the first terms of a sequence using a recursive rule  
 alge910 Writing a recursive rule for an arithmetic sequence  
 mstat023 Scatter plots and correlation  
 mstat030 Sketching the line of best fit  
 mstat068 Predictions from the line of best fit  
 mstat067 Approximating the equation of a line of best fit and making predictions  
 mstat069 Computing residuals  
 mstat070 Interpreting residual plots  
 mstat071 Linear relationship and the correlation coefficient  
 mstat074 Identifying correlation and causation  
 alge898 Translating the graph of an absolute value function: One step  
 alge899 Translating the graph of an absolute value function: Two steps  
 alge913 Graphing an absolute value equation of the form  $y = A|x - h| + k$   
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge901 How the leading coefficient affects the graph of an absolute value function  
 alge954 Graphing a parabola of the form  $y = ax^2 + bx + c$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge262 Graphing a cubic function of the form  $y = ax^3 + bx^2 + cx + d$   
 fun030 Evaluating a piecewise-defined function  
 fun031 Graphing a piecewise-defined function: Problem type 1

## Systems

alge914 Identifying solutions to a system of linear equations  
 alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations  
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge916 Solving a system of linear equations with fractional coefficients  
 alge917 Solving a system of linear equations with decimal coefficients  
 alge752 Solving a 2x2 system of linear equations that is inconsistent or consistent dependent  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 alge988 Identifying the operations used to create equivalent systems of equations  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations



alge192 Solving a percent mixture problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced  
 alge922 Graphing a system of three linear inequalities  
 pcalc093 Solving a word problem using a system of linear inequalities: Problem type 1  
 pcalc037 Scalar multiplication of a matrix  
 pcalc038 Addition or subtraction of matrices  
 pcalc740 Linear combination of matrices  
 pcalc712 Gauss-Jordan elimination with a 2x2 matrix

## Exponents

alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith029 Ordering numbers with positive exponents  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge030 Product rule with positive exponents: Multivariate  
 alge961 Introduction to the product rule with negative exponents  
 alge028 Product rule with negative exponents  
 alge827 Introduction to the quotient rule of exponents  
 alge026 Quotient of expressions involving exponents  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge926 Quotient rule with negative exponents: Problem type 2  
 alge826 Understanding the power rules of exponents  
 alge754 Introduction to the power rules of exponents  
 alge027 Power rules with positive exponents  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge756 Power and product rules with positive exponents  
 alge927 Power and quotient rules with positive exponents  
 alge928 Power and quotient rules with negative exponents: Problem type 1  
 alge929 Power and quotient rules with negative exponents: Problem type 2  
 alge757 Power, product, and quotient rules with negative exponents  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent  
 scinot002 Multiplying and dividing numbers written in scientific notation  
 alge812 Converting between radical form and exponent form  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge249 Rational exponents: Powers of powers with negative exponents  
 alge971 Table for an exponential function  
 alge830 Evaluating an exponential function that models a real-world situation  
 alge966 Finding the initial amount and rate of change given an exponential function  
 alge968 Writing an equation that models exponential growth or decay  
 alge967 Writing an exponential function rule given a table of ordered pairs  
 alge301 Solving an exponential equation by finding common bases: Linear exponents  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest

alge969 Graphing an exponential function:  $f(x) = ax$   
 alge970 Graphing an exponential function:  $f(x) = a(b)x$   
 alge993 Comparing linear, polynomial, and exponential functions  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge911 Writing recursive rules for arithmetic and geometric sequences

### Polynomials and Factoring

alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge932 Simplifying a sum or difference of multivariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge081 Multiplying conjugate binomials: Multivariate  
 alge032 Squaring a binomial: Univariate  
 alge068 Squaring a binomial: Multivariate  
 alge973 Multiplying binomials with negative coefficients  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge759 Dividing a polynomial by a monomial: Univariate  
 alge760 Dividing a polynomial by a monomial: Multivariate  
 alge761 Polynomial long division: Problem type 1  
 alge762 Polynomial long division: Problem type 2  
 alge763 Polynomial long division: Problem type 3  
 alge985 Closure properties of integers and polynomials  
 alge736 Introduction to the GCF of two monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge930 Greatest common factor of three univariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge949 Factoring out a binomial from a polynomial: GCF factoring, basic  
 alge923 Factoring a univariate polynomial by grouping: Problem type 1  
 alge950 Factoring a univariate polynomial by grouping: Problem type 2  
 alge951 Factoring a multivariate polynomial by grouping: Problem type 1  
 alge952 Factoring a multivariate polynomial by grouping: Problem type 2  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge942 Factoring a quadratic in two variables with leading coefficient 1  
 alge936 Factoring out a constant before factoring a quadratic  
 alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1  
 alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
 alge941 Factoring a quadratic with leading coefficient greater than 1: Problem type 3  
 alge978 Factoring a quadratic by the ac-method  
 alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
 alge937 Factoring a quadratic with a negative leading coefficient  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge945 Factoring a perfect square trinomial with leading coefficient greater than 1

alge946 Factoring a perfect square trinomial in two variables  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge839 Factoring a difference of squares in two variables  
 alge948 Factoring a polynomial involving a GCF and a difference of squares: Univariate  
 alge833 Factoring a polynomial involving a GCF and a difference of squares: Multivariate  
 alge042 Factoring with repeated use of the difference of squares formula  
 alge044 Factoring a sum or difference of two cubes  
 alge681 Solving an equation written in factored form  
 alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge703 Solving a word problem using a quadratic equation with rational roots

### Quadratic Functions and Equations

alge974 Finding the vertex, x-intercepts, and axis of symmetry from the graph of a parabola  
 alge277 Finding the x-intercept(s) and the vertex of a parabola  
 pcalc774 Rewriting a quadratic function to find the vertex of its graph  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge975 Domain and range from the graph of a parabola  
 alge976 Range of a quadratic function  
 alge996 Comparing properties of quadratic functions given in different forms  
 alge953 Translating the graph of a parabola: One step  
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients  
 alge702 Classifying the graph of a function  
 alge965 Identifying linear, quadratic, and exponential functions given ordered pairs  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge185 Writing an equation for a function after a vertical translation  
 fun020 Writing an equation for a function after a vertical and horizontal translation  
 pcalc748 Graphing a quadratic inequality: Problem type 1  
 pcalc749 Graphing a quadratic inequality: Problem type 2  
 alge957 Solving a quadratic equation by graphing  
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 alge958 Solving a quadratic equation using the square root property: Decimal answers, basic  
 alge959 Solving a quadratic equation using the square root property: Decimal answers, advanced  
 alge094 Completing the square  
 alge960 Solving a quadratic equation by completing the square: Decimal answers  
 alge963 Applying the quadratic formula: Decimal answers  
 alge095 Applying the quadratic formula: Exact answers  
 alge214 Discriminant of a quadratic equation  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge994 Graphically solving a system of linear and quadratic equations  
 alge995 Solving a system of linear and quadratic equations  
 alge997 Finding the average rate of change of a function given its equation  
 alge998 Finding the average rate of change of a function given its graph

### Radicals

alge213 Domain of a square root function  
 pcalc781 Graphing a square root function  
 arith016 Square root of a perfect square  
 arith602 Estimating a square root  
 arith601 Square root of a rational perfect square

arith094 Cube root of an integer  
 arith093 Simplifying the square root of a whole number less than 100  
 alge264 Square root of a perfect square monomial  
 alge080 Simplifying a radical expression with an even exponent  
 alge275 Simplifying a radical expression with two variables  
 alge273 Simplifying a higher root of a whole number  
 alge811 Simplifying a higher radical expression: Multivariate  
 arith032 Square root addition or subtraction  
 alge084 Simplifying a sum or difference of radical expressions: Multivariate  
 arith039 Square root multiplication: Advanced  
 alge640 Simplifying a product of radical expressions: Multivariate  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge086 Rationalizing the denominator of a radical expression  
 alge088 Rationalizing the denominator of a radical expression using conjugates  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge091 Solving a radical equation that simplifies to a quadratic equation: One radical  
 geom044 Pythagorean Theorem  
 alge132 Distance between two points in the plane: Exact answers  
 alge191 Midpoint of a line segment in the plane  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc642 Solving a right triangle

### Rational Expressions

alge049 Restriction on a variable in a denominator: Linear  
 alge715 Domain of a rational function: Excluded values  
 alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2  
 alge034 Simplifying a ratio of multivariate polynomials  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge057 Adding rational expressions with different denominators:  $ax$ ,  $bx$   
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge622 Adding rational expressions with different denominators:  $x+a$ ,  $x+b$   
 alge661 Adding rational expressions involving different quadratic denominators  
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 alge058 Complex fraction involving multivariate monomials  
 alge767 Complex fraction: GCF and quadratic factoring  
 alge768 Complex fraction made of sums involving rational expressions  
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced

arith612 Word problem involving multiple rates  
 alge770 Solving a work problem using a rational equation  
 alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
 alge903 Identifying direct and inverse variation equations  
 alge905 Writing an inverse variation equation  
 alge176 Word problem on inverse variation  
 alge220 Word problem on inverse proportions  
 pcalc789 Finding the asymptotes of a rational function: Basic  
 pcalc108 Graphing a rational function: Constant or linear over linear

### Data Analysis and Probability

mstat037 Constructing a line plot  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat007 Interpreting a line graph  
 stat804 Interpreting a circle graph or pie chart  
 stat801 Computations from a circle graph  
 geom814 Angle measure in a circle graph  
 mstat031 Interpreting a stem-and-leaf plot  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat001 Mean of a data set  
 mstat028 Mean and median of a data set  
 mstat066 Weighted mean  
 mstat029 How changing a value affects the mean and median  
 mstat053 Choosing the best measure to describe data  
 stat802 Rejecting unreasonable claims based on average statistics  
 mstat025 Finding if a question can be answered by the data  
 mstat049 Computing a percentage from a table of values  
 stat020 Calculating relative frequencies in a contingency table  
 stat805 Making a reasonable inference based on proportion statistics  
 stat009 Percentiles  
 mstat072 Five-number summary and interquartile range  
 stat021 Population standard deviation  
 mstat042 Interpreting a Venn diagram of 2 sets  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 stat790 Permutations, combinations, and the multiplication principle for counting  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat032 Probability of the union of two events

## B.62 Prep. for SC Algebra 1 EOC Examination

### Arithmetic Readiness

arith078 Rounding to tens or hundreds  
arith123 Rounding to hundreds or thousands  
arith101 Estimating a sum of whole numbers  
arith233 Introduction to exponents  
arith692 Writing expressions using exponents  
arith683 Power of 10: Positive exponent  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
alge731 Evaluating an algebraic expression: Whole numbers with two operations  
alge832 Evaluating an algebraic expression: Whole number operations and exponents  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith070 Least common multiple of 2 numbers  
arith240 Word problem with common multiples  
arith212 Equivalent fractions  
arith067 Simplifying a fraction  
arith092 Using a common denominator to order fractions  
arith618 Addition or subtraction of fractions with the same denominator  
arith801 Finding the LCD of two fractions  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
arith100 Fractional part of a circle  
arith079 Product of a unit fraction and a whole number  
arith086 Product of a fraction and a whole number: Problem type 1  
arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith697 Mixed arithmetic operations with fractions  
arith095 Multi-step word problem involving fractions and multiplication  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith084 Addition of mixed numbers with the same denominator and carry  
arith216 Subtraction of mixed numbers with the same denominator and borrowing  
arith085 Addition or subtraction of mixed numbers with different denominators  
arith020 Mixed number multiplication: Problem type 1  
arith068 Mixed number division  
arith110 Decimal place value: Tenths and hundredths  
arith221 Rounding decimals  
arith129 Introduction to ordering decimals  
arith608 Ordering decimals  
arith609 Ordering fractions and decimals  
arith222 Converting a fraction to a terminating decimal  
arith089 Converting a fraction to a repeating decimal  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith624 Addition of aligned decimals  
arith625 Subtraction of aligned decimals  
arith131 Estimating a decimal sum or difference  
arith017 Multiplication of a decimal by a whole number  
arith082 Multiplication of a decimal by a power of ten  
arith055 Decimal multiplication: Problem type 1  
arith081 Division of a decimal by a whole number



arith083 Division of a decimal by a power of ten  
 arith019 Division of a decimal by a 2-digit decimal  
 arith626 Word problem with one decimal operation: Problem type 1  
 arith627 Word problem with one decimal operation: Problem type 2  
 arith628 Word problem with multiple decimal operations: Problem type 1  
 geom339 Perimeter of a polygon  
 geom300 Perimeter of a square or a rectangle  
 geom019 Area of a square or a rectangle  
 geom221 Finding the missing length in a figure  
 geom340 Area of a piecewise rectangular figure  
 geom142 Word problem involving the area between two rectangles  
 geom801 Area of a triangle  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom016 Circumference of a circle  
 geom301 Perimeter involving rectangles and circles  
 geom838 Circumference ratios  
 geom802 Circumference and area of a circle  
 geom302 Area involving rectangles and circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom031 Surface area of a cube or a rectangular prism  
 geom091 Surface area of a triangular prism  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom842 Surface area of a sphere  
 geom311 Volume of a rectangular prism  
 geom090 Volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom035 Volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom841 Volume of a sphere  
 geom039 Finding supplementary and complementary angles

### Real Numbers

alge001 Identifying numbers as integers or non-integers  
 alge002 Identifying numbers as rational or irrational  
 mstat038 Reading the temperature from a thermometer  
 arith699 Writing a signed number for a real-world situation  
 alge286 Plotting integers on a number line  
 arith687 Fractional position on a number line  
 arith605 Plotting rational numbers on a number line  
 arith691 Ordering integers  
 arith712 Ordering real numbers  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith701 Word problem with addition or subtraction of integers  
 arith116 Signed fraction addition or subtraction: Basic  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers  
 arith822 Signed fraction multiplication: Basic  
 arith105 Signed fraction multiplication: Advanced  
 alge984 Classifying sums and products as rational or irrational

arith702 Exponents and integers: Problem type 1  
 arith703 Exponents and integers: Problem type 2  
 arith704 Exponents and signed fractions  
 arith118 Order of operations with integers  
 arith600 Order of operations with integers and exponents  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 arith071 Absolute value of a number  
 arith104 Operations with absolute value: Problem type 2  
 geom525 Computing distances between decimals on the number line  
 alge187 Properties of addition  
 alge188 Properties of real numbers  
 arith657 Understanding the distributive property  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 alge663 Combining like terms: Advanced  
 alge293 Combining like terms in a quadratic expression

### Linear Equations

alge009 Additive property of equality with whole numbers  
 alge801 Additive property of equality with fractions and mixed numbers  
 alge800 Additive property of equality with decimals  
 alge010 Additive property of equality with integers  
 alge266 Additive property of equality with a negative coefficient  
 alge836 Additive property of equality with signed fractions  
 alge008 Multiplicative property of equality with whole numbers  
 alge820 Multiplicative property of equality with fractions  
 alge825 Multiplicative property of equality with decimals  
 alge797 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge803 Using two steps to solve an equation with whole numbers  
 alge006 Solving a two-step equation with integers  
 alge837 Solving a multi-step equation given in fractional form  
 alge208 Solving a two-step equation with signed fractions  
 alge824 Solving a two-step equation with signed decimals  
 alge200 Solving an equation to find the value of an expression  
 alge920 Introduction to solving an equation with parentheses  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge986 Identifying properties used to solve a linear equation  
 alge810 Introduction to algebraic symbol manipulation  
 alge743 Algebraic symbol manipulation: Problem type 1  
 alge744 Algebraic symbol manipulation: Problem type 2  
 alge733 Writing a one-step expression for a real-world situation

alge831 Translating a phrase into a one-step expression  
 alge291 Translating a phrase into a two-step expression  
 alge016 Translating a sentence into a one-step equation  
 alge841 Translating a sentence into a multi-step equation  
 alge730 Writing a multi-step equation for a real-world situation  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge792 Solving a word problem with three unknowns using a linear equation  
 alge842 Solving a word problem involving consecutive integers  
 alge794 Solving a value mixture problem using a linear equation  
 alge795 Solving a percent mixture problem using a linear equation  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 alge218 Solving a word problem involving rates and time conversion  
 alge796 Solving a distance, rate, time problem using a linear equation  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom530 Solving equations involving vertical angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 stat803 Finding the value for a new score that will yield a given mean  
 arith663 Writing ratios for real-world situations  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 alge840 Solving a proportion of the form  $(x+a) \div b = c \div d$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 arith064 Solving a word problem on proportions using a unit rate  
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 arith226 Converting between percentages and decimals  
 arith090 Converting a percentage to a fraction in simplest form  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith069 Writing a ratio as a percentage without a calculator  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith698 Applying the percent equation  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith031 Finding the original price given the sale price and percent discount  
 arith225 Finding the percentage increase or decrease: Advanced  
 arith232 Finding simple interest without a calculator  
 unit005 U.S. Customary unit conversion with whole number values  
 unit001 Metric distance conversion with whole number values  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 unit052 Finding the absolute error and percent error of a measurement  
 alge864 Solving an absolute value equation: Problem type 1  
 alge865 Solving an absolute value equation: Problem type 2  
 alge866 Solving an absolute value equation: Problem type 3  
 alge867 Solving an absolute value equation: Problem type 4

### Linear Inequalities

alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality

alge846 Translating a sentence into a multi-step inequality  
 alge748 Writing an inequality for a real-world situation  
 alge729 Writing a multi-step inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge860 Solving inequalities with no solution or all real numbers as solutions  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge861 Solving a compound linear inequality: Graph solution, advanced  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
 alge943 Writing an absolute value inequality given a graph on the number line  
 alge868 Solving an absolute value inequality: Problem type 1  
 alge869 Solving an absolute value inequality: Problem type 2  
 alge870 Solving an absolute value inequality: Problem type 3  
 alge871 Solving an absolute value inequality: Problem type 4  
 alge872 Solving an absolute value inequality: Problem type 5

## Functions and Lines

set001 Set builder notation  
 set002 Union and intersection of finite sets  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 fun016 Domain and range from ordered pairs  
 alge896 Graphing an integer function and finding its range for a given domain  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 pcalc761 Finding inputs and outputs of a function from its graph  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 pcalc752 Finding local maxima and minima of a function given the graph  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 alge716 Introduction to the composition of two functions  
 fun012 Inverse functions: Linear, discrete  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge873 Identifying solutions to a linear equation in two variables  
 alge850 Table for a linear equation  
 alge066 Finding a solution to a linear equation in two variables  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form

alge197 Graphing a line given its x- and y-intercepts  
alge881 Graphing a line by first finding its x- and y-intercepts  
alge196 Graphing a line through a given point with a given slope  
alge882 Graphing a line by first finding its slope and y-intercept  
alge883 Graphing a line given its equation in point-slope form  
alge198 Graphing a vertical or horizontal line  
alge876 Identifying linear equations: Advanced  
alge874 Identifying linear functions given ordered pairs  
alge891 Rewriting a linear equation in the form  $Ax + By = C$   
alge884 Finding x- and y-intercepts given the graph of a line on a grid  
alge924 Finding x- and y-intercepts of a line given the equation: Basic  
alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
alge875 Classifying slopes given graphs of lines  
alge886 Finding slope given the graph of a line on a grid  
alge887 Finding slope given two points on the line  
alge885 Finding the slope of horizontal and vertical lines  
alge888 Finding the coordinate that yields a given slope  
alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
alge892 Writing an equation and graphing a line given its slope and y-intercept  
alge070 Writing an equation of a line given the y-intercept and another point  
alge893 Writing an equation in slope-intercept form given the slope and a point  
alge894 Writing an equation in point-slope form given the slope and a point  
alge072 Writing the equation of the line through two given points  
alge073 Writing the equations of vertical and horizontal lines through a given point  
alge897 Writing and evaluating a function that models a real-world situation: Advanced  
alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
mstat052 Identifying independent and dependent variables from equations or real-world situations  
alge990 Domain and range of a linear function that models a real-world situation  
alge989 Interpreting the parameters of a linear function that models a real-world situation  
alge992 Combining functions to write a new function that models a real-world situation  
alge987 Comparing properties of linear functions given in different forms  
alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
alge806 Application problem with a linear function: Finding a coordinate given two points  
alge895 Identifying parallel and perpendicular lines from equations  
geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
alge991 Solving a linear equation by graphing  
mstat051 Choosing a graph to fit a narrative: Advanced  
alge828 Interpreting direct variation from a graph  
alge982 Identifying direct variation equations  
alge938 Identifying direct variation from ordered pairs and writing equations  
alge904 Writing a direct variation equation  
alge175 Word problem on direct variation  
alge925 Finding the next terms of an arithmetic sequence with whole numbers  
alge906 Finding the next terms of an arithmetic sequence with integers  
alge979 Identifying arithmetic sequences and finding the common difference  
alge931 Finding a specified term of an arithmetic sequence given the first terms  
pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
alge909 Writing an explicit rule for an arithmetic sequence  
alge908 Finding the first terms of a sequence using a recursive rule  
alge910 Writing a recursive rule for an arithmetic sequence  
mstat023 Scatter plots and correlation  
mstat030 Sketching the line of best fit  
mstat068 Predictions from the line of best fit  
mstat067 Approximating the equation of a line of best fit and making predictions  
mstat069 Computing residuals  
mstat070 Interpreting residual plots  
mstat071 Linear relationship and the correlation coefficient  
mstat074 Identifying correlation and causation  
alge898 Translating the graph of an absolute value function: One step  
alge899 Translating the graph of an absolute value function: Two steps

alge913 Graphing an absolute value equation of the form  $y = A|x - h| + k$   
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge901 How the leading coefficient affects the graph of an absolute value function  
 alge954 Graphing a parabola of the form  $y = ax^2 + bx + c$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge262 Graphing a cubic function of the form  $y = ax^3 + bx^2 + cx + d$   
 fun030 Evaluating a piecewise-defined function  
 fun031 Graphing a piecewise-defined function: Problem type 1

### Systems

alge914 Identifying solutions to a system of linear equations  
 alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations  
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge916 Solving a system of linear equations with fractional coefficients  
 alge917 Solving a system of linear equations with decimal coefficients  
 alge752 Solving a 2x2 system of linear equations that is inconsistent or consistent dependent  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 alge988 Identifying the operations used to create equivalent systems of equations  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced  
 alge922 Graphing a system of three linear inequalities  
 pcalc093 Solving a word problem using a system of linear inequalities: Problem type 1  
 pcalc037 Scalar multiplication of a matrix  
 pcalc038 Addition or subtraction of matrices  
 pcalc740 Linear combination of matrices  
 pcalc712 Gauss-Jordan elimination with a 2x2 matrix

### Exponents

alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith029 Ordering numbers with positive exponents  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge030 Product rule with positive exponents: Multivariate  
 alge961 Introduction to the product rule with negative exponents



alge028 Product rule with negative exponents  
 alge827 Introduction to the quotient rule of exponents  
 alge026 Quotient of expressions involving exponents  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge926 Quotient rule with negative exponents: Problem type 2  
 alge826 Understanding the power rules of exponents  
 alge754 Introduction to the power rules of exponents  
 alge027 Power rules with positive exponents  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge756 Power and product rules with positive exponents  
 alge927 Power and quotient rules with positive exponents  
 alge928 Power and quotient rules with negative exponents: Problem type 1  
 alge929 Power and quotient rules with negative exponents: Problem type 2  
 alge757 Power, product, and quotient rules with negative exponents  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent  
 scinot002 Multiplying and dividing numbers written in scientific notation  
 alge812 Converting between radical form and exponent form  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge249 Rational exponents: Powers of powers with negative exponents  
 alge971 Table for an exponential function  
 alge830 Evaluating an exponential function that models a real-world situation  
 alge966 Finding the initial amount and rate of change given an exponential function  
 alge968 Writing an equation that models exponential growth or decay  
 alge967 Writing an exponential function rule given a table of ordered pairs  
 alge301 Solving an exponential equation by finding common bases: Linear exponents  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest  
 alge969 Graphing an exponential function:  $f(x) = ax$   
 alge970 Graphing an exponential function:  $f(x) = a(b)^x$   
 alge993 Comparing linear, polynomial, and exponential functions  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge911 Writing recursive rules for arithmetic and geometric sequences

### Polynomials and Factoring

alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge932 Simplifying a sum or difference of multivariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge081 Multiplying conjugate binomials: Multivariate  
 alge032 Squaring a binomial: Univariate  
 alge068 Squaring a binomial: Multivariate

alge973 Multiplying binomials with negative coefficients  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge759 Dividing a polynomial by a monomial: Univariate  
 alge760 Dividing a polynomial by a monomial: Multivariate  
 alge761 Polynomial long division: Problem type 1  
 alge762 Polynomial long division: Problem type 2  
 alge763 Polynomial long division: Problem type 3  
 alge985 Closure properties of integers and polynomials  
 alge736 Introduction to the GCF of two monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge930 Greatest common factor of three univariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge949 Factoring out a binomial from a polynomial: GCF factoring, basic  
 alge923 Factoring a univariate polynomial by grouping: Problem type 1  
 alge950 Factoring a univariate polynomial by grouping: Problem type 2  
 alge951 Factoring a multivariate polynomial by grouping: Problem type 1  
 alge952 Factoring a multivariate polynomial by grouping: Problem type 2  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge942 Factoring a quadratic in two variables with leading coefficient 1  
 alge936 Factoring out a constant before factoring a quadratic  
 alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1  
 alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
 alge941 Factoring a quadratic with leading coefficient greater than 1: Problem type 3  
 alge978 Factoring a quadratic by the ac-method  
 alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
 alge937 Factoring a quadratic with a negative leading coefficient  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge945 Factoring a perfect square trinomial with leading coefficient greater than 1  
 alge946 Factoring a perfect square trinomial in two variables  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge839 Factoring a difference of squares in two variables  
 alge948 Factoring a polynomial involving a GCF and a difference of squares: Univariate  
 alge833 Factoring a polynomial involving a GCF and a difference of squares: Multivariate  
 alge042 Factoring with repeated use of the difference of squares formula  
 alge044 Factoring a sum or difference of two cubes  
 alge681 Solving an equation written in factored form  
 alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge703 Solving a word problem using a quadratic equation with rational roots

### Quadratic Functions and Equations

alge974 Finding the vertex, x-intercepts, and axis of symmetry from the graph of a parabola  
 alge277 Finding the x-intercept(s) and the vertex of a parabola  
 pcalc774 Rewriting a quadratic function to find the vertex of its graph  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge975 Domain and range from the graph of a parabola  
 alge976 Range of a quadratic function  
 alge996 Comparing properties of quadratic functions given in different forms  
 alge953 Translating the graph of a parabola: One step  
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients

alge702 Classifying the graph of a function  
 alge965 Identifying linear, quadratic, and exponential functions given ordered pairs  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge185 Writing an equation for a function after a vertical translation  
 fun020 Writing an equation for a function after a vertical and horizontal translation  
 pcalc748 Graphing a quadratic inequality: Problem type 1  
 pcalc749 Graphing a quadratic inequality: Problem type 2  
 alge957 Solving a quadratic equation by graphing  
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 alge958 Solving a quadratic equation using the square root property: Decimal answers, basic  
 alge959 Solving a quadratic equation using the square root property: Decimal answers, advanced  
 alge094 Completing the square  
 alge960 Solving a quadratic equation by completing the square: Decimal answers  
 alge963 Applying the quadratic formula: Decimal answers  
 alge095 Applying the quadratic formula: Exact answers  
 alge214 Discriminant of a quadratic equation  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge994 Graphically solving a system of linear and quadratic equations  
 alge995 Solving a system of linear and quadratic equations  
 alge997 Finding the average rate of change of a function given its equation  
 alge998 Finding the average rate of change of a function given its graph

### Radicals

alge213 Domain of a square root function  
 pcalc781 Graphing a square root function  
 arith016 Square root of a perfect square  
 arith602 Estimating a square root  
 arith601 Square root of a rational perfect square  
 arith094 Cube root of an integer  
 arith093 Simplifying the square root of a whole number less than 100  
 alge264 Square root of a perfect square monomial  
 alge080 Simplifying a radical expression with an even exponent  
 alge275 Simplifying a radical expression with two variables  
 alge273 Simplifying a higher root of a whole number  
 alge811 Simplifying a higher radical expression: Multivariate  
 arith032 Square root addition or subtraction  
 alge084 Simplifying a sum or difference of radical expressions: Multivariate  
 arith039 Square root multiplication: Advanced  
 alge640 Simplifying a product of radical expressions: Multivariate  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge086 Rationalizing the denominator of a radical expression  
 alge088 Rationalizing the denominator of a radical expression using conjugates  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge091 Solving a radical equation that simplifies to a quadratic equation: One radical  
 geom044 Pythagorean Theorem  
 alge132 Distance between two points in the plane: Exact answers  
 alge191 Midpoint of a line segment in the plane  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc642 Solving a right triangle

### Rational Expressions

alge049 Restriction on a variable in a denominator: Linear  
 alge715 Domain of a rational function: Excluded values  
 alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2  
 alge034 Simplifying a ratio of multivariate polynomials  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge057 Adding rational expressions with different denominators:  $ax$ ,  $bx$   
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge622 Adding rational expressions with different denominators:  $x+a$ ,  $x+b$   
 alge661 Adding rational expressions involving different quadratic denominators  
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 alge058 Complex fraction involving multivariate monomials  
 alge767 Complex fraction: GCF and quadratic factoring  
 alge768 Complex fraction made of sums involving rational expressions  
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced  
 arith612 Word problem involving multiple rates  
 alge770 Solving a work problem using a rational equation  
 alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
 alge903 Identifying direct and inverse variation equations  
 alge905 Writing an inverse variation equation  
 alge176 Word problem on inverse variation  
 alge220 Word problem on inverse proportions  
 pcalc789 Finding the asymptotes of a rational function: Basic  
 pcalc108 Graphing a rational function: Constant or linear over linear

### Data Analysis and Probability

mstat037 Constructing a line plot  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat007 Interpreting a line graph  
 stat804 Interpreting a circle graph or pie chart  
 stat801 Computations from a circle graph  
 geom814 Angle measure in a circle graph  
 mstat031 Interpreting a stem-and-leaf plot  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat001 Mean of a data set  
 mstat028 Mean and median of a data set  
 mstat066 Weighted mean  
 mstat029 How changing a value affects the mean and median  
 mstat053 Choosing the best measure to describe data  
 stat802 Rejecting unreasonable claims based on average statistics

mstat025 Finding if a question can be answered by the data  
 mstat049 Computing a percentage from a table of values  
 stat020 Calculating relative frequencies in a contingency table  
 stat805 Making a reasonable inference based on proportion statistics  
 stat009 Percentiles  
 mstat072 Five-number summary and interquartile range  
 stat021 Population standard deviation  
 mstat042 Interpreting a Venn diagram of 2 sets  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 stat790 Permutations, combinations, and the multiplication principle for counting  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat032 Probability of the union of two events

## B.63 Prep. for SC HSAP Mathematics

### Arithmetic Readiness

arith123 Rounding to hundreds or thousands  
 arith233 Introduction to exponents  
 arith692 Writing expressions using exponents  
 arith683 Power of 10: Positive exponent  
 arith048 Order of operations with whole numbers  
 arith051 Order of operations with whole numbers and grouping symbols  
 arith693 Order of operations with whole numbers and exponents: Basic  
 alge731 Evaluating an algebraic expression: Whole numbers with two operations  
 arith658 Filling in missing operations to make an equation  
 arith056 Factors  
 arith034 Prime numbers  
 arith035 Prime factorization  
 arith033 Greatest common factor of 2 numbers  
 arith070 Least common multiple of 2 numbers  
 arith212 Equivalent fractions  
 arith067 Simplifying a fraction  
 arith092 Using a common denominator to order fractions  
 arith618 Addition or subtraction of fractions with the same denominator  
 arith801 Finding the LCD of two fractions  
 arith664 Introduction to addition or subtraction of fractions with different denominators  
 arith230 Addition or subtraction of fractions with different denominators  
 arith079 Product of a unit fraction and a whole number  
 arith086 Product of a fraction and a whole number: Problem type 1  
 arith119 Introduction to fraction multiplication  
 arith053 Fraction multiplication

arith088 The reciprocal of a number  
 arith694 Division involving a whole number and a fraction  
 arith022 Fraction division  
 arith697 Mixed arithmetic operations with fractions  
 arith015 Writing an improper fraction as a mixed number  
 arith619 Writing a mixed number as an improper fraction  
 arith084 Addition of mixed numbers with the same denominator and carry  
 arith216 Subtraction of mixed numbers with the same denominator and borrowing  
 arith020 Mixed number multiplication: Problem type 1  
 arith068 Mixed number division  
 arith110 Decimal place value: Tenths and hundredths  
 arith220 Decimal place value: Hundreds to ten thousandths  
 arith221 Rounding decimals  
 arith608 Ordering decimals  
 arith609 Ordering fractions and decimals  
 arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
 arith222 Converting a fraction to a terminating decimal  
 arith089 Converting a fraction to a repeating decimal  
 arith013 Decimal addition with 3 numbers  
 arith625 Subtraction of aligned decimals  
 arith626 Word problem with one decimal operation: Problem type 1  
 arith627 Word problem with one decimal operation: Problem type 2  
 arith017 Multiplication of a decimal by a whole number  
 arith082 Multiplication of a decimal by a power of ten  
 arith055 Decimal multiplication: Problem type 1  
 arith081 Division of a decimal by a whole number  
 arith083 Division of a decimal by a power of ten  
 mstat034 Measuring length to the nearest quarter or half inch  
 mstat035 Conversions involving measurements in feet and inches  
 mstat036 Adding measurements in feet and inches  
 unit005 U.S. Customary unit conversion with whole number values  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 unit009 U.S. Customary area unit conversion with whole number values  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 mstat065 Converting between temperatures in Fahrenheit and Celsius

### Real Numbers

alge001 Identifying numbers as integers or non-integers  
 alge002 Identifying numbers as rational or irrational  
 arith699 Writing a signed number for a real-world situation  
 mstat038 Reading the temperature from a thermometer  
 alge286 Plotting integers on a number line  
 arith691 Ordering integers  
 arith687 Fractional position on a number line  
 arith605 Plotting rational numbers on a number line  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith701 Word problem with addition or subtraction of integers  
 arith116 Signed fraction addition or subtraction: Basic



arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers  
 arith822 Signed fraction multiplication: Basic  
 arith118 Order of operations with integers  
 arith702 Exponents and integers: Problem type 1  
 arith703 Exponents and integers: Problem type 2  
 arith704 Exponents and signed fractions  
 arith600 Order of operations with integers and exponents  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 arith071 Absolute value of a number  
 arith104 Operations with absolute value: Problem type 2  
 alge187 Properties of addition  
 alge188 Properties of real numbers  
 arith657 Understanding the distributive property  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 alge663 Combining like terms: Advanced  
 alge293 Combining like terms in a quadratic expression

### Linear Equations and Inequalities

alge009 Additive property of equality with whole numbers  
 alge800 Additive property of equality with decimals  
 alge010 Additive property of equality with integers  
 alge266 Additive property of equality with a negative coefficient  
 alge008 Multiplicative property of equality with whole numbers  
 alge820 Multiplicative property of equality with fractions  
 alge825 Multiplicative property of equality with decimals  
 alge740 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge803 Using two steps to solve an equation with whole numbers  
 alge006 Solving a two-step equation with integers  
 alge208 Solving a two-step equation with signed fractions  
 alge824 Solving a two-step equation with signed decimals  
 alge200 Solving an equation to find the value of an expression  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge810 Introduction to algebraic symbol manipulation  
 alge743 Algebraic symbol manipulation: Problem type 1  
 alge744 Algebraic symbol manipulation: Problem type 2  
 alge733 Writing a one-step expression for a real-world situation  
 alge602 Writing a one-step variable expression for a real-world situation  
 alge291 Translating a phrase into a two-step expression  
 alge016 Translating a sentence into a one-step equation  
 alge730 Writing a multi-step equation for a real-world situation  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$

alge014 Solving a word problem with two unknowns using a linear equation  
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge794 Solving a value mixture problem using a linear equation  
 alge795 Solving a percent mixture problem using a linear equation  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 alge218 Solving a word problem involving rates and time conversion  
 alge796 Solving a distance, rate, time problem using a linear equation  
 arith663 Writing ratios for real-world situations  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 arith064 Solving a word problem on proportions using a unit rate  
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 arith226 Converting between percentages and decimals  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith090 Converting a percentage to a fraction in simplest form  
 arith069 Writing a ratio as a percentage without a calculator  
 mstat049 Computing a percentage from a table of values  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith698 Applying the percent equation  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith031 Finding the original price given the sale price and percent discount  
 arith225 Finding the percentage increase or decrease: Advanced  
 arith232 Finding simple interest without a calculator  
 alge015 Translating a sentence by using an inequality symbol  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge019 Solving a linear inequality: Problem type 1  
 alge020 Solving a linear inequality: Problem type 2  
 alge021 Solving a linear inequality: Problem type 3  
 alge207 Solving a linear inequality: Problem type 4  
 alge745 Solving a linear inequality: Problem type 5  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge748 Writing an inequality for a real-world situation  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
 alge270 Solving an absolute value equation of the form  $a-x = b$  or  $-x+a = b$   
 alge103 Solving an absolute value equation of the form  $-ax+b = c$   
 alge170 Solving an absolute value inequality: Basic

### Lines and Systems of Linear Equations

alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge850 Table for a linear equation  
 alge066 Finding a solution to a linear equation in two variables  
 alge216 Determining whether given points lie on one, both, or neither of 2 lines given equations  
 alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
 alge194 Graphing a line given its equation in slope-intercept form  
 alge195 Graphing a line given its equation in standard form  
 alge196 Graphing a line through a given point with a given slope  
 alge198 Graphing a vertical or horizontal line  
 alge069 Finding the  $y$ -intercept of a line given its equation  
 alge210 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Advanced  
 alge684 Finding slope given the graph of a line on a grid

alge685 Finding slope given two points on the line  
 alge631 Finding the slope of a line given its equation  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge071 Writing the equation of a line given the slope and a point on the line  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations  
 alge751 Solving a system of linear equations using substitution  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge752 Solving a 2x2 system of linear equations that is inconsistent or consistent dependent  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge184 Solving a value mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 alge079 Graphing a system of two linear inequalities: Basic  
 pcalc037 Scalar multiplication of a matrix  
 pcalc038 Addition or subtraction of matrices  
 pcalc740 Linear combination of matrices

### Exponents, Polynomials, and Quadratics

alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge030 Product rule with positive exponents: Multivariate  
 alge028 Product rule with negative exponents  
 alge827 Introduction to the quotient rule of exponents  
 alge026 Quotient of expressions involving exponents  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge826 Understanding the power rules of exponents  
 alge754 Introduction to the power rules of exponents  
 alge027 Power rules with positive exponents  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge756 Power and product rules with positive exponents  
 arith029 Ordering numbers with positive exponents  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent  
 scinot002 Multiplying and dividing numbers written in scientific notation  
 alge758 Degree and leading coefficient of a univariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials

alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge764 Multiplying conjugate binomials: Univariate  
 alge765 Multiplying binomials in two variables  
 alge032 Squaring a binomial: Univariate  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge759 Dividing a polynomial by a monomial: Univariate  
 alge760 Dividing a polynomial by a monomial: Multivariate  
 alge761 Polynomial long division: Problem type 1  
 alge762 Polynomial long division: Problem type 2  
 alge736 Introduction to the GCF of two monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge043 Factoring a perfect square trinomial  
 alge040 Factoring a quadratic with leading coefficient greater than 1  
 alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge624 Factoring a difference of squares  
 alge038 Factoring a polynomial by grouping: Problem type 1  
 alge181 Factoring a polynomial by grouping: Problem type 2  
 alge681 Solving an equation written in factored form  
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
 alge227 Solving a quadratic equation using the square root property: Exact answers, advanced  
 alge094 Completing the square  
 alge780 Solving a quadratic equation by completing the square: Exact answers  
 alge095 Applying the quadratic formula: Exact answers  
 alge214 Discriminant of a quadratic equation  
 alge703 Solving a word problem using a quadratic equation with rational roots  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge277 Finding the x-intercept(s) and the vertex of a parabola  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge252 Graphing a parabola of the form  $y = ax^2$   
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 alge702 Classifying the graph of a function  
 alge723 How the leading coefficient affects the shape of a parabola

## Functions and Sequences

set004 Set builder and interval notation  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun016 Domain and range from ordered pairs  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 pcalc768 Finding the average rate of change of a function  
 fun019 Sum, difference, and product of two functions  
 fun022 Composition of two functions: Basic  
 fun002 Graphing integer functions

pcalc761 Finding inputs and outputs of a function from its graph  
 pcalc750 Finding intercepts of a nonlinear function given its graph  
 pcalc751 Finding where a function is increasing, decreasing, or constant given the graph: Interval notation  
 pcalc752 Finding local maxima and minima of a function given the graph  
 fun024 Domain and range from the graph of a continuous function  
 pcalc114 Even and odd functions: Problem type 1  
 alge185 Writing an equation for a function after a vertical translation  
 fun020 Writing an equation for a function after a vertical and horizontal translation  
 pcalc769 Translating the graph of a function: One step  
 pcalc770 Translating the graph of a function: Two steps  
 pcalc771 Transforming the graph of a function by reflecting over an axis  
 pcalc772 Transforming the graph of a function by shrinking or stretching  
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge712 Graphing an exponential function and its asymptote:  $f(x) = a(b)^x$   
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge807 Finding the next terms of a sequence with whole numbers  
 alge732 Finding patterns in shapes  
 pcalc080 Finding the first terms of a sequence using an explicit rule with multiple occurrences of  $n$   
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest

### Radical Expressions

alge213 Domain of a square root function  
 pcalc781 Graphing a square root function  
 arith016 Square root of a perfect square  
 arith602 Estimating a square root  
 arith601 Square root of a rational perfect square  
 arith094 Cube root of an integer  
 arith093 Simplifying the square root of a whole number less than 100  
 alge264 Square root of a perfect square monomial  
 alge080 Simplifying a radical expression with an even exponent  
 alge275 Simplifying a radical expression with two variables  
 arith032 Square root addition or subtraction  
 arith039 Square root multiplication: Advanced  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge086 Rationalizing the denominator of a radical expression  
 alge088 Rationalizing the denominator of a radical expression using conjugates  
 alge812 Converting between radical form and exponent form  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge249 Rational exponents: Powers of powers with negative exponents  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge091 Solving a radical equation that simplifies to a quadratic equation: One radical  
 alge182 Solving a radical equation that simplifies to a quadratic equation: Two radicals

### Rational Expressions

alge715 Domain of a rational function: Excluded values  
 alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2

alge053 Multiplying rational expressions involving multivariate monomials  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge057 Adding rational expressions with different denominators:  $ax$ ,  $bx$   
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge622 Adding rational expressions with different denominators:  $x+a$ ,  $x+b$   
 alge661 Adding rational expressions involving different quadratic denominators  
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 alge058 Complex fraction involving multivariate monomials  
 alge767 Complex fraction: GCF and quadratic factoring  
 alge768 Complex fraction made of sums involving rational expressions  
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 arith612 Word problem involving multiple rates  
 alge770 Solving a work problem using a rational equation  
 alge220 Word problem on inverse proportions  
 pcalc681 Writing an equation that models variation  
 alge175 Word problem on direct variation  
 alge176 Word problem on inverse variation  
 alge772 Word problem on combined variation  
 pcalc789 Finding the asymptotes of a rational function: Basic  
 pcalc108 Graphing a rational function: Constant or linear over linear

### Perimeter, Area, and Volume

geom339 Perimeter of a polygon  
 geom300 Perimeter of a square or a rectangle  
 geom221 Finding the missing length in a figure  
 geom353 Perimeter of a piecewise rectangular figure  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom078 Sides of polygons having the same perimeter  
 geom019 Area of a square or a rectangle  
 geom350 Distinguishing between the area and perimeter of a rectangle  
 geom351 Areas of rectangles with the same perimeter  
 geom340 Area of a piecewise rectangular figure  
 geom142 Word problem involving the area between two rectangles  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom801 Area of a triangle  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom344 Area involving rectangles and triangles  
 geom213 Area of a regular polygon  
 geom832 Area of quadrilaterals in the coordinate plane  
 alge724 Finding an area in terms of variables  
 geom016 Circumference of a circle  
 geom218 Finding the radius or the diameter of a circle given its circumference  
 geom301 Perimeter involving rectangles and circles  
 geom838 Circumference ratios  
 geom802 Circumference and area of a circle  
 geom302 Area involving rectangles and circles



geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom805 Arc length and area of a sector of a circle  
 geom830 Counting the cubes in a solid made of cubes  
 geom354 Volume of a rectangular prism made of unit cubes  
 geom311 Volume of a rectangular prism  
 geom505 Volume of a piecewise rectangular prism  
 geom090 Volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom035 Volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom841 Volume of a sphere  
 geom219 Nets of solids  
 geom861 Nets of solids: Advanced  
 geom348 Vertices, edges, and faces of a solid  
 geom816 Side views of a solid made of cubes  
 geom031 Surface area of a cube or a rectangular prism  
 geom091 Surface area of a triangular prism  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom842 Surface area of a sphere  
 geom345 Surface area of a piecewise rectangular prism made of unit cubes  
 geom338 Surface area involving prisms or cylinders

### Lines, Angles, and Triangles

mstat042 Interpreting a Venn diagram of 2 sets  
 mstat043 Interpreting a Venn diagram of 3 sets  
 glogic001 Conditional statements and negations  
 glogic005 The converse, inverse, and contrapositive of a conditional statement  
 glogic008 Conditional statements and deductive reasoning  
 geom349 Naming segments, rays, and lines  
 geom525 Computing distances between decimals on the number line  
 geom526 Midpoint of a number line segment  
 geom521 Segment addition and midpoints  
 geom616 Introduction to proofs: Justifying statements  
 geom614 Proofs involving segment congruence  
 geom358 Identifying parallel and perpendicular lines  
 geom835 Introduction to proofs involving parallel lines  
 geom836 Proofs involving parallel lines  
 geom154 Constructing the perpendicular bisector of a line segment  
 geom150 Constructing a pair of perpendicular lines  
 geom157 Constructing a pair of parallel lines  
 geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom304 Identifying corresponding and alternate angles  
 geom305 Identifying supplementary and vertical angles  
 geom530 Solving equations involving vertical angles  
 geom531 Solving equations involving angles and a pair of parallel lines  
 geom850 Angle addition with relationships between angles  
 geom851 Angle addition and angle bisectors  
 geom611 Proofs involving angle congruence  
 geom159 Constructing congruent angles  
 geom158 Constructing an angle bisector  
 geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom812 Finding an angle measure given extended triangles

geom813 Finding an angle measure given a triangle and parallel lines  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom309 Finding an angle measure for a triangle sharing a side with another triangle  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 geom844 Using triangle inequality to determine if side lengths form a triangle  
 geom845 Using triangle inequality to determine possible lengths of a third side  
 geom854 Relationship between angle measures and side lengths in a triangle  
 geom855 Relationship between angle measures and side lengths in two triangles  
 geom044 Pythagorean Theorem  
 geom068 Computing an area using the Pythagorean Theorem  
 geom862 Using the Pythagorean Theorem repeatedly  
 geom506 Special right triangles: Exact answers  
 geom212 Circles inscribed in and circumscribed about regular polygons  
 geom520 Identifying and naming congruent triangles  
 geom617 Proofs involving congruent triangles and vertical angles or the reflexive property  
 geom837 Proofs involving congruent triangles and segment or angle bisectors  
 geom840 Proofs involving congruent triangles that overlap: Basic  
 geom839 Proofs involving congruent triangles, parallel or perpendicular segments, and CPCTC  
 geom843 Proofs involving congruent triangles that overlap: Advanced  
 geom650 Indirect proof (proof by contradiction)  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc031 Solving a triangle with the law of sines: Problem type 1  
 pcalc032 Solving a triangle with the law of sines: Problem type 2  
 pcalc033 Solving a triangle with the law of cosines  
 pcalc060 Magnitude of a vector given in component form  
 pcalc063 Translation of a vector  
 geom858 Scalar multiplication of a vector: Geometric Approach  
 geom857 Vector addition: Geometric approach  
 geom856 Vector addition and scalar multiplication: Component form  
 vector008 Linear combination of vectors: Component form  
 vector002 Finding the magnitude and direction of a vector given its graph  
 vector005 Finding the components of a vector given its graph

### Polygons, Circles, and Similarity

alge191 Midpoint of a line segment in the plane  
 alge132 Distance between two points in the plane: Exact answers  
 geom310 Properties of quadrilaterals  
 geom523 Conditions for quadrilaterals  
 geom532 Classifying parallelograms  
 geom528 Finding measures involving diagonals of parallelograms  
 geom527 Conditions for parallelograms  
 geom833 Finding measures involving diagonals of rectangles  
 geom834 Finding measures involving diagonals of rhombi  
 geom870 Sum of the angle measures of a quadrilateral  
 geom852 The sum of interior angle measures in a convex polygon  
 geom853 Interior and exterior angle measures in a regular polygon  
 geom819 Finding coordinates of vertices of polygons  
 geom818 Finding the coordinates of a point to make a parallelogram  
 geom863 Congruence in the coordinate plane  
 geom347 Introduction to a circle: Diameter, radius, and chord  
 geom343 Identifying central angles, inscribed angles, arcs, chords, and tangents of a circle  
 geom848 Tangents of a circle: Problem type 1  
 geom849 Tangents of a circle: Problem type 2  
 geom511 Lengths of chords, secants, and tangents

geom514 Inscribed angles of a circle  
 geom512 Central angles and inscribed angles of a circle  
 geom513 Angles of intersecting secants and tangents  
 pcalc605 Graphing a circle given its equation in standard form  
 pcalc065 Writing an equation of a circle given its center and a point on the circle  
 pcalc066 Writing an equation of a circle given the endpoints of a diameter  
 geom359 Identifying congruent shapes on a grid  
 geom360 Identifying similar or congruent shapes on a grid  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom510 Triangles and parallel lines  
 geom507 Right triangles and geometric mean  
 geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids  
 geom847 Similar solids: Problem type 2  
 geom357 Identifying transformations  
 geom330 Translating a polygon  
 geom331 Using a translated point to find coordinates of other translated points  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom333 Finding the coordinates of three points reflected over an axis  
 geom334 Drawing lines of symmetry  
 geom335 Rotating a figure about the origin  
 geom815 Finding an angle of rotation  
 geom831 Rotational and point symmetries  
 geom336 Dilating a figure

### Statistics and Probability

mstat004 Constructing a histogram for numerical data  
 mstat005 Constructing a bar graph for non-numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat007 Interpreting a line graph  
 stat804 Interpreting a circle graph or pie chart  
 stat801 Computations from a circle graph  
 mstat006 Constructing a box-and-whisker plot  
 mstat031 Interpreting a stem-and-leaf plot  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 geom814 Angle measure in a circle graph  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat001 Mean of a data set  
 mstat028 Mean and median of a data set  
 stat803 Finding the value for a new score that will yield a given mean  
 mstat029 How changing a value affects the mean and median  
 mstat053 Choosing the best measure to describe data  
 mstat066 Weighted mean  
 mstat025 Finding if a question can be answered by the data  
 stat802 Rejecting unreasonable claims based on average statistics  
 stat805 Making a reasonable inference based on proportion statistics  
 stat021 Population standard deviation  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 stat790 Permutations, combinations, and the multiplication principle for counting  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat048 Odds of an event

stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat032 Probability of the union of two events

## B.64 TX Algebra 1

### Arithmetic Readiness

arith078 Rounding to tens or hundreds  
 arith123 Rounding to hundreds or thousands  
 arith101 Estimating a sum of whole numbers  
 arith233 Introduction to exponents  
 arith692 Writing expressions using exponents  
 arith683 Power of 10: Positive exponent  
 arith048 Order of operations with whole numbers  
 arith051 Order of operations with whole numbers and grouping symbols  
 arith693 Order of operations with whole numbers and exponents: Basic  
 arith713 Order of operations with whole numbers and exponents: Advanced  
 alge731 Evaluating an algebraic expression: Whole numbers with two operations  
 alge832 Evaluating an algebraic expression: Whole number operations and exponents  
 arith056 Factors  
 arith034 Prime numbers  
 arith035 Prime factorization  
 arith033 Greatest common factor of 2 numbers  
 arith070 Least common multiple of 2 numbers  
 arith240 Word problem with common multiples  
 arith064 Solving a word problem on proportions using a unit rate  
 arith212 Equivalent fractions  
 arith067 Simplifying a fraction  
 arith618 Addition or subtraction of fractions with the same denominator  
 arith801 Finding the LCD of two fractions  
 arith664 Introduction to addition or subtraction of fractions with different denominators  
 arith230 Addition or subtraction of fractions with different denominators  
 arith100 Fractional part of a circle  
 arith079 Product of a unit fraction and a whole number  
 arith086 Product of a fraction and a whole number: Problem type 1  
 arith119 Introduction to fraction multiplication  
 arith053 Fraction multiplication  
 arith095 Multi-step word problem involving fractions and multiplication  
 arith088 The reciprocal of a number  
 arith694 Division involving a whole number and a fraction  
 arith022 Fraction division  
 arith859 Order of operations with fractions: Problem type 1  
 arith860 Order of operations with fractions: Problem type 2  
 arith821 Exponents and fractions  
 arith015 Writing an improper fraction as a mixed number  
 arith619 Writing a mixed number as an improper fraction  
 arith084 Addition of mixed numbers with the same denominator and carry  
 arith216 Subtraction of mixed numbers with the same denominator and borrowing  
 arith085 Addition or subtraction of mixed numbers with different denominators  
 arith020 Mixed number multiplication: Problem type 1  
 arith068 Mixed number division  
 arith110 Decimal place value: Tenths and hundredths

arith221 Rounding decimals  
arith129 Introduction to ordering decimals  
arith624 Addition of aligned decimals  
arith625 Subtraction of aligned decimals  
arith131 Estimating a decimal sum or difference  
arith626 Word problem with one decimal operation: Problem type 1  
arith627 Word problem with one decimal operation: Problem type 2  
arith017 Multiplication of a decimal by a whole number  
arith055 Decimal multiplication: Problem type 1  
arith082 Multiplication of a decimal by a power of ten  
arith628 Word problem with multiple decimal operations: Problem type 1  
arith081 Division of a decimal by a whole number  
arith019 Division of a decimal by a 2-digit decimal  
arith083 Division of a decimal by a power of ten  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith222 Converting a fraction to a terminating decimal  
arith089 Converting a fraction to a repeating decimal  
arith226 Converting between percentages and decimals  
arith090 Converting a percentage to a fraction in simplest form  
arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
arith069 Writing a ratio as a percentage without a calculator  
geom339 Perimeter of a polygon  
geom300 Perimeter of a square or a rectangle  
geom019 Area of a square or a rectangle  
geom221 Finding the missing length in a figure  
geom340 Area of a piecewise rectangular figure  
geom142 Word problem involving the area between two rectangles  
geom801 Area of a triangle  
geom022 Area of a parallelogram  
geom023 Area of a trapezoid  
geom016 Circumference of a circle  
geom301 Perimeter involving rectangles and circles  
geom802 Circumference and area of a circle  
geom302 Area involving rectangles and circles  
geom036 Word problem involving the area between two concentric circles  
geom214 Area involving inscribed figures  
geom031 Surface area of a cube or a rectangular prism  
geom091 Surface area of a triangular prism  
geom621 Surface area of a cylinder  
geom842 Surface area of a sphere  
geom311 Volume of a rectangular prism  
geom090 Volume of a triangular prism  
geom033 Volume of a pyramid  
geom035 Volume of a cylinder  
geom092 Word problem involving the rate of filling or emptying a cylinder  
geom622 Volume of a cone  
geom841 Volume of a sphere

### Real Numbers

arith687 Fractional position on a number line  
alge286 Plotting integers on a number line  
arith605 Plotting rational numbers on a number line  
arith699 Writing a signed number for a real-world situation  
arith092 Using a common denominator to order fractions  
arith608 Ordering decimals  
arith609 Ordering fractions and decimals  
arith691 Ordering integers  
arith016 Square root of a perfect square  
arith763 Using a calculator to approximate a square root

arith712 Ordering real numbers  
 arith071 Absolute value of a number  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith754 Addition and subtraction with 3 integers  
 arith701 Word problem with addition or subtraction of integers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers  
 alge001 Identifying numbers as integers or non-integers  
 alge002 Identifying numbers as rational or irrational  
 arith116 Signed fraction addition or subtraction: Basic  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith822 Signed fraction multiplication: Basic  
 arith105 Signed fraction multiplication: Advanced  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 arith440 Operations with absolute value: Problem type 1  
 arith104 Operations with absolute value: Problem type 2  
 geom525 Computing distances between decimals on the number line  
 arith702 Exponents and integers: Problem type 1  
 arith703 Exponents and integers: Problem type 2  
 arith704 Exponents and signed fractions  
 arith118 Order of operations with integers  
 arith600 Order of operations with integers and exponents  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 alge187 Properties of addition  
 arith657 Understanding the distributive property  
 alge310 Multiplying a constant and a linear monomial  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge188 Properties of real numbers  
 alge608 Using distribution and combining like terms to simplify: Univariate  
 alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
 alge293 Combining like terms in a quadratic expression

### Linear Equations

alge009 Additive property of equality with whole numbers  
 alge801 Additive property of equality with fractions and mixed numbers  
 alge800 Additive property of equality with decimals  
 alge010 Additive property of equality with integers  
 alge836 Additive property of equality with signed fractions  
 alge008 Multiplicative property of equality with whole numbers  
 alge820 Multiplicative property of equality with fractions  
 alge825 Multiplicative property of equality with decimals  
 alge797 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge803 Using two steps to solve an equation with whole numbers  
 alge266 Additive property of equality with a negative coefficient  
 alge006 Solving a two-step equation with integers  
 alge200 Solving an equation to find the value of an expression  
 alge920 Introduction to solving an equation with parentheses  
 alge837 Solving a multi-step equation given in fractional form



alge986 Identifying properties used to solve a linear equation  
alge824 Solving a two-step equation with signed decimals  
alge838 Introduction to solving an equation with variables on the same side  
alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
alge611 Introduction to solving a linear equation with a variable on each side  
alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
alge208 Solving a two-step equation with signed fractions  
alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
alge742 Solving equations with zero, one, or infinitely many solutions  
alge810 Introduction to algebraic symbol manipulation  
alge743 Algebraic symbol manipulation: Problem type 1  
alge744 Algebraic symbol manipulation: Problem type 2  
alge733 Writing a one-step expression for a real-world situation  
alge831 Translating a phrase into a one-step expression  
alge291 Translating a phrase into a two-step expression  
alge016 Translating a sentence into a one-step equation  
alge841 Translating a sentence into a multi-step equation  
alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
alge014 Solving a word problem with two unknowns using a linear equation  
alge730 Writing a multi-step equation for a real-world situation  
alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
alge792 Solving a word problem with three unknowns using a linear equation  
alge842 Solving a word problem involving consecutive integers  
alge794 Solving a value mixture problem using a linear equation  
arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
alge823 Solving a one-step word problem using the formula  $d = rt$   
alge218 Solving a word problem involving rates and time conversion  
alge796 Solving a distance, rate, time problem using a linear equation  
geom817 Finding a side length given the perimeter and side lengths with variables  
geom217 Finding the side length of a rectangle given its perimeter or area  
geom143 Finding the perimeter or area of a rectangle given one of these values  
geom838 Circumference ratios  
geom039 Finding supplementary and complementary angles  
geom530 Solving equations involving vertical angles  
geom001 Finding an angle measure of a triangle given two angles  
geom623 Finding angle measures of a triangle given angles with variables  
arith663 Writing ratios for real-world situations  
alge272 Solving a proportion of the form  $x/a = b/c$   
alge840 Solving a proportion of the form  $(x+a) \div b = c \div d$   
alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
arith610 Word problem on proportions: Problem type 1  
arith611 Word problem on proportions: Problem type 2  
geom037 Similar polygons  
geom038 Similar right triangles  
geom337 Indirect measurement  
arith030 Finding a percentage of a whole number without a calculator: Basic  
arith698 Applying the percent equation  
arith074 Finding the sale price without a calculator given the original price and percent discount  
arith031 Finding the original price given the sale price and percent discount  
arith225 Finding the percentage increase or decrease: Advanced

alge795 Solving a percent mixture problem using a linear equation  
 arith232 Finding simple interest without a calculator  
 unit005 U.S. Customary unit conversion with whole number values  
 unit001 Metric distance conversion with whole number values  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 mstat038 Reading the temperature from a thermometer  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 unit052 Finding the absolute error and percent error of a measurement  
 alge603 Introduction to solving an absolute value equation  
 alge864 Solving an absolute value equation: Problem type 1  
 alge865 Solving an absolute value equation: Problem type 2  
 alge866 Solving an absolute value equation: Problem type 3  
 alge867 Solving an absolute value equation: Problem type 4

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alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge748 Writing an inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line  
 set001 Set builder notation  
 set002 Union and intersection of finite sets  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge809 Multiplicative property of inequality with whole numbers  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge860 Solving inequalities with no solution or all real numbers as solutions  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge861 Solving a compound linear inequality: Graph solution, advanced  
 alge846 Translating a sentence into a multi-step inequality  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
 alge868 Solving an absolute value inequality: Problem type 1  
 alge943 Writing an absolute value inequality given a graph on the number line  
 alge869 Solving an absolute value inequality: Problem type 2  
 alge870 Solving an absolute value inequality: Problem type 3  
 alge871 Solving an absolute value inequality: Problem type 4  
 alge872 Solving an absolute value inequality: Problem type 5

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alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane

alge850 Table for a linear equation  
alge873 Identifying solutions to a linear equation in two variables  
alge066 Finding a solution to a linear equation in two variables  
alge877 Graphing a linear equation of the form  $y = mx$   
alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
alge880 Graphing a line given its equation in standard form  
alge198 Graphing a vertical or horizontal line  
alge884 Finding x- and y-intercepts given the graph of a line on a grid  
alge924 Finding x- and y-intercepts of a line given the equation: Basic  
alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
alge197 Graphing a line given its x- and y-intercepts  
alge881 Graphing a line by first finding its x- and y-intercepts  
alge875 Classifying slopes given graphs of lines  
alge886 Finding slope given the graph of a line on a grid  
alge887 Finding slope given two points on the line  
alge885 Finding the slope of horizontal and vertical lines  
alge888 Finding the coordinate that yields a given slope  
alge259 Graphing a line given its slope and y-intercept  
alge196 Graphing a line through a given point with a given slope  
mstat007 Interpreting a line graph  
alge876 Identifying linear equations: Advanced  
alge874 Identifying linear functions given ordered pairs  
fun005 Writing a function rule given a table of ordered pairs: One-step rules  
fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
alge891 Rewriting a linear equation in the form  $Ax + By = C$   
alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
alge882 Graphing a line by first finding its slope and y-intercept  
alge258 Writing an equation of a line given its slope and y-intercept  
alge892 Writing an equation and graphing a line given its slope and y-intercept  
alge314 Finding the slope, y-intercept, and equation for a linear function given a table of values  
alge893 Writing an equation in slope-intercept form given the slope and a point  
alge318 Finding the slope and a point on a line given its equation in point-slope form  
alge883 Graphing a line given its equation in point-slope form  
alge894 Writing an equation in point-slope form given the slope and a point  
alge313 Writing an equation in standard form given the slope and a point  
alge070 Writing an equation of a line given the y-intercept and another point  
alge072 Writing the equation of the line through two given points  
alge073 Writing the equations of vertical and horizontal lines through a given point  
alge322 Comparing linear functions to the parent function  $y=x$   
alge987 Comparing properties of linear functions given in different forms  
geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
alge895 Identifying parallel and perpendicular lines from equations  
geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
alge897 Writing and evaluating a function that models a real-world situation: Advanced  
alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
alge817 Finding the initial amount and rate of change given a table for a linear function  
alge818 Finding the initial amount and rate of change given a graph of a linear function  
alge992 Combining functions to write a new function that models a real-world situation  
alge989 Interpreting the parameters of a linear function that models a real-world situation  
alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
alge806 Application problem with a linear function: Finding a coordinate given two points  
mstat052 Identifying independent and dependent variables from equations or real-world situations  
alge991 Solving a linear equation by graphing  
alge828 Interpreting direct variation from a graph  
alge982 Identifying direct variation equations  
alge938 Identifying direct variation from ordered pairs and writing equations  
alge904 Writing a direct variation equation  
alge175 Word problem on direct variation  
mstat030 Sketching the line of best fit

mstat023 Scatter plots and correlation  
 mstat068 Predictions from the line of best fit  
 mstat067 Approximating the equation of a line of best fit and making predictions  
 mstat093 Classifying linear and nonlinear relationships from scatter plots  
 mstat071 Linear relationship and the correlation coefficient  
 mstat069 Computing residuals  
 mstat070 Interpreting residual plots  
 mstat074 Identifying correlation and causation  
 alge898 Translating the graph of an absolute value function: One step  
 alge899 Translating the graph of an absolute value function: Two steps  
 alge913 Graphing an absolute value equation of the form  $y = A - x -$   
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge901 How the leading coefficient affects the graph of an absolute value function  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun016 Domain and range from ordered pairs  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun030 Evaluating a piecewise-defined function  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 alge990 Domain and range of a linear function that models a real-world situation  
 alge716 Introduction to the composition of two functions  
 fun012 Inverse functions: Linear, discrete  
 fun026 Finding an output of a function from its graph  
 pcalc761 Finding inputs and outputs of a function from its graph  
 fun007 Domain and range from the graph of a discrete relation  
 alge312 Finding domain and range from a linear graph in context  
 alge896 Graphing an integer function and finding its range for a given domain  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 pcalc752 Finding local maxima and minima of a function given the graph  
 mstat018 Choosing a graph to fit a narrative: Basic  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge570 Graphing a function of the form  $f(x) = ax + b$ : Integer slope  
 alge571 Graphing a function of the form  $f(x) = ax + b$ : Fractional slope  
 alge954 Graphing a parabola of the form  $y = ax^2$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge572 Graphing a function of the form  $f(x) = ax^2$   
 alge573 Graphing a function of the form  $f(x) = ax^2 + c$   
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 fun031 Graphing a piecewise-defined function: Problem type 1  
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge908 Finding the first terms of a sequence using a recursive rule  
 alge910 Writing a recursive rule for an arithmetic sequence

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alge914 Identifying solutions to a system of linear equations  
 alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations  
 pcalc820 Using a graphing calculator to solve a system of linear equations: Basic  
 pcalc821 Using a graphing calculator to solve a system of linear equations: Advanced  
 alge317 Writing a system of linear equations given its graph  
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition

alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge916 Solving a system of linear equations with fractional coefficients  
 alge917 Solving a system of linear equations with decimal coefficients  
 alge752 Solving a 2x2 system of linear equations that is inconsistent or consistent dependent  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 alge988 Identifying the operations used to create equivalent systems of equations  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge315 Writing an inequality given its graph in the plane: Horizontal or vertical boundary line  
 alge316 Writing an inequality given its graph in the plane: Slanted boundary line  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced  
 alge922 Graphing a system of three linear inequalities  
 alge729 Writing a multi-step inequality for a real-world situation  
 pcalc093 Solving a word problem using a system of linear inequalities: Problem type 1  
 pcalc037 Scalar multiplication of a matrix  
 pcalc038 Addition or subtraction of matrices  
 pcalc740 Linear combination of matrices  
 pcalc712 Gauss-Jordan elimination with a 2x2 matrix

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alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge311 Product rule with positive exponents: Univariate  
 alge030 Product rule with positive exponents: Multivariate  
 arith029 Ordering numbers with positive exponents  
 alge826 Understanding the power rules of exponents  
 alge754 Introduction to the power rules of exponents  
 alge027 Power rules with positive exponents  
 alge756 Power and product rules with positive exponents  
 alge827 Introduction to the quotient rule of exponents  
 alge026 Quotient of expressions involving exponents  
 alge927 Power and quotient rules with positive exponents  
 alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 arith729 Evaluating an expression with a negative exponent: Whole number base  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge961 Introduction to the product rule with negative exponents  
 alge028 Product rule with negative exponents  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge926 Quotient rule with negative exponents: Problem type 2  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge928 Power and quotient rules with negative exponents: Problem type 1  
 alge929 Power and quotient rules with negative exponents: Problem type 2

alge757 Power, product, and quotient rules with negative exponents  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent  
 scinot002 Multiplying and dividing numbers written in scientific notation  
 arith094 Cube root of an integer  
 alge812 Converting between radical form and exponent form  
 alge560 Rational exponents: Unit fraction exponents and whole number bases  
 alge561 Rational exponents: Unit fraction exponents and bases involving signs  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge249 Rational exponents: Powers of powers with negative exponents  
 alge971 Table for an exponential function  
 alge969 Graphing an exponential function:  $f(x) = ax$   
 alge970 Graphing an exponential function:  $f(x) = a(b)x$   
 alge712 Graphing an exponential function and its asymptote:  $f(x) = a(b)x$   
 alge321 Finding domain and range from the graph of an exponential function  
 alge301 Solving an exponential equation by finding common bases: Linear exponents  
 alge830 Evaluating an exponential function that models a real-world situation  
 arith853 Introduction to compound interest  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest  
 alge966 Finding the initial amount and rate of change given an exponential function  
 alge968 Writing an equation that models exponential growth or decay  
 alge967 Writing an exponential function rule given a table of ordered pairs  
 mstat103 Choosing an exponential model and using it to make a prediction  
 alge993 Comparing linear, polynomial, and exponential functions  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge911 Writing recursive rules for arithmetic and geometric sequences

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 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge932 Simplifying a sum or difference of multivariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge081 Multiplying conjugate binomials: Multivariate  
 alge032 Squaring a binomial: Univariate  
 alge068 Squaring a binomial: Multivariate  
 alge973 Multiplying binomials with negative coefficients  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge759 Dividing a polynomial by a monomial: Univariate  
 alge760 Dividing a polynomial by a monomial: Multivariate  
 alge761 Polynomial long division: Problem type 1  
 alge762 Polynomial long division: Problem type 2



alge763 Polynomial long division: Problem type 3  
 alge985 Closure properties of integers and polynomials  
 alge605 Factoring a linear binomial  
 alge736 Introduction to the GCF of two monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge930 Greatest common factor of three univariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge949 Factoring out a binomial from a polynomial: GCF factoring, basic  
 alge923 Factoring a univariate polynomial by grouping: Problem type 1  
 alge950 Factoring a univariate polynomial by grouping: Problem type 2  
 alge951 Factoring a multivariate polynomial by grouping: Problem type 1  
 alge952 Factoring a multivariate polynomial by grouping: Problem type 2  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge942 Factoring a quadratic in two variables with leading coefficient 1  
 alge936 Factoring out a constant before factoring a quadratic  
 alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1  
 alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
 alge941 Factoring a quadratic with leading coefficient greater than 1: Problem type 3  
 alge978 Factoring a quadratic by the ac-method  
 alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
 alge937 Factoring a quadratic with a negative leading coefficient  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge945 Factoring a perfect square trinomial with leading coefficient greater than 1  
 alge946 Factoring a perfect square trinomial in two variables  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge839 Factoring a difference of squares in two variables  
 alge948 Factoring a polynomial involving a GCF and a difference of squares: Univariate  
 alge833 Factoring a polynomial involving a GCF and a difference of squares: Multivariate  
 alge042 Factoring with repeated use of the difference of squares formula  
 alge044 Factoring a sum or difference of two cubes

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alge974 Finding the vertex, x-intercepts, and axis of symmetry from the graph of a parabola  
 alge953 Translating the graph of a parabola: One step  
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 alge569 Graphing a parabola of the form  $y = x^2 + bx + c$   
 alge094 Completing the square  
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients  
 alge681 Solving an equation written in factored form  
 alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge703 Solving a word problem using a quadratic equation with rational roots  
 alge323 Finding the zeros of a quadratic function given its equation  
 alge320 Writing a quadratic function given its zeros  
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 alge958 Solving a quadratic equation using the square root property: Decimal answers, basic  
 alge959 Solving a quadratic equation using the square root property: Decimal answers, advanced  
 alge960 Solving a quadratic equation by completing the square: Decimal answers  
 alge963 Applying the quadratic formula: Decimal answers  
 alge095 Applying the quadratic formula: Exact answers  
 alge214 Discriminant of a quadratic equation  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge277 Finding the x-intercept(s) and the vertex of a parabola

pcalc714 Using a graphing calculator to find the zeros of a quadratic function  
 pcalc793 Using a graphing calculator to find the x-intercept(s) and vertex of a quadratic function  
 alge957 Solving a quadratic equation by graphing  
 alge319 Rewriting a quadratic function in standard form  
 pcalc774 Rewriting a quadratic function to find the vertex of its graph  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge975 Domain and range from the graph of a parabola  
 alge976 Range of a quadratic function  
 pcalc680 Writing the equation of a quadratic function given its graph  
 alge996 Comparing properties of quadratic functions given in different forms  
 alge702 Classifying the graph of a function  
 mstat102 Choosing a quadratic model and using it to make a prediction  
 alge965 Identifying linear, quadratic, and exponential functions given ordered pairs  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge185 Writing an equation for a function after a vertical translation  
 fun020 Writing an equation for a function after a vertical and horizontal translation  
 pcalc748 Graphing a quadratic inequality: Problem type 1  
 pcalc749 Graphing a quadratic inequality: Problem type 2  
 alge997 Finding the average rate of change of a function given its equation  
 alge998 Finding the average rate of change of a function given its graph  
 alge994 Graphically solving a system of linear and quadratic equations  
 pcalc716 Using a graphing calculator to solve a system of linear and quadratic equations: Basic  
 alge995 Solving a system of linear and quadratic equations

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alge213 Domain of a square root function  
 alge539 Table for a square root function  
 pcalc781 Graphing a square root function  
 arith602 Estimating a square root  
 arith601 Square root of a rational perfect square  
 arith093 Simplifying the square root of a whole number less than 100  
 arith762 Simplifying the square root of a whole number greater than 100  
 alge264 Square root of a perfect square monomial  
 alge080 Simplifying a radical expression with an even exponent  
 alge275 Simplifying a radical expression with two variables  
 alge273 Simplifying a higher root of a whole number  
 alge811 Simplifying a higher radical expression: Multivariate  
 arith767 Introduction to square root addition or subtraction  
 arith032 Square root addition or subtraction  
 alge084 Simplifying a sum or difference of radical expressions: Multivariate  
 arith764 Introduction to square root multiplication  
 arith765 Square root multiplication: Basic  
 arith039 Square root multiplication: Advanced  
 alge640 Simplifying a product of radical expressions: Multivariate  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge984 Classifying sums and products as rational or irrational  
 alge086 Rationalizing the denominator of a radical expression  
 alge088 Rationalizing the denominator of a radical expression using conjugates  
 alge400 Introduction to solving a radical equation  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge091 Solving a radical equation that simplifies to a quadratic equation: One radical  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem  
 alge132 Distance between two points in the plane: Exact answers  
 alge191 Midpoint of a line segment in the plane  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths

pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc642 Solving a right triangle

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alge049 Restriction on a variable in a denominator: Linear  
 alge715 Domain of a rational function: Excluded values  
 alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2  
 alge034 Simplifying a ratio of multivariate polynomials  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge057 Adding rational expressions with different denominators:  $ax$ ,  $bx$   
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge622 Adding rational expressions with different denominators:  $x+a$ ,  $x+b$   
 alge661 Adding rational expressions involving different quadratic denominators  
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 alge058 Complex fraction involving multivariate monomials  
 alge767 Complex fraction: GCF and quadratic factoring  
 alge768 Complex fraction made of sums involving rational expressions  
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced  
 arith612 Word problem involving multiple rates  
 alge770 Solving a work problem using a rational equation  
 alge905 Writing an inverse variation equation  
 alge903 Identifying direct and inverse variation equations  
 alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
 alge176 Word problem on inverse variation  
 alge220 Word problem on inverse proportions  
 pcalc789 Finding the asymptotes of a rational function: Basic  
 pcalc108 Graphing a rational function: Constant or linear over linear

### Data Analysis and Probability

mstat049 Computing a percentage from a table of values  
 stat020 Calculating relative frequencies in a contingency table  
 stat805 Making a reasonable inference based on proportion statistics  
 mstat025 Finding if a question can be answered by the data  
 mstat037 Constructing a line plot  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat031 Interpreting a stem-and-leaf plot

stat804 Interpreting a circle graph or pie chart  
 arith856 Finding a percentage of a total amount in a circle graph  
 stat801 Computations from a circle graph  
 geom814 Angle measure in a circle graph  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat001 Mean of a data set  
 stat803 Finding the value for a new score that will yield a given mean  
 stat802 Rejecting unreasonable claims based on average statistics  
 mstat066 Weighted mean  
 mstat028 Mean and median of a data set  
 mstat029 How changing a value affects the mean and median  
 mstat053 Choosing the best measure to describe data  
 stat009 Percentiles  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat072 Five-number summary and interquartile range  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 stat021 Population standard deviation  
 mstat042 Interpreting a Venn diagram of 2 sets  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 stat790 Permutations, combinations, and the multiplication principle for counting  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat032 Probability of the union of two events

## B.65 Prep. for TX - STAAR Algebra 1

### Arithmetic Readiness

arith078 Rounding to tens or hundreds  
 arith123 Rounding to hundreds or thousands  
 arith101 Estimating a sum of whole numbers  
 arith233 Introduction to exponents  
 arith692 Writing expressions using exponents  
 arith683 Power of 10: Positive exponent  
 arith048 Order of operations with whole numbers  
 arith051 Order of operations with whole numbers and grouping symbols  
 arith693 Order of operations with whole numbers and exponents: Basic  
 arith713 Order of operations with whole numbers and exponents: Advanced  
 alge731 Evaluating an algebraic expression: Whole numbers with two operations  
 alge832 Evaluating an algebraic expression: Whole number operations and exponents  
 arith056 Factors

arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith070 Least common multiple of 2 numbers  
arith240 Word problem with common multiples  
arith212 Equivalent fractions  
arith067 Simplifying a fraction  
arith092 Using a common denominator to order fractions  
arith618 Addition or subtraction of fractions with the same denominator  
arith801 Finding the LCD of two fractions  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
arith100 Fractional part of a circle  
arith079 Product of a unit fraction and a whole number  
arith086 Product of a fraction and a whole number: Problem type 1  
arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith697 Mixed arithmetic operations with fractions  
arith095 Multi-step word problem involving fractions and multiplication  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith084 Addition of mixed numbers with the same denominator and carry  
arith216 Subtraction of mixed numbers with the same denominator and borrowing  
arith085 Addition or subtraction of mixed numbers with different denominators  
arith020 Mixed number multiplication: Problem type 1  
arith068 Mixed number division  
arith110 Decimal place value: Tenths and hundredths  
arith221 Rounding decimals  
arith129 Introduction to ordering decimals  
arith608 Ordering decimals  
arith609 Ordering fractions and decimals  
arith222 Converting a fraction to a terminating decimal  
arith089 Converting a fraction to a repeating decimal  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith624 Addition of aligned decimals  
arith625 Subtraction of aligned decimals  
arith131 Estimating a decimal sum or difference  
arith017 Multiplication of a decimal by a whole number  
arith082 Multiplication of a decimal by a power of ten  
arith055 Decimal multiplication: Problem type 1  
arith081 Division of a decimal by a whole number  
arith083 Division of a decimal by a power of ten  
arith019 Division of a decimal by a 2-digit decimal  
arith626 Word problem with one decimal operation: Problem type 1  
arith627 Word problem with one decimal operation: Problem type 2  
arith628 Word problem with multiple decimal operations: Problem type 1  
geom339 Perimeter of a polygon  
geom300 Perimeter of a square or a rectangle  
geom019 Area of a square or a rectangle  
geom221 Finding the missing length in a figure  
geom340 Area of a piecewise rectangular figure  
geom142 Word problem involving the area between two rectangles  
geom801 Area of a triangle  
geom022 Area of a parallelogram  
geom023 Area of a trapezoid  
geom016 Circumference of a circle  
geom301 Perimeter involving rectangles and circles  
geom838 Circumference ratios  
geom802 Circumference and area of a circle

geom302 Area involving rectangles and circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom031 Surface area of a cube or a rectangular prism  
 geom091 Surface area of a triangular prism  
 geom034 Surface area of a cylinder: Exact answers in terms of  $\pi$   
 geom842 Surface area of a sphere  
 geom311 Volume of a rectangular prism  
 geom090 Volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom035 Volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom086 Volume of a cone: Exact answers in terms of  $\pi$   
 geom841 Volume of a sphere  
 geom039 Finding supplementary and complementary angles

### Real Numbers

alge001 Identifying numbers as integers or non-integers  
 alge002 Identifying numbers as rational or irrational  
 mstat038 Reading the temperature from a thermometer  
 arith699 Writing a signed number for a real-world situation  
 alge286 Plotting integers on a number line  
 arith687 Fractional position on a number line  
 arith605 Plotting rational numbers on a number line  
 arith691 Ordering integers  
 arith712 Ordering real numbers  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith701 Word problem with addition or subtraction of integers  
 arith116 Signed fraction addition or subtraction: Basic  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers  
 arith822 Signed fraction multiplication: Basic  
 arith105 Signed fraction multiplication: Advanced  
 alge984 Classifying sums and products as rational or irrational  
 arith702 Exponents and integers: Problem type 1  
 arith703 Exponents and integers: Problem type 2  
 arith704 Exponents and signed fractions  
 arith118 Order of operations with integers  
 arith600 Order of operations with integers and exponents  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 arith071 Absolute value of a number  
 arith104 Operations with absolute value: Problem type 2  
 geom525 Computing distances between decimals on the number line  
 alge187 Properties of addition  
 alge188 Properties of real numbers  
 arith657 Understanding the distributive property  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 alge663 Combining like terms: Advanced



alge293 Combining like terms in a quadratic expression

### Linear Equations

alge009 Additive property of equality with whole numbers  
alge801 Additive property of equality with fractions and mixed numbers  
alge800 Additive property of equality with decimals  
alge010 Additive property of equality with integers  
alge266 Additive property of equality with a negative coefficient  
alge836 Additive property of equality with signed fractions  
alge008 Multiplicative property of equality with whole numbers  
alge820 Multiplicative property of equality with fractions  
alge825 Multiplicative property of equality with decimals  
alge797 Multiplicative property of equality with integers  
alge012 Multiplicative property of equality with signed fractions  
alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
alge803 Using two steps to solve an equation with whole numbers  
alge006 Solving a two-step equation with integers  
alge837 Solving a multi-step equation given in fractional form  
alge208 Solving a two-step equation with signed fractions  
alge824 Solving a two-step equation with signed decimals  
alge200 Solving an equation to find the value of an expression  
alge920 Introduction to solving an equation with parentheses  
alge838 Introduction to solving an equation with variables on the same side  
alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
alge742 Solving equations with zero, one, or infinitely many solutions  
alge986 Identifying properties used to solve a linear equation  
alge810 Introduction to algebraic symbol manipulation  
alge743 Algebraic symbol manipulation: Problem type 1  
alge744 Algebraic symbol manipulation: Problem type 2  
alge733 Writing a one-step expression for a real-world situation  
alge831 Translating a phrase into a one-step expression  
alge291 Translating a phrase into a two-step expression  
alge016 Translating a sentence into a one-step equation  
alge841 Translating a sentence into a multi-step equation  
alge730 Writing a multi-step equation for a real-world situation  
alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
alge014 Solving a word problem with two unknowns using a linear equation  
alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
alge792 Solving a word problem with three unknowns using a linear equation  
alge842 Solving a word problem involving consecutive integers  
alge794 Solving a value mixture problem using a linear equation  
alge795 Solving a percent mixture problem using a linear equation  
arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
alge823 Solving a one-step word problem using the formula  $d = rt$   
alge218 Solving a word problem involving rates and time conversion  
alge796 Solving a distance, rate, time problem using a linear equation

geom817 Finding a side length given the perimeter and side lengths with variables  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom530 Solving equations involving vertical angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 stat803 Finding the value for a new score that will yield a given mean  
 arith663 Writing ratios for real-world situations  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 alge840 Solving a proportion of the form  $(x+a) \div b = c \div d$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 arith064 Solving a word problem on proportions using a unit rate  
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 arith226 Converting between percentages and decimals  
 arith090 Converting a percentage to a fraction in simplest form  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith069 Writing a ratio as a percentage without a calculator  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith698 Applying the percent equation  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith031 Finding the original price given the sale price and percent discount  
 arith225 Finding the percentage increase or decrease: Advanced  
 arith232 Finding simple interest without a calculator  
 unit005 U.S. Customary unit conversion with whole number values  
 unit001 Metric distance conversion with whole number values  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 unit052 Finding the absolute error and percent error of a measurement  
 alge864 Solving an absolute value equation: Problem type 1  
 alge865 Solving an absolute value equation: Problem type 2  
 alge866 Solving an absolute value equation: Problem type 3  
 alge867 Solving an absolute value equation: Problem type 4

### Linear Inequalities

alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge846 Translating a sentence into a multi-step inequality  
 alge748 Writing an inequality for a real-world situation  
 alge729 Writing a multi-step inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2

alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge860 Solving inequalities with no solution or all real numbers as solutions  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge861 Solving a compound linear inequality: Graph solution, advanced  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
 alge943 Writing an absolute value inequality given a graph on the number line  
 alge868 Solving an absolute value inequality: Problem type 1  
 alge869 Solving an absolute value inequality: Problem type 2  
 alge870 Solving an absolute value inequality: Problem type 3  
 alge871 Solving an absolute value inequality: Problem type 4  
 alge872 Solving an absolute value inequality: Problem type 5

### Functions and Lines

set001 Set builder notation  
 set002 Union and intersection of finite sets  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 fun016 Domain and range from ordered pairs  
 alge896 Graphing an integer function and finding its range for a given domain  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 pcalc761 Finding inputs and outputs of a function from its graph  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 pcalc752 Finding local maxima and minima of a function given the graph  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 alge716 Introduction to the composition of two functions  
 fun012 Inverse functions: Linear, discrete  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge873 Identifying solutions to a linear equation in two variables  
 alge850 Table for a linear equation  
 alge066 Finding a solution to a linear equation in two variables  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
 alge881 Graphing a line by first finding its  $x$ - and  $y$ -intercepts  
 alge196 Graphing a line through a given point with a given slope  
 alge882 Graphing a line by first finding its slope and  $y$ -intercept  
 alge883 Graphing a line given its equation in point-slope form  
 alge198 Graphing a vertical or horizontal line  
 alge876 Identifying linear equations: Advanced  
 alge874 Identifying linear functions given ordered pairs  
 alge891 Rewriting a linear equation in the form  $Ax + By = C$   
 alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
 alge924 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Basic  
 alge210 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Advanced  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines  
 alge888 Finding the coordinate that yields a given slope

alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
 alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
 alge892 Writing an equation and graphing a line given its slope and y-intercept  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge893 Writing an equation in slope-intercept form given the slope and a point  
 alge894 Writing an equation in point-slope form given the slope and a point  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 alge897 Writing and evaluating a function that models a real-world situation: Advanced  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 alge990 Domain and range of a linear function that models a real-world situation  
 alge989 Interpreting the parameters of a linear function that models a real-world situation  
 alge992 Combining functions to write a new function that models a real-world situation  
 alge987 Comparing properties of linear functions given in different forms  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 alge895 Identifying parallel and perpendicular lines from equations  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 alge991 Solving a linear equation by graphing  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge828 Interpreting direct variation from a graph  
 alge982 Identifying direct variation equations  
 alge938 Identifying direct variation from ordered pairs and writing equations  
 alge904 Writing a direct variation equation  
 alge175 Word problem on direct variation  
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge908 Finding the first terms of a sequence using a recursive rule  
 alge910 Writing a recursive rule for an arithmetic sequence  
 mstat023 Scatter plots and correlation  
 mstat030 Sketching the line of best fit  
 mstat068 Predictions from the line of best fit  
 mstat067 Approximating the equation of a line of best fit and making predictions  
 mstat069 Computing residuals  
 mstat070 Interpreting residual plots  
 mstat071 Linear relationship and the correlation coefficient  
 mstat074 Identifying correlation and causation  
 alge898 Translating the graph of an absolute value function: One step  
 alge899 Translating the graph of an absolute value function: Two steps  
 alge913 Graphing an absolute value equation of the form  $y = A|x - h| + k$   
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge901 How the leading coefficient affects the graph of an absolute value function  
 alge954 Graphing a parabola of the form  $y = ax^2 + bx + c$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge262 Graphing a cubic function of the form  $y = ax^3 + bx^2 + cx + d$   
 fun030 Evaluating a piecewise-defined function  
 fun031 Graphing a piecewise-defined function: Problem type 1

## Systems

alge914 Identifying solutions to a system of linear equations  
 alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations

alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge916 Solving a system of linear equations with fractional coefficients  
 alge917 Solving a system of linear equations with decimal coefficients  
 alge752 Solving a 2x2 system of linear equations that is inconsistent or consistent dependent  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 alge988 Identifying the operations used to create equivalent systems of equations  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced  
 alge922 Graphing a system of three linear inequalities  
 pcalc093 Solving a word problem using a system of linear inequalities: Problem type 1  
 pcalc037 Scalar multiplication of a matrix  
 pcalc038 Addition or subtraction of matrices  
 pcalc740 Linear combination of matrices  
 pcalc712 Gauss-Jordan elimination with a 2x2 matrix

## Exponents

alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith029 Ordering numbers with positive exponents  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge030 Product rule with positive exponents: Multivariate  
 alge961 Introduction to the product rule with negative exponents  
 alge028 Product rule with negative exponents  
 alge827 Introduction to the quotient rule of exponents  
 alge026 Quotient of expressions involving exponents  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge926 Quotient rule with negative exponents: Problem type 2  
 alge826 Understanding the power rules of exponents  
 alge754 Introduction to the power rules of exponents  
 alge027 Power rules with positive exponents  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge756 Power and product rules with positive exponents  
 alge927 Power and quotient rules with positive exponents  
 alge928 Power and quotient rules with negative exponents: Problem type 1  
 alge929 Power and quotient rules with negative exponents: Problem type 2  
 alge757 Power, product, and quotient rules with negative exponents  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent

scinot002 Multiplying and dividing numbers written in scientific notation  
 alge812 Converting between radical form and exponent form  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge249 Rational exponents: Powers of powers with negative exponents  
 alge971 Table for an exponential function  
 alge830 Evaluating an exponential function that models a real-world situation  
 alge966 Finding the initial amount and rate of change given an exponential function  
 alge968 Writing an equation that models exponential growth or decay  
 alge967 Writing an exponential function rule given a table of ordered pairs  
 alge301 Solving an exponential equation by finding common bases: Linear exponents  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest  
 alge969 Graphing an exponential function:  $f(x) = ax$   
 alge970 Graphing an exponential function:  $f(x) = a(b)^x$   
 alge993 Comparing linear, polynomial, and exponential functions  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge911 Writing recursive rules for arithmetic and geometric sequences

### Polynomials and Factoring

alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge932 Simplifying a sum or difference of multivariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge081 Multiplying conjugate binomials: Multivariate  
 alge032 Squaring a binomial: Univariate  
 alge068 Squaring a binomial: Multivariate  
 alge973 Multiplying binomials with negative coefficients  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge759 Dividing a polynomial by a monomial: Univariate  
 alge760 Dividing a polynomial by a monomial: Multivariate  
 alge761 Polynomial long division: Problem type 1  
 alge762 Polynomial long division: Problem type 2  
 alge763 Polynomial long division: Problem type 3  
 alge985 Closure properties of integers and polynomials  
 alge736 Introduction to the GCF of two monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge930 Greatest common factor of three univariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge949 Factoring out a binomial from a polynomial: GCF factoring, basic  
 alge923 Factoring a univariate polynomial by grouping: Problem type 1  
 alge950 Factoring a univariate polynomial by grouping: Problem type 2



alge951 Factoring a multivariate polynomial by grouping: Problem type 1  
 alge952 Factoring a multivariate polynomial by grouping: Problem type 2  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge942 Factoring a quadratic in two variables with leading coefficient 1  
 alge936 Factoring out a constant before factoring a quadratic  
 alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1  
 alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
 alge941 Factoring a quadratic with leading coefficient greater than 1: Problem type 3  
 alge978 Factoring a quadratic by the ac-method  
 alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
 alge937 Factoring a quadratic with a negative leading coefficient  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge945 Factoring a perfect square trinomial with leading coefficient greater than 1  
 alge946 Factoring a perfect square trinomial in two variables  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge839 Factoring a difference of squares in two variables  
 alge948 Factoring a polynomial involving a GCF and a difference of squares: Univariate  
 alge833 Factoring a polynomial involving a GCF and a difference of squares: Multivariate  
 alge042 Factoring with repeated use of the difference of squares formula  
 alge044 Factoring a sum or difference of two cubes  
 alge681 Solving an equation written in factored form  
 alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge703 Solving a word problem using a quadratic equation with rational roots

### Quadratic Functions and Equations

alge974 Finding the vertex, x-intercepts, and axis of symmetry from the graph of a parabola  
 alge277 Finding the x-intercept(s) and the vertex of a parabola  
 pcalc774 Rewriting a quadratic function to find the vertex of its graph  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge975 Domain and range from the graph of a parabola  
 alge976 Range of a quadratic function  
 alge996 Comparing properties of quadratic functions given in different forms  
 alge953 Translating the graph of a parabola: One step  
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients  
 alge702 Classifying the graph of a function  
 alge965 Identifying linear, quadratic, and exponential functions given ordered pairs  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge185 Writing an equation for a function after a vertical translation  
 fun020 Writing an equation for a function after a vertical and horizontal translation  
 pcalc748 Graphing a quadratic inequality: Problem type 1  
 pcalc749 Graphing a quadratic inequality: Problem type 2  
 alge957 Solving a quadratic equation by graphing  
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 alge958 Solving a quadratic equation using the square root property: Decimal answers, basic  
 alge959 Solving a quadratic equation using the square root property: Decimal answers, advanced  
 alge094 Completing the square  
 alge960 Solving a quadratic equation by completing the square: Decimal answers  
 alge963 Applying the quadratic formula: Decimal answers  
 alge095 Applying the quadratic formula: Exact answers  
 alge214 Discriminant of a quadratic equation  
 alge524 Solving a word problem using a quadratic equation with irrational roots

alge994 Graphically solving a system of linear and quadratic equations  
 alge995 Solving a system of linear and quadratic equations  
 alge997 Finding the average rate of change of a function given its equation  
 alge998 Finding the average rate of change of a function given its graph

### Radicals

alge213 Domain of a square root function  
 pcalc781 Graphing a square root function  
 arith016 Square root of a perfect square  
 arith602 Estimating a square root  
 arith601 Square root of a rational perfect square  
 arith094 Cube root of an integer  
 arith093 Simplifying the square root of a whole number less than 100  
 alge264 Square root of a perfect square monomial  
 alge080 Simplifying a radical expression with an even exponent  
 alge275 Simplifying a radical expression with two variables  
 alge273 Simplifying a higher root of a whole number  
 alge811 Simplifying a higher radical expression: Multivariate  
 arith032 Square root addition or subtraction  
 alge084 Simplifying a sum or difference of radical expressions: Multivariate  
 arith039 Square root multiplication: Advanced  
 alge640 Simplifying a product of radical expressions: Multivariate  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge086 Rationalizing the denominator of a radical expression  
 alge088 Rationalizing the denominator of a radical expression using conjugates  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge091 Solving a radical equation that simplifies to a quadratic equation: One radical  
 geom044 Pythagorean Theorem  
 alge132 Distance between two points in the plane: Exact answers  
 alge191 Midpoint of a line segment in the plane  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc642 Solving a right triangle

### Rational Expressions

alge049 Restriction on a variable in a denominator: Linear  
 alge715 Domain of a rational function: Excluded values  
 alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2  
 alge034 Simplifying a ratio of multivariate polynomials  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge057 Adding rational expressions with different denominators:  $ax, bx$   
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced

alge622 Adding rational expressions with different denominators:  $x+a$ ,  $x+b$   
 alge661 Adding rational expressions involving different quadratic denominators  
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 alge058 Complex fraction involving multivariate monomials  
 alge767 Complex fraction: GCF and quadratic factoring  
 alge768 Complex fraction made of sums involving rational expressions  
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced  
 arith612 Word problem involving multiple rates  
 alge770 Solving a work problem using a rational equation  
 alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
 alge903 Identifying direct and inverse variation equations  
 alge905 Writing an inverse variation equation  
 alge176 Word problem on inverse variation  
 alge220 Word problem on inverse proportions  
 pcalc789 Finding the asymptotes of a rational function: Basic  
 pcalc108 Graphing a rational function: Constant or linear over linear

### Data Analysis and Probability

mstat037 Constructing a line plot  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat007 Interpreting a line graph  
 stat804 Interpreting a circle graph or pie chart  
 stat801 Computations from a circle graph  
 geom814 Angle measure in a circle graph  
 mstat031 Interpreting a stem-and-leaf plot  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat001 Mean of a data set  
 mstat028 Mean and median of a data set  
 mstat066 Weighted mean  
 mstat029 How changing a value affects the mean and median  
 mstat053 Choosing the best measure to describe data  
 stat802 Rejecting unreasonable claims based on average statistics  
 mstat025 Finding if a question can be answered by the data  
 mstat049 Computing a percentage from a table of values  
 stat020 Calculating relative frequencies in a contingency table  
 stat805 Making a reasonable inference based on proportion statistics  
 stat009 Percentiles  
 mstat072 Five-number summary and interquartile range  
 stat021 Population standard deviation  
 mstat042 Interpreting a Venn diagram of 2 sets  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations

mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 stat790 Permutations, combinations, and the multiplication principle for counting  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat032 Probability of the union of two events

## B.66 Prep. for TX - STAAR Geometry

### Arithmetic Readiness

arith233 Introduction to exponents  
 arith048 Order of operations with whole numbers  
 arith051 Order of operations with whole numbers and grouping symbols  
 arith693 Order of operations with whole numbers and exponents: Basic  
 alge731 Evaluating an algebraic expression: Whole numbers with two operations  
 arith056 Factors  
 arith070 Least common multiple of 2 numbers  
 arith212 Equivalent fractions  
 arith067 Simplifying a fraction  
 arith801 Finding the LCD of two fractions  
 arith230 Addition or subtraction of fractions with different denominators  
 arith086 Product of a fraction and a whole number: Problem type 1  
 arith053 Fraction multiplication  
 arith088 The reciprocal of a number  
 arith022 Fraction division  
 arith015 Writing an improper fraction as a mixed number  
 arith110 Decimal place value: Tenths and hundredths  
 arith221 Rounding decimals  
 arith013 Decimal addition with 3 numbers  
 arith625 Subtraction of aligned decimals  
 arith017 Multiplication of a decimal by a whole number  
 arith082 Multiplication of a decimal by a power of ten  
 arith055 Decimal multiplication: Problem type 1  
 arith081 Division of a decimal by a whole number  
 arith083 Division of a decimal by a power of ten  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 alge286 Plotting integers on a number line  
 arith691 Ordering integers  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith701 Word problem with addition or subtraction of integers  
 arith116 Signed fraction addition or subtraction: Basic  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers

arith822 Signed fraction multiplication: Basic  
 arith118 Order of operations with integers  
 arith702 Exponents and integers: Problem type 1  
 arith703 Exponents and integers: Problem type 2  
 arith704 Exponents and signed fractions  
 arith600 Order of operations with integers and exponents  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 arith071 Absolute value of a number  
 arith104 Operations with absolute value: Problem type 2  
 arith016 Square root of a perfect square  
 arith602 Estimating a square root  
 arith601 Square root of a rational perfect square  
 arith094 Cube root of an integer  
 arith093 Simplifying the square root of a whole number less than 100  
 arith032 Square root addition or subtraction  
 arith039 Square root multiplication: Advanced  
 alge086 Rationalizing the denominator of a radical expression  
 mstat034 Measuring length to the nearest quarter or half inch  
 mstat035 Conversions involving measurements in feet and inches  
 mstat036 Adding measurements in feet and inches  
 unit005 U.S. Customary unit conversion with whole number values  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 unit009 U.S. Customary area unit conversion with whole number values  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 mstat065 Converting between temperatures in Fahrenheit and Celsius

### Equations and Inequalities

alge001 Identifying numbers as integers or non-integers  
 alge002 Identifying numbers as rational or irrational  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 alge663 Combining like terms: Advanced  
 alge293 Combining like terms in a quadratic expression  
 alge187 Properties of addition  
 alge188 Properties of real numbers  
 alge291 Translating a phrase into a two-step expression  
 alge016 Translating a sentence into a one-step equation  
 alge010 Additive property of equality with integers  
 alge266 Additive property of equality with a negative coefficient  
 alge740 Multiplicative property of equality with integers  
 alge820 Multiplicative property of equality with fractions  
 alge012 Multiplicative property of equality with signed fractions  
 alge803 Using two steps to solve an equation with whole numbers  
 alge006 Solving a two-step equation with integers  
 alge208 Solving a two-step equation with signed fractions  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution

alge810 Introduction to algebraic symbol manipulation  
 alge743 Algebraic symbol manipulation: Problem type 1  
 alge744 Algebraic symbol manipulation: Problem type 2  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 arith663 Writing ratios for real-world situations  
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 alge015 Translating a sentence by using an inequality symbol  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge166 Graphing a compound inequality on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge019 Solving a linear inequality: Problem type 1  
 alge020 Solving a linear inequality: Problem type 2  
 alge021 Solving a linear inequality: Problem type 3  
 alge207 Solving a linear inequality: Problem type 4  
 alge745 Solving a linear inequality: Problem type 5  
 alge746 Solving a compound linear inequality: Graph solution, basic

### Linear Equations in Two Variables

alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge850 Table for a linear equation  
 alge066 Finding a solution to a linear equation in two variables  
 alge216 Determining whether given points lie on one, both, or neither of 2 lines given equations  
 alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
 alge194 Graphing a line given its equation in slope-intercept form  
 alge195 Graphing a line given its equation in standard form  
 alge196 Graphing a line through a given point with a given slope  
 alge198 Graphing a vertical or horizontal line  
 alge069 Finding the  $y$ -intercept of a line given its equation  
 alge210 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Advanced  
 alge684 Finding slope given the graph of a line on a grid  
 alge685 Finding slope given two points on the line  
 alge631 Finding the slope of a line given its equation  
 alge070 Writing an equation of a line given the  $y$ -intercept and another point  
 alge071 Writing the equation of a line given the slope and a point on the line  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations  
 alge751 Solving a system of linear equations using substitution  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 pcalc038 Addition or subtraction of matrices  
 pcalc037 Scalar multiplication of a matrix  
 pcalc740 Linear combination of matrices

### Reasoning, Lines, and Angles

alge807 Finding the next terms of a sequence with whole numbers  
 alge732 Finding patterns in shapes  
 mstat042 Interpreting a Venn diagram of 2 sets



mstat043 Interpreting a Venn diagram of 3 sets  
glogic001 Conditional statements and negations  
glogic005 The converse, inverse, and contrapositive of a conditional statement  
glogic008 Conditional statements and deductive reasoning  
geom349 Naming segments, rays, and lines  
geom525 Computing distances between decimals on the number line  
geom526 Midpoint of a number line segment  
geom521 Segment addition and midpoints  
geom616 Introduction to proofs: Justifying statements  
geom614 Proofs involving segment congruence  
alge132 Distance between two points in the plane: Exact answers  
alge191 Midpoint of a line segment in the plane  
geom358 Identifying parallel and perpendicular lines  
geom835 Introduction to proofs involving parallel lines  
geom836 Proofs involving parallel lines  
geom154 Constructing the perpendicular bisector of a line segment  
geom150 Constructing a pair of perpendicular lines  
geom157 Constructing a pair of parallel lines  
geom151 Measuring an angle with the protractor  
geom152 Drawing an angle with the protractor  
geom303 Acute, obtuse, and right angles  
geom039 Finding supplementary and complementary angles  
geom304 Identifying corresponding and alternate angles  
geom305 Identifying supplementary and vertical angles  
geom530 Solving equations involving vertical angles  
geom531 Solving equations involving angles and a pair of parallel lines  
geom850 Angle addition with relationships between angles  
geom851 Angle addition and angle bisectors  
geom611 Proofs involving angle congruence  
geom158 Constructing an angle bisector  
geom159 Constructing congruent angles

### Triangles

geom306 Acute, obtuse, and right triangles  
geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
geom801 Area of a triangle  
geom001 Finding an angle measure of a triangle given two angles  
geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
geom908 Finding an angle measure for a triangle with an extended side  
geom309 Finding an angle measure for a triangle sharing a side with another triangle  
geom812 Finding an angle measure given extended triangles  
geom813 Finding an angle measure given a triangle and parallel lines  
geom844 Using triangle inequality to determine if side lengths form a triangle  
geom845 Using triangle inequality to determine possible lengths of a third side  
geom854 Relationship between angle measures and side lengths in a triangle  
geom855 Relationship between angle measures and side lengths in two triangles  
geom650 Indirect proof (proof by contradiction)  
geom359 Identifying congruent shapes on a grid  
geom520 Identifying and naming congruent triangles  
geom617 Proofs involving congruent triangles and vertical angles or the reflexive property  
geom837 Proofs involving congruent triangles and segment or angle bisectors  
geom840 Proofs involving congruent triangles that overlap: Basic  
geom839 Proofs involving congruent triangles, parallel or perpendicular segments, and CPCTC  
geom843 Proofs involving congruent triangles that overlap: Advanced  
geom044 Pythagorean Theorem  
geom862 Using the Pythagorean Theorem repeatedly  
geom068 Computing an area using the Pythagorean Theorem  
geom506 Special right triangles: Exact answers

**Polygons**

geom310 Properties of quadrilaterals  
 geom523 Conditions for quadrilaterals  
 geom532 Classifying parallelograms  
 geom819 Finding coordinates of vertices of polygons  
 geom818 Finding the coordinates of a point to make a parallelogram  
 geom863 Congruence in the coordinate plane  
 geom870 Sum of the angle measures of a quadrilateral  
 geom528 Finding measures involving diagonals of parallelograms  
 geom527 Conditions for parallelograms  
 geom833 Finding measures involving diagonals of rectangles  
 geom834 Finding measures involving diagonals of rhombi  
 geom852 The sum of interior angle measures in a convex polygon  
 geom853 Interior and exterior angle measures in a regular polygon  
 geom300 Perimeter of a square or a rectangle  
 geom339 Perimeter of a polygon  
 geom221 Finding the missing length in a figure  
 geom353 Perimeter of a piecewise rectangular figure  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom078 Sides of polygons having the same perimeter  
 geom019 Area of a square or a rectangle  
 geom350 Distinguishing between the area and perimeter of a rectangle  
 geom351 Areas of rectangles with the same perimeter  
 geom340 Area of a piecewise rectangular figure  
 geom142 Word problem involving the area between two rectangles  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom344 Area involving rectangles and triangles  
 geom213 Area of a regular polygon  
 geom832 Area of quadrilaterals in the coordinate plane  
 alge724 Finding an area in terms of variables

**Similarity, Trigonometry, and Transformations**

geom360 Identifying similar or congruent shapes on a grid  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom510 Triangles and parallel lines  
 geom507 Right triangles and geometric mean  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc031 Solving a triangle with the law of sines: Problem type 1  
 pcalc032 Solving a triangle with the law of sines: Problem type 2  
 pcalc033 Solving a triangle with the law of cosines  
 geom357 Identifying transformations  
 geom330 Translating a polygon  
 geom331 Using a translated point to find coordinates of other translated points  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom333 Finding the coordinates of three points reflected over an axis  
 geom334 Drawing lines of symmetry  
 geom335 Rotating a figure about the origin

geom815 Finding an angle of rotation  
geom831 Rotational and point symmetries  
geom336 Dilating a figure  
pcalc060 Magnitude of a vector given in component form  
pcalc063 Translation of a vector  
geom858 Scalar multiplication of a vector: Geometric Approach  
geom857 Vector addition: Geometric approach  
geom856 Vector addition and scalar multiplication: Component form  
vector008 Linear combination of vectors: Component form  
vector002 Finding the magnitude and direction of a vector given its graph  
vector005 Finding the components of a vector given its graph

### Circles

geom347 Introduction to a circle: Diameter, radius, and chord  
geom343 Identifying central angles, inscribed angles, arcs, chords, and tangents of a circle  
geom848 Tangents of a circle: Problem type 1  
geom849 Tangents of a circle: Problem type 2  
geom511 Lengths of chords, secants, and tangents  
geom512 Central angles and inscribed angles of a circle  
geom514 Inscribed angles of a circle  
geom513 Angles of intersecting secants and tangents  
geom814 Angle measure in a circle graph  
geom016 Circumference of a circle  
geom218 Finding the radius or the diameter of a circle given its circumference  
geom301 Perimeter involving rectangles and circles  
geom838 Circumference ratios  
geom802 Circumference and area of a circle  
geom805 Arc length and area of a sector of a circle  
geom302 Area involving rectangles and circles  
geom036 Word problem involving the area between two concentric circles  
geom214 Area involving inscribed figures  
geom212 Circles inscribed in and circumscribed about regular polygons  
pcalc605 Graphing a circle given its equation in standard form  
pcalc065 Writing an equation of a circle given its center and a point on the circle  
pcalc066 Writing an equation of a circle given the endpoints of a diameter

### Volumes and Surface Areas

geom830 Counting the cubes in a solid made of cubes  
geom354 Volume of a rectangular prism made of unit cubes  
geom311 Volume of a rectangular prism  
geom505 Volume of a piecewise rectangular prism  
geom090 Volume of a triangular prism  
geom033 Volume of a pyramid  
geom035 Volume of a cylinder  
geom092 Word problem involving the rate of filling or emptying a cylinder  
geom086 Volume of a cone: Exact answers in terms of pi  
geom841 Volume of a sphere  
geom348 Vertices, edges, and faces of a solid  
geom219 Nets of solids  
geom861 Nets of solids: Advanced  
geom816 Side views of a solid made of cubes  
geom031 Surface area of a cube or a rectangular prism  
geom345 Surface area of a piecewise rectangular prism made of unit cubes  
geom091 Surface area of a triangular prism  
geom034 Surface area of a cylinder: Exact answers in terms of pi  
geom338 Surface area involving prisms or cylinders

geom842 Surface area of a sphere  
 geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids  
 geom847 Similar solids: Problem type 2

### Probability

mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 stat790 Permutations, combinations, and the multiplication principle for counting  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat032 Probability of the union of two events

### Removed Topics - Arithmetic, Equations, Inequalities

arith033 Greatest common factor of 2 numbers  
 arith123 Rounding to hundreds or thousands  
 arith692 Writing expressions using exponents  
 arith683 Power of 10: Positive exponent  
 arith658 Filling in missing operations to make an equation  
 arith034 Prime numbers  
 arith035 Prime factorization  
 arith064 Solving a word problem on proportions using a unit rate  
 arith657 Understanding the distributive property  
 arith092 Using a common denominator to order fractions  
 arith618 Addition or subtraction of fractions with the same denominator  
 arith664 Introduction to addition or subtraction of fractions with different denominators  
 arith079 Product of a unit fraction and a whole number  
 arith119 Introduction to fraction multiplication  
 arith694 Division involving a whole number and a fraction  
 arith697 Mixed arithmetic operations with fractions  
 arith619 Writing a mixed number as an improper fraction  
 arith084 Addition of mixed numbers with the same denominator and carry  
 arith216 Subtraction of mixed numbers with the same denominator and borrowing  
 arith020 Mixed number multiplication: Problem type 1  
 arith068 Mixed number division  
 arith220 Decimal place value: Hundreds to ten thousandths  
 arith608 Ordering decimals  
 arith609 Ordering fractions and decimals  
 arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
 arith222 Converting a fraction to a terminating decimal  
 arith089 Converting a fraction to a repeating decimal  
 arith626 Word problem with one decimal operation: Problem type 1  
 arith627 Word problem with one decimal operation: Problem type 2  
 arith226 Converting between percentages and decimals  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith090 Converting a percentage to a fraction in simplest form

mstat049 Computing a percentage from a table of values  
arith069 Writing a ratio as a percentage without a calculator  
arith698 Applying the percent equation  
arith074 Finding the sale price without a calculator given the original price and percent discount  
arith031 Finding the original price given the sale price and percent discount  
arith225 Finding the percentage increase or decrease: Advanced  
arith232 Finding simple interest without a calculator  
stat804 Interpreting a circle graph or pie chart  
stat801 Computations from a circle graph  
arith699 Writing a signed number for a real-world situation  
mstat038 Reading the temperature from a thermometer  
arith687 Fractional position on a number line  
arith605 Plotting rational numbers on a number line  
alge009 Additive property of equality with whole numbers  
alge800 Additive property of equality with decimals  
alge008 Multiplicative property of equality with whole numbers  
alge825 Multiplicative property of equality with decimals  
alge824 Solving a two-step equation with signed decimals  
alge200 Solving an equation to find the value of an expression  
alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
alge742 Solving equations with zero, one, or infinitely many solutions  
alge733 Writing a one-step expression for a real-world situation  
alge602 Writing a one-step variable expression for a real-world situation  
alge730 Writing a multi-step equation for a real-world situation  
alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
alge014 Solving a word problem with two unknowns using a linear equation  
alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
alge794 Solving a value mixture problem using a linear equation  
alge795 Solving a percent mixture problem using a linear equation  
arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
alge823 Solving a one-step word problem using the formula  $d = rt$   
alge218 Solving a word problem involving rates and time conversion  
alge796 Solving a distance, rate, time problem using a linear equation  
alge748 Writing an inequality for a real-world situation  
alge749 Solving a decimal word problem using a two-step linear inequality  
alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
alge270 Solving an absolute value equation of the form  $a-x = b$  or  $-x+a = b$   
alge103 Solving an absolute value equation of the form  $-ax+b = c$   
alge170 Solving an absolute value inequality: Basic  
mstat025 Finding if a question can be answered by the data  
stat802 Rejecting unreasonable claims based on average statistics  
stat805 Making a reasonable inference based on proportion statistics  
stat021 Population standard deviation  
mstat004 Constructing a histogram for numerical data  
mstat005 Constructing a bar graph for non-numerical data  
mstat024 Interpreting a bar graph  
mstat044 Interpreting a double bar graph  
mstat007 Interpreting a line graph  
mstat006 Constructing a box-and-whisker plot  
mstat031 Interpreting a stem-and-leaf plot  
mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
mstat003 Mode of a data set  
mstat055 Finding the mode and range of a data set  
mstat001 Mean of a data set  
mstat028 Mean and median of a data set

stat803 Finding the value for a new score that will yield a given mean  
 mstat029 How changing a value affects the mean and median  
 mstat053 Choosing the best measure to describe data  
 mstat066 Weighted mean

### Removed Topics - Advanced Algebra

set004 Set builder and interval notation  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun016 Domain and range from ordered pairs  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 pcalc768 Finding the average rate of change of a function  
 fun019 Sum, difference, and product of two functions  
 fun022 Composition of two functions: Basic  
 fun002 Graphing integer functions  
 pcalc761 Finding inputs and outputs of a function from its graph  
 pcalc750 Finding intercepts of a nonlinear function given its graph  
 pcalc751 Finding where a function is increasing, decreasing, or constant given the graph: Interval notation  
 pcalc752 Finding local maxima and minima of a function given the graph  
 fun024 Domain and range from the graph of a continuous function  
 pcalc114 Even and odd functions: Problem type 1  
 alge185 Writing an equation for a function after a vertical translation  
 fun020 Writing an equation for a function after a vertical and horizontal translation  
 pcalc769 Translating the graph of a function: One step  
 pcalc770 Translating the graph of a function: Two steps  
 pcalc771 Transforming the graph of a function by reflecting over an axis  
 pcalc772 Transforming the graph of a function by shrinking or stretching  
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge712 Graphing an exponential function and its asymptote:  $f(x) = a(b)^x$   
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 alge752 Solving a 2x2 system of linear equations that is inconsistent or consistent dependent  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge184 Solving a value mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge079 Graphing a system of two linear inequalities: Basic  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent  
 scinot002 Multiplying and dividing numbers written in scientific notation  
 alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent



arith042 Evaluating an expression with a negative exponent: Positive fraction base  
arith043 Evaluating an expression with a negative exponent: Negative integer base  
alge791 Rewriting an algebraic expression without a negative exponent  
alge821 Understanding the product rule of exponents  
alge024 Introduction to the product rule of exponents  
alge030 Product rule with positive exponents: Multivariate  
alge028 Product rule with negative exponents  
alge827 Introduction to the quotient rule of exponents  
alge026 Quotient of expressions involving exponents  
alge755 Quotient rule with negative exponents: Problem type 1  
alge826 Understanding the power rules of exponents  
alge754 Introduction to the power rules of exponents  
alge027 Power rules with positive exponents  
alge025 Power of a power rule with negative exponents  
alge799 Power rules with negative exponents  
alge756 Power and product rules with positive exponents  
arith029 Ordering numbers with positive exponents  
alge758 Degree and leading coefficient of a univariate polynomial  
alge798 Simplifying a sum or difference of two univariate polynomials  
alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
alge835 Multiplying a multivariate polynomial by a monomial  
alge033 Multiplying binomials with leading coefficients of 1  
alge764 Multiplying conjugate binomials: Univariate  
alge765 Multiplying binomials in two variables  
alge032 Squaring a binomial: Univariate  
alge180 Multiplication involving binomials and trinomials in two variables  
alge759 Dividing a polynomial by a monomial: Univariate  
alge760 Dividing a polynomial by a monomial: Multivariate  
alge761 Polynomial long division: Problem type 1  
alge762 Polynomial long division: Problem type 2  
alge736 Introduction to the GCF of two monomials  
alge037 Greatest common factor of two multivariate monomials  
alge738 Factoring out a monomial from a polynomial: Univariate  
alge739 Factoring out a monomial from a polynomial: Multivariate  
alge039 Factoring a quadratic with leading coefficient 1  
alge043 Factoring a perfect square trinomial  
alge040 Factoring a quadratic with leading coefficient greater than 1  
alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
alge041 Factoring a product of a quadratic trinomial and a monomial  
alge624 Factoring a difference of squares  
alge038 Factoring a polynomial by grouping: Problem type 1  
alge181 Factoring a polynomial by grouping: Problem type 2  
alge681 Solving an equation written in factored form  
alge045 Finding the roots of a quadratic equation with leading coefficient 1  
alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
alge211 Solving a quadratic equation needing simplification  
alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
alge227 Solving a quadratic equation using the square root property: Exact answers, advanced  
alge094 Completing the square  
alge780 Solving a quadratic equation by completing the square: Exact answers  
alge095 Applying the quadratic formula: Exact answers  
alge214 Discriminant of a quadratic equation  
alge703 Solving a word problem using a quadratic equation with rational roots  
alge524 Solving a word problem using a quadratic equation with irrational roots  
alge277 Finding the x-intercept(s) and the vertex of a parabola  
pcalc775 Finding the maximum or minimum of a quadratic function  
alge785 Word problem involving the maximum or minimum of a quadratic function  
alge252 Graphing a parabola of the form  $y = ax^2$   
alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
alge702 Classifying the graph of a function  
alge723 How the leading coefficient affects the shape of a parabola

alge715 Domain of a rational function: Excluded values  
 alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge057 Adding rational expressions with different denominators:  $ax$ ,  $bx$   
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge622 Adding rational expressions with different denominators:  $x+a$ ,  $x+b$   
 alge661 Adding rational expressions involving different quadratic denominators  
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 alge058 Complex fraction involving multivariate monomials  
 alge767 Complex fraction: GCF and quadratic factoring  
 alge768 Complex fraction made of sums involving rational expressions  
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 pcalc789 Finding the asymptotes of a rational function: Basic  
 pcalc108 Graphing a rational function: Constant or linear over linear  
 arith612 Word problem involving multiple rates  
 alge770 Solving a work problem using a rational equation  
 alge220 Word problem on inverse proportions  
 pcalc681 Writing an equation that models variation  
 alge175 Word problem on direct variation  
 alge176 Word problem on inverse variation  
 alge772 Word problem on combined variation  
 alge213 Domain of a square root function  
 pcalc781 Graphing a square root function  
 alge264 Square root of a perfect square monomial  
 alge080 Simplifying a radical expression with an even exponent  
 alge275 Simplifying a radical expression with two variables  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge088 Rationalizing the denominator of a radical expression using conjugates  
 alge812 Converting between radical form and exponent form  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge249 Rational exponents: Powers of powers with negative exponents  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge091 Solving a radical equation that simplifies to a quadratic equation: One radical  
 alge182 Solving a radical equation that simplifies to a quadratic equation: Two radicals  
 pcalc080 Finding the first terms of a sequence using an explicit rule with multiple occurrences of  $n$   
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest

## B.67 Math Prep. for TAKS – HS Exit Exam

### Integers, Fractions and Percents

arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith231 Integer multiplication and division  
 arith048 Order of operations with whole numbers  
 arith016 Square root of a perfect square  
 arith212 Equivalent fractions  
 arith067 Simplifying a fraction  
 arith015 Writing an improper fraction as a mixed number  
 arith619 Writing a mixed number as an improper fraction  
 arith618 Addition or subtraction of fractions with the same denominator  
 arith230 Addition or subtraction of fractions with different denominators  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith086 Product of a fraction and a whole number: Problem type 1  
 arith053 Fraction multiplication  
 arith022 Fraction division  
 arith105 Signed fraction multiplication: Advanced  
 mstat034 Measuring length to the nearest quarter or half inch  
 arith221 Rounding decimals  
 arith224 Word problem with decimal addition and multiplication  
 arith227 Word problem with decimal subtraction and division  
 arith090 Converting a percentage to a fraction in simplest form  
 arith686 Writing a ratio as a percentage  
 mstat049 Computing a percentage from a table of values  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith031 Finding the original price given the sale price and percent discount  
 arith225 Finding the percentage increase or decrease: Advanced  
 stat801 Computations from a circle graph  
 arith232 Finding simple interest without a calculator

### Equations and Inequalities

alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge607 Combining like terms: Integer coefficients  
 alge010 Additive property of equality with integers  
 alge008 Multiplicative property of equality with whole numbers  
 alge012 Multiplicative property of equality with signed fractions  
 alge006 Solving a two-step equation with integers  
 alge208 Solving a two-step equation with signed fractions  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge810 Introduction to algebraic symbol manipulation  
 alge160 Algebraic symbol manipulation  
 alge015 Translating a sentence by using an inequality symbol  
 alge729 Writing a multi-step inequality for a real-world situation  
 alge019 Solving a linear inequality: Problem type 1  
 alge020 Solving a linear inequality: Problem type 2  
 alge021 Solving a linear inequality: Problem type 3  
 alge017 Graphing a linear inequality on the number line  
 alge166 Graphing a compound inequality on the number line  
 arith663 Writing ratios for real-world situations

arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 arith064 Solving a word problem on proportions using a unit rate  
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 alge175 Word problem on direct variation  
 alge602 Writing a one-step variable expression for a real-world situation  
 alge016 Translating a sentence into a one-step equation  
 alge730 Writing a multi-step equation for a real-world situation  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides

### Graphs, Functions and Systems of Equations

alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge066 Finding a solution to a linear equation in two variables  
 alge216 Determining whether given points lie on one, both, or neither of 2 lines given equations  
 fun001 Table for a linear function  
 alge197 Graphing a line given its x- and y-intercepts  
 alge198 Graphing a vertical or horizontal line  
 alge194 Graphing a line given its equation in slope-intercept form  
 alge195 Graphing a line given its equation in standard form  
 alge196 Graphing a line through a given point with a given slope  
 alge637 Determining the slope of a line given its graph  
 alge263 Interpreting the graphs of two functions  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge191 Midpoint of a line segment in the plane  
 alge132 Distance between two points in the plane: Exact answers  
 alge726 Using the distance formula with midpoints  
 alge069 Finding the y-intercept of a line given its equation  
 alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
 alge631 Finding the slope of a line given its equation  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge071 Writing the equation of a line given the slope and a point on the line  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge725 Graphically solving a system of linear equations  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge184 Solving a value mixture problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge722 Simple system of equations with three unknowns  
 alge807 Finding the next terms of a sequence with whole numbers  
 alge728 Finding patterns in geometry  
 alge727 Checking if a formula describes a pattern  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 set004 Set builder and interval notation

fun016 Domain and range from ordered pairs  
 fun024 Domain and range from the graph of a continuous function  
 fun010 Vertical line test  
 alge702 Classifying the graph of a function  
 alge177 Finding a final amount in a word problem on exponential growth or decay

### Exponents, Polynomials and Quadratics

arith047 Evaluating expressions with exponents: Problem type 1  
 alge026 Quotient of expressions involving exponents  
 alge024 Introduction to the product rule of exponents  
 alge030 Product rule with positive exponents: Multivariate  
 alge028 Product rule with negative exponents  
 alge027 Power rules with positive exponents  
 alge025 Power of a power rule with negative exponents  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent  
 scinot002 Multiplying and dividing numbers written in scientific notation  
 alge004 Evaluating a quadratic expression: Integers  
 alge663 Combining like terms: Advanced  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge032 Squaring a binomial: Univariate  
 alge705 Factoring a quadratic with leading coefficient 1  
 alge040 Factoring a quadratic with leading coefficient greater than 1  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge681 Solving an equation written in factored form  
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge095 Applying the quadratic formula: Exact answers  
 alge703 Solving a word problem using a quadratic equation with rational roots  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge252 Graphing a parabola of the form  $y = ax^2$   
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 alge277 Finding the x-intercept(s) and the vertex of a parabola  
 alge185 Writing an equation for a function after a vertical translation  
 alge262 Graphing a cubic function of the form  $y = ax^3$

### Perimeter, Area and Volume

geom300 Perimeter of a square or a rectangle  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom078 Sides of polygons having the same perimeter  
 geom019 Area of a square or a rectangle  
 geom351 Areas of rectangles with the same perimeter  
 geom340 Area of a piecewise rectangular figure  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom142 Word problem involving the area between two rectangles  
 geom801 Area of a triangle  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom344 Area involving rectangles and triangles  
 geom213 Area of a regular polygon  
 geom832 Area of quadrilaterals in the coordinate plane  
 alge724 Finding an area in terms of variables

geom218 Finding the radius or the diameter of a circle given its circumference  
 geom802 Circumference and area of a circle  
 geom301 Perimeter involving rectangles and circles  
 geom302 Area involving rectangles and circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom805 Arc length and area of a sector of a circle  
 geom219 Nets of solids  
 geom861 Nets of solids: Advanced  
 geom865 Measuring the net of a solid to find surface area or volume  
 geom348 Vertices, edges, and faces of a solid  
 geom816 Side views of a solid made of cubes  
 geom031 Surface area of a cube or a rectangular prism  
 geom345 Surface area of a piecewise rectangular prism made of unit cubes  
 geom091 Surface area of a triangular prism  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom842 Surface area of a sphere  
 geom338 Surface area involving prisms or cylinders  
 geom830 Counting the cubes in a solid made of cubes  
 geom354 Volume of a rectangular prism made of unit cubes  
 geom311 Volume of a rectangular prism  
 geom505 Volume of a piecewise rectangular prism  
 geom090 Volume of a triangular prism  
 geom035 Volume of a cylinder  
 geom841 Volume of a sphere  
 geom033 Volume of a pyramid  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom092 Word problem involving the rate of filling or emptying a cylinder

## Geometry

geom358 Identifying parallel and perpendicular lines  
 geom521 Segment addition and midpoints  
 geom039 Finding supplementary and complementary angles  
 geom304 Identifying corresponding and alternate angles  
 geom305 Identifying supplementary and vertical angles  
 geom530 Solving equations involving vertical angles  
 geom503 Solving equations involving angles and two pairs of parallel lines  
 geom850 Angle addition with relationships between angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom309 Finding an angle measure for a triangle sharing a side with another triangle  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom852 The sum of interior angle measures in a convex polygon  
 geom814 Angle measure in a circle graph  
 geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom044 Pythagorean Theorem  
 geom862 Using the Pythagorean Theorem repeatedly  
 geom860 Special right triangles: Decimal answers  
 geom068 Computing an area using the Pythagorean Theorem  
 geom854 Relationship between angle measures and side lengths in a triangle  
 geom844 Using triangle inequality to determine if side lengths form a triangle  
 geom310 Properties of quadrilaterals  
 geom528 Finding measures involving diagonals of parallelograms  
 geom532 Classifying parallelograms  
 geom818 Finding the coordinates of a point to make a parallelogram  
 geom819 Finding coordinates of vertices of polygons  
 geom359 Identifying congruent shapes on a grid

geom863 Congruence in the coordinate plane  
geom360 Identifying similar or congruent shapes on a grid  
geom037 Similar polygons  
geom038 Similar right triangles  
geom337 Indirect measurement  
geom510 Triangles and parallel lines  
geom507 Right triangles and geometric mean  
geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids  
geom847 Similar solids: Problem type 2  
geom133 Ratio of volumes  
geom330 Translating a polygon  
geom357 Identifying transformations  
geom331 Using a translated point to find coordinates of other translated points  
geom332 Reflecting a polygon over a vertical or horizontal line  
geom333 Finding the coordinates of three points reflected over an axis  
geom334 Drawing lines of symmetry  
geom335 Rotating a figure about the origin  
geom336 Dilating a figure  
geom815 Finding an angle of rotation

### Probability and Statistics

mstat044 Interpreting a double bar graph  
mstat007 Interpreting a line graph  
mstat051 Choosing a graph to fit a narrative: Advanced  
stat804 Interpreting a circle graph or pie chart  
mstat043 Interpreting a Venn diagram of 3 sets  
mstat030 Sketching the line of best fit  
mstat023 Scatter plots and correlation  
mstat006 Constructing a box-and-whisker plot  
mstat052 Identifying independent and dependent variables from equations or real-world situations  
mstat003 Mode of a data set  
mstat028 Mean and median of a data set  
mstat050 Choosing a measure to describe data  
stat803 Finding the value for a new score that will yield a given mean  
mstat029 How changing a value affects the mean and median  
stat802 Rejecting unreasonable claims based on average statistics  
stat805 Making a reasonable inference based on proportion statistics  
mstat025 Finding if a question can be answered by the data  
mstat040 Introduction to the counting principle  
mstat008 Word problem involving permutations  
mstat009 Word problem involving combinations  
mstat026 Introduction to the probability of an event  
mstat010 Probability of an event  
stat106 Outcomes and event probability  
stat112 Probabilities involving two dice  
mstat011 Area as probability  
mstat012 Probability of independent events  
mstat013 Probability of dependent events  
mstat046 Experimental and theoretical probability  
mstat047 Introduction to expectation

## B.68 Texas M.S. Math 1/LV6

### Whole Numbers



arith124 Whole number place value: Problem type 1  
arith125 Whole number place value: Problem type 2  
arith066 Expanded form  
arith643 Expanded form with zeros  
arith028 Numeral translation: Problem type 1  
arith060 Numeral translation: Problem type 2  
arith633 One-digit addition with carry  
arith634 Addition of 3 or 4 one-digit numbers  
arith001 Addition without carry  
arith635 Adding a 2-digit number and a 1-digit number with carry  
arith050 Addition with carry  
arith630 Addition with carry to the hundreds place  
arith012 Addition of large numbers  
arith636 Subtracting a 1-digit number from a 2-digit number  
arith007 Subtraction without borrowing  
arith006 Subtraction with borrowing  
arith682 Subtraction with multiple regrouping steps  
arith637 Subtraction and regrouping with zeros  
arith653 Fact families for addition and subtraction  
arith613 Word problem with addition or subtraction of whole numbers  
mstat061 Describing an increasing or decreasing pattern from a table of values  
arith126 Multiplication as repeated addition  
arith008 One-digit multiplication  
arith639 Using multiplication to find the number of squares  
arith679 Multiplication by 10, 100, and 1000  
arith003 Multiplication without carry  
arith004 Multiplication with carry  
arith632 Multiplication with trailing zeros: Problem type 1  
arith615 Introduction to multiplication of large numbers  
arith675 Understanding multiplication of a one-digit number with a larger number  
arith638 Multiplication with trailing zeros: Problem type 2  
arith014 Multiplication of large numbers  
arith641 Multiples: Problem type 1  
arith642 Multiples: Problem type 2  
arith075 Division facts  
arith654 Fact families for multiplication and division  
arith614 Word problem with multiplication or division of whole numbers  
arith130 Word problem with multiplication and addition or subtraction of whole numbers  
arith451 Word problem on unit rates associated with ratios of whole numbers: Whole number answers  
arith243 Division of whole numbers given in fractional form  
arith711 Division involving zero  
arith052 Division without carry  
arith005 Division with carry  
arith901 Whole number division: 2-digit by 2-digit, no remainder  
arith902 Whole number division: 3-digit by 2-digit, no remainder  
arith680 Division with trailing zeros: Problem type 1  
arith649 Division with trailing zeros: Problem type 2  
arith616 Quotient and remainder: Problem type 1  
arith644 Word problem on quotient and remainder  
arith617 Quotient and remainder: Problem type 2  
arith631 Quotient and remainder: Problem type 3  
arith650 Division involving quotients with intermediate zeros  
arith023 Word problem with division of whole numbers and rounding  
arith651 Introduction to inequalities  
arith652 Comparing a numerical expression with a number  
arith077 Ordering large numbers  
arith078 Rounding to tens or hundreds  
arith123 Rounding to hundreds or thousands  
arith061 Rounding to thousands, ten thousands, or hundred thousands  
arith101 Estimating a sum of whole numbers  
arith102 Estimating a difference of whole numbers  
arith677 Estimating a product

arith678 Estimating a quotient  
arith692 Writing expressions using exponents  
arith233 Introduction to exponents  
arith683 Power of 10: Positive exponent  
arith645 Introduction to parentheses  
arith865 Comparing numerical expressions with parentheses  
arith681 Introduction to order of operations  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
arith646 Even and odd numbers  
arith647 Divisibility rules for 2, 5, and 10  
arith648 Divisibility rules for 3 and 9  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith516 Greatest common factor of 3 numbers  
arith409 Introduction to the distributive property  
arith657 Understanding the distributive property  
arith410 Introduction to factoring with numbers  
arith411 Factoring a sum or difference of whole numbers  
arith070 Least common multiple of 2 numbers  
arith804 Least common multiple of 3 numbers  
arith418 Word problem involving the least common multiple of 2 numbers  
arith240 Word problem with common multiples  
alge284 Evaluating an algebraic expression: Whole number addition or subtraction  
alge683 Evaluating an algebraic expression: Whole number multiplication or division  
alge285 Evaluating an algebraic expression: Whole numbers with two operations  
alge649 Evaluating a formula  
alge648 Evaluating an algebraic expression: Whole numbers with one operation and an exponent  
alge832 Evaluating an algebraic expression: Whole number operations and exponents  
alge733 Writing a one-step expression for a real-world situation  
alge831 Translating a phrase into a one-step expression  
alge291 Translating a phrase into a two-step expression  
alge650 Identifying solutions to a one-step linear equation: Problem type 1  
alge651 Identifying solutions to a one-step linear equation: Problem type 2  
alge009 Additive property of equality with whole numbers  
alge813 Introduction to solving an equation with multiplication or division  
alge008 Multiplicative property of equality with whole numbers  
alge016 Translating a sentence into a one-step equation  
geom339 Perimeter of a polygon  
geom300 Perimeter of a square or a rectangle  
geom019 Area of a square or a rectangle  
geom866 Perimeter and area on a grid

## Decimals

arith110 Decimal place value: Tenths and hundredths  
arith220 Decimal place value: Hundreds to ten thousandths  
arith714 Writing a decimal number less than 1 given its name  
arith715 Writing a decimal number greater than 1 given its name  
arith716 Writing a decimal number given its name: Advanced  
arith829 Reading decimal position on a number line: Tenths  
arith830 Reading decimal position on a number line: Hundredths  
arith831 Understanding decimal position on a number line using zoom: Hundredths  
arith832 Understanding decimal position on a number line using zoom: Thousandths  
arith129 Introduction to ordering decimals  
arith608 Ordering decimals

arith221 Rounding decimals  
 arith624 Addition of aligned decimals  
 arith013 Decimal addition with 3 numbers  
 arith734 Subtraction of aligned decimals  
 arith735 Decimal subtraction: Basic  
 arith736 Decimal subtraction: Advanced  
 arith737 Decimal addition and subtraction with 3 or more numbers  
 arith131 Estimating a decimal sum or difference  
 arith668 Addition with money  
 arith669 Subtraction with money  
 arith132 Word problem with addition or subtraction of 2 decimals  
 arith133 Word problem with addition of 3 or 4 decimals and whole numbers  
 arith134 Word problem with subtraction of a whole number and a decimal: Regrouping with zeros  
 arith739 Introduction to decimal multiplication  
 arith017 Multiplication of a decimal by a whole number  
 arith055 Decimal multiplication: Problem type 1  
 arith046 Decimal multiplication: Problem type 2  
 arith082 Multiplication of a decimal by a power of ten  
 arith738 Multiplication of a decimal by a power of 0.1  
 arith740 Multiplication of decimals that have a product less than 0.1  
 arith752 Estimating a product of decimals  
 arith135 Word problem with multiplication of a decimal and a whole number  
 arith137 Word problem with multiplication of two decimals  
 arith628 Word problem with multiple decimal operations: Problem type 1  
 arith744 Whole number division with decimal answers  
 arith081 Division of a decimal by a whole number  
 arith743 Division of a decimal by a 1-digit decimal  
 arith019 Division of a decimal by a 2-digit decimal  
 arith083 Division of a decimal by a power of ten  
 arith742 Division of a decimal by a power of 0.1  
 arith745 Decimal division with rounding  
 arith136 Word problem with division of a decimal and a whole number  
 arith138 Word problem with division of two decimals  
 arith629 Word problem with multiple decimal operations: Problem type 2  
 arith103 Average of two numbers  
 arith753 Squaring decimal bases: Products greater than 0.1  
 arith741 Exponents and decimals: Products less than 0.1  
 arith720 Order of operations with decimals: Problem type 1  
 arith746 Order of operations with decimals: Problem type 2  
 arith747 Order of operations with decimals: Problem type 3  
 scinot023 Introduction to scientific notation with positive exponents  
 arith036 Scientific notation with positive exponent

## Fractions

arith623 Introduction to fractions  
 arith665 Understanding equivalent fractions  
 arith212 Equivalent fractions  
 arith666 Introduction to simplifying a fraction  
 arith067 Simplifying a fraction  
 arith687 Fractional position on a number line  
 arith667 Plotting fractions on a number line  
 arith044 Ordering fractions with the same denominator  
 arith091 Ordering fractions with the same numerator  
 arith092 Using a common denominator to order fractions  
 arith079 Product of a unit fraction and a whole number  
 arith086 Product of a fraction and a whole number: Problem type 1  
 arith119 Introduction to fraction multiplication  
 arith053 Fraction multiplication  
 arith812 Product of a fraction and a whole number: Problem type 2

arith905 Determining if a quantity is increased or decreased when multiplied by a fraction  
arith509 Modeling multiplication of proper fractions  
arith813 Multiplication of 3 fractions  
arith818 Word problem involving fractions and multiplication  
arith095 Multi-step word problem involving fractions and multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith507 Fact families for multiplication and division of fractions  
arith508 Modeling division of a whole number by a fraction  
arith819 Word problem involving fractions and division  
arith618 Addition or subtraction of fractions with the same denominator  
arith802 Addition or subtraction of fractions with the same denominator and simplification  
arith801 Finding the LCD of two fractions  
arith109 Addition or subtraction of unit fractions  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
arith803 Addition and subtraction of 3 fractions with different denominators  
arith805 Word problem involving addition or subtraction of fractions with different denominators  
arith100 Fractional part of a circle  
arith662 Writing a mixed number and an improper fraction for a shaded region  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith215 Addition or subtraction of mixed numbers with the same denominator  
arith084 Addition of mixed numbers with the same denominator and carry  
arith216 Subtraction of mixed numbers with the same denominator and borrowing  
arith806 Addition or subtraction of mixed numbers with different denominators and no carry or borrow  
arith808 Addition of mixed numbers with different denominators and carry  
arith809 Subtraction of mixed numbers with different denominators and borrowing  
arith807 Addition and subtraction of 3 mixed numbers with different denominators  
arith810 Word problem involving addition or subtraction of mixed numbers with different denominators  
arith815 Mixed number multiplication  
arith816 Multiplication of a mixed number and a whole number  
arith817 Division with a mixed number and a whole number  
arith068 Mixed number division  
arith820 Word problem involving multiplication or division with mixed numbers  
arith127 Writing a decimal and a fraction for a shaded region  
arith725 Converting a fraction with a denominator of 10 or 100 to a decimal  
arith726 Converting a fraction with a denominator of 100 or 1000 to a decimal  
arith113 Converting a proper fraction with a denominator of 2, 4, or 5 to a decimal  
arith114 Converting a mixed number with a denominator of 2, 4, or 5 to a decimal  
arith727 Converting a fraction to a terminating decimal: Basic  
arith728 Converting a fraction to a terminating decimal: Advanced  
arith730 Converting a fraction to a repeating decimal: Basic  
arith731 Converting a fraction to a repeating decimal: Advanced  
arith733 Using a calculator to convert a fraction to a rounded decimal  
arith111 Converting a mixed number to a terminating decimal: Basic  
arith112 Converting a mixed number to a terminating decimal: Advanced  
arith732 Converting a fraction or mixed number to a rounded decimal  
arith609 Ordering fractions and decimals  
arith717 Converting a decimal to a proper fraction without simplifying: Basic  
arith719 Converting a decimal to a proper fraction without simplifying: Advanced  
arith718 Converting a decimal to a proper fraction in simplest form: Basic  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith721 Converting a decimal to a mixed number and an improper fraction without simplifying  
arith722 Converting a decimal to a mixed number and an improper fraction in simplest form: Basic  
arith724 Converting a decimal to a mixed number and an improper fraction in simplest form: Advanced  
arith513 Identifying rational decimal numbers  
arith821 Exponents and fractions  
arith859 Order of operations with fractions: Problem type 1  
arith860 Order of operations with fractions: Problem type 2  
arith861 Order of operations with fractions: Problem type 3

arith695 Complex fraction without variables: Problem type 1  
 arith748 Addition or subtraction with a decimal and a mixed number  
 arith749 Multiplication with a decimal and a fraction

### Ratios, Proportions, and Measurement

arith823 Writing ratios using different notations  
 arith663 Writing ratios for real-world situations  
 arith450 Identifying statements that describe a ratio  
 arith824 Simplifying a ratio of whole numbers: Problem type 1  
 arith825 Simplifying a ratio of decimals  
 arith827 Finding a unit price  
 arith455 Using tables to compare ratios  
 arith828 Computing unit prices to find the better buy  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 arith064 Solving a word problem on proportions using a unit rate  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 alge281 Function tables with one-step rules  
 arith452 Finding missing values in a table of equivalent ratios  
 arith453 Using a table of equivalent ratios to find a missing quantity in a ratio  
 arith504 Writing an equation to represent a proportional relationship  
 alge819 Solving a proportion of the form  $x/a=b/c$ : Basic  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 arith045 Word problem with powers of ten  
 geom359 Identifying congruent shapes on a grid  
 geom360 Identifying similar or congruent shapes on a grid  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom538 Finding lengths using scale models  
 geom539 Finding a scale factor: Same units  
 geom541 Using a scale drawing to find actual area  
 geom542 Reproducing a scale drawing at a different scale  
 mstat058 Choosing a measuring tool  
 mstat059 Choosing U.S. Customary measurement units  
 mstat033 Measuring length to the nearest inch  
 mstat034 Measuring length to the nearest quarter or half inch  
 unit005 U.S. Customary unit conversion with whole number values  
 mstat035 Conversions involving measurements in feet and inches  
 mstat036 Adding measurements in feet and inches  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 unit007 U.S. Customary unit conversion with mixed number values: One-step conversion  
 unit008 U.S. Customary unit conversion with mixed number values: Two-step conversion  
 unit009 U.S. Customary area unit conversion with whole number values  
 mstat060 Choosing metric measurement units  
 mstat063 Measuring length to the nearest centimeter  
 mstat064 Measuring length to the nearest millimeter  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit012 Time unit conversion with whole number values  
 time009 Introduction to adding time  
 time006 Adding time  
 time011 Introduction to elapsed time  
 time007 Elapsed time  
 mstat062 Reading a positive temperature from a thermometer

mstat065 Converting between temperatures in Fahrenheit and Celsius  
arith826 Simplifying a ratio of whole numbers: Problem type 2  
alge218 Solving a word problem involving rates and time conversion  
unit034 Converting between metric and U.S. Customary unit systems  
unit035 Converting between compound units: Basic  
unit036 Converting between compound units: Advanced

## Percents

arith836 Converting a fraction with a denominator of 100 to a percentage  
arith837 Converting a percentage to a fraction with a denominator of 100  
arith674 Finding the percentage of a grid that is shaded  
arith903 Representing benchmark percentages on a grid  
arith723 Introduction to converting a percentage to a decimal  
arith833 Introduction to converting a decimal to a percentage  
arith834 Converting between percentages and decimals  
arith841 Converting a mixed number percentage to a decimal  
arith835 Converting between percentages and decimals in a real-world situation  
arith090 Converting a percentage to a fraction in simplest form  
arith839 Converting a decimal percentage to a fraction  
arith838 Converting a fraction to a percentage: Denominator of 4, 5, or 10  
arith904 Finding benchmark fractions and percentages for a figure  
arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
arith843 Using a calculator to convert a fraction to a rounded percentage  
arith842 Converting a fraction to a percentage in a real-world situation  
arith840 Finding a percentage of a whole number  
arith030 Finding a percentage of a whole number without a calculator: Basic  
arith844 Finding a percentage of a whole number without a calculator: Advanced  
arith862 Applying the percent equation: Problem type 1  
arith863 Applying the percent equation: Problem type 2  
arith845 Finding a percentage of a total amount: Real-world situations  
arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount  
arith857 Estimating a tip without a calculator  
arith069 Writing a ratio as a percentage without a calculator  
arith850 Finding the rate of a tax or commission  
arith849 Finding the total amount given the percentage of a partial amount  
stat805 Making a reasonable inference based on proportion statistics  
stat804 Interpreting a circle graph or pie chart  
arith856 Finding a percentage of a total amount in a circle graph  
stat801 Computations from a circle graph  
arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
arith851 Finding the final amount given the original amount and a percentage increase or decrease  
arith847 Finding the sale price given the original price and percent discount  
arith074 Finding the sale price without a calculator given the original price and percent discount  
arith848 Finding the total cost including tax or markup  
arith855 Finding the original amount given the result of a percentage increase or decrease  
arith031 Finding the original price given the sale price and percent discount  
arith858 Finding the percentage increase or decrease: Basic  
arith225 Finding the percentage increase or decrease: Advanced  
arith232 Finding simple interest without a calculator  
arith918 Comparing discounts  
arith914 Calculations involving paying for college  
arith916 Computing percentages for categories of a budget  
arith921 Comparing annual salaries of different occupations  
arith911 Calculations involving purchases with debit and credit cards  
arith950 Comparing costs of checking accounts  
arith951 Balancing a check register  
arith912 Reading a credit report  
arith913 Understanding the impact of a credit score

**Integers and Rational Numbers**

alge286 Plotting integers on a number line  
 mstat038 Reading the temperature from a thermometer  
 arith691 Ordering integers  
 arith415 Using a number line to compare integers  
 arith699 Writing a signed number for a real-world situation  
 arith400 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 1  
 arith511 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 2  
 arith416 Comparing signed numbers relating to a real-world situation  
 arith402 Plotting opposite integers on a number line  
 arith403 Finding opposites of integers  
 arith071 Absolute value of a number  
 arith412 Finding all numbers with a given absolute value  
 arith605 Plotting rational numbers on a number line  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith431 Identifying a sum as a point located a given distance from another point  
 arith430 Identifying relative change when combining two quantities  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith754 Addition and subtraction with 3 integers  
 arith755 Addition and subtraction with 4 or 5 integers  
 arith440 Operations with absolute value: Problem type 1  
 arith104 Operations with absolute value: Problem type 2  
 alge694 Computing the distance between two integers on a number line  
 arith433 Computing and understanding distances between integers on a number line  
 arith701 Word problem with addition or subtraction of integers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers  
 arith952 Word problem with multiplication or division of integers  
 arith702 Exponents and integers: Problem type 1  
 arith118 Order of operations with integers  
 arith600 Order of operations with integers and exponents  
 alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 scinot024 Introduction to scientific notation with negative exponents  
 arith037 Scientific notation with negative exponent  
 scinot012 Converting between scientific notation and standard form in a real-world situation  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 arith750 Signed decimal multiplication  
 arith751 Signed decimal division  
 alge660 Identifying equivalent signed fractions  
 arith822 Signed fraction multiplication: Basic  
 arith105 Signed fraction multiplication: Advanced  
 arith814 Signed fraction division  
 arith116 Signed fraction addition or subtraction: Basic  
 arith864 Signed fraction subtraction involving double negation  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith811 Addition and subtraction of 3 fractions involving signs  
 geom525 Computing distances between decimals on the number line  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
 alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
 alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
 alge001 Identifying numbers as integers or non-integers  
 alge647 Identifying like terms  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients



arith655 Introduction to properties of addition  
 alge187 Properties of addition  
 alge665 Combining like terms: Decimal coefficients  
 alge666 Combining like terms: Fractional coefficients  
 alge310 Multiplying a constant and a linear monomial  
 alge606 Distributive property: Whole number coefficients  
 alge610 Distributive property: Fractional coefficients  
 alge605 Factoring a linear binomial  
 alge612 Identifying parts in an algebraic expression  
 alge613 Identifying equivalent algebraic expressions  
 arith656 Introduction to properties of multiplication  
 alge188 Properties of real numbers  
 alge608 Using distribution and combining like terms to simplify: Univariate  
 alge667 Identifying properties used to simplify an algebraic expression

### Equations and Inequalities

alge800 Additive property of equality with decimals  
 alge801 Additive property of equality with fractions and mixed numbers  
 alge010 Additive property of equality with integers  
 alge836 Additive property of equality with signed fractions  
 alge825 Multiplicative property of equality with decimals  
 alge646 Multiplicative property of equality with whole numbers: Fractional answers  
 alge820 Multiplicative property of equality with fractions  
 alge797 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge803 Using two steps to solve an equation with whole numbers  
 alge266 Additive property of equality with a negative coefficient  
 alge006 Solving a two-step equation with integers  
 alge920 Introduction to solving an equation with parentheses  
 alge837 Solving a multi-step equation given in fractional form  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge611 Introduction to solving a linear equation with a variable on each side  
 alge658 Introduction to solving a rational equation  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge671 Choosing stories that can be represented by given one-step equations  
 alge841 Translating a sentence into a multi-step equation  
 alge628 Writing an equation of the form  $Ax + B = C$  to solve a word problem  
 alge618 Comparing arithmetic and algebraic solutions to a word problem  
 alge672 Choosing stories that can be represented by given two-step equations  
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
 alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
 alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge653 Introduction to identifying solutions to an inequality  
 alge748 Writing an inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge166 Graphing a compound inequality on the number line  
 alge652 Identifying solutions to a one-step linear inequality  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge809 Multiplicative property of inequality with whole numbers  
 alge854 Multiplicative property of inequality with integers  
 alge636 Solving a two-step linear inequality with whole numbers  
 alge846 Translating a sentence into a multi-step inequality  
 alge621 Solving a word problem using a one-step linear inequality

alge623 Solving a word problem using a two-step linear inequality

### Graphs and Functions

alge278 Reading a point in quadrant 1  
 alge279 Plotting a point in quadrant 1  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge692 Plotting a point in quadrant 1: Mixed number coordinates  
 alge693 Plotting a point in the coordinate plane: Mixed number coordinates  
 arith404 Naming the quadrant or axis of a point given its graph  
 arith405 Naming the quadrant or axis of a point given its coordinates  
 arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
 alge695 Finding distances between points that share a common coordinate given the graph  
 alge696 Finding distances between points that share a common coordinate given their coordinates  
 arith454 Making a table and plotting points given a unit rate  
 alge283 Graphing whole number functions  
 alge282 Function tables with two-step rules  
 alge850 Table for a linear equation  
 fun001 Table for a linear function  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 alge280 Graphing a line in quadrant 1  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
 mstat007 Interpreting a line graph  
 alge575 Finding slope given the graph of a line in quadrant 1 that models a real-world situation  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines  
 alge630 Finding outputs of a one-step function that models a real-world situation: Two variable equation  
 alge632 Finding outputs of a two-step function with decimals that models a real-world situation: Two variable equation  
 alge633 Finding inputs and outputs of a two-step function that models a real-world situation: Two variable equation  
 alge655 Writing and evaluating a function that models a real-world situation: Basic  
 alge897 Writing and evaluating a function that models a real-world situation: Advanced  
 alge654 Graphing ordered pairs and writing an equation from a table of values in context  
 alge656 Writing an equation and drawing its graph to model a real-world situation: Basic  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge818 Finding the initial amount and rate of change given a graph of a linear function  
 alge670 Identifying independent and dependent quantities from tables and graphs  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 mstat018 Choosing a graph to fit a narrative: Basic  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge263 Interpreting the graphs of two functions  
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge732 Finding patterns in shapes  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 alge907 Finding the next terms of a geometric sequence with signed numbers

alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio

### Angles, Lines, and Polygons

geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom551 Finding the complement or supplement of an angle given a figure  
 geom305 Identifying supplementary and vertical angles  
 geom553 Finding angle measures given two intersecting lines  
 geom304 Identifying corresponding and alternate angles  
 geom349 Naming segments, rays, and lines  
 geom358 Identifying parallel and perpendicular lines  
 geom554 Finding angle measures given two parallel lines cut by a transversal  
 geom154 Constructing the perpendicular bisector of a line segment  
 geom158 Constructing an angle bisector  
 geom159 Constructing congruent angles  
 geom150 Constructing a pair of perpendicular lines  
 geom157 Constructing a pair of parallel lines  
 geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom519 Identifying and naming congruent parts of congruent triangles  
 geom543 Drawing a circle with a given radius or diameter  
 geom544 Creating triangles from given side lengths: Problem type 1  
 geom634 Creating triangles from given side lengths: Problem type 2  
 geom844 Using triangle inequality to determine if side lengths form a triangle  
 geom548 Determining if a triangle is possible based on given angle measures  
 geom546 Drawing triangles with given conditions: Angle measures  
 geom547 Drawing triangles with given conditions: Side lengths and angle measures  
 geom545 Drawing triangles with given side lengths using a compass  
 geom361 Naming polygons  
 mstat042 Interpreting a Venn diagram of 2 sets  
 geom536 Drawing and identifying a polygon in the coordinate plane  
 geom867 Identifying parallelograms, rectangles, and squares  
 geom310 Properties of quadrilaterals  
 geom532 Classifying parallelograms  
 geom818 Finding the coordinates of a point to make a parallelogram  
 geom870 Sum of the angle measures of a quadrilateral  
 geom852 The sum of interior angle measures in a convex polygon  
 arith016 Square root of a perfect square  
 alge413 Finding all square roots of a number  
 arith763 Using a calculator to approximate a square root  
 arith602 Estimating a square root  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem  
 geom603 Identifying side lengths that give right triangles

### Transformations

geom357 Identifying transformations  
 geom355 Introduction to translations

geom596 Translating a point and giving its coordinates: One step  
 geom909 Translating a point and giving its coordinates: Two steps  
 geom597 Properties of translated figures  
 geom598 Determining if figures are related by a translation  
 geom330 Translating a polygon  
 geom356 Introduction to reflections  
 arith408 Reflecting a point across an axis  
 geom533 Reflecting a point across both coordinate axes  
 geom590 Reflecting a point across an axis and giving its coordinates  
 arith407 Finding the coordinates of a point reflected across an axis  
 geom560 Finding the coordinates of a point reflected across both axes  
 geom534 Reflecting a polygon across the x-axis or y-axis  
 geom591 Properties of reflected figures  
 geom592 Determining if figures are related by a reflection  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom334 Drawing lines of symmetry  
 geom602 Finding the coordinates of a point reflected across an axis and translated  
 geom815 Finding an angle of rotation  
 geom624 Identifying rotational symmetry and angles of rotation  
 geom593 Rotating a point and giving its coordinates  
 geom594 Properties of rotated figures  
 geom595 Determining if figures are related by a rotation  
 geom335 Rotating a figure about the origin  
 geom580 Determining if figures are congruent and related by a transformation  
 geom606 Dilating a segment and giving the coordinates of its endpoints  
 geom607 The effect of dilation on side length  
 geom608 Determining if figures are related by a dilation  
 geom636 The effect of dilation on area

### Perimeters, Areas, and Volumes

geom618 Perimeter of a polygon involving mixed numbers and fractions  
 geom078 Sides of polygons having the same perimeter  
 geom221 Finding the missing length in a figure  
 geom353 Perimeter of a piecewise rectangular figure  
 alge615 Writing algebraic expressions for the perimeter of a figure  
 geom620 Area of a rectangle involving fractions  
 geom619 Area of a rectangle involving mixed numbers and fractions  
 geom350 Distinguishing between the area and perimeter of a rectangle  
 geom351 Areas of rectangles with the same perimeter  
 geom869 Estimates and exact answers  
 alge616 Writing algebraic expressions for the area of a figure  
 geom410 Word problem involving the area of a square or a rectangle  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom340 Area of a piecewise rectangular figure  
 geom562 Area between two rectangles  
 geom142 Word problem involving the area between two rectangles  
 geom501 Finding the area of a right triangle on a grid  
 geom509 Finding the area of a right triangle or its corresponding rectangle  
 geom801 Area of a triangle  
 geom517 Finding the area of a trapezoid on a grid by using triangles and rectangles  
 geom344 Area involving rectangles and triangles  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom537 Finding the perimeter or area of a rectangle in the coordinate plane  
 geom832 Area of quadrilaterals in the coordinate plane  
 geom347 Introduction to a circle: Diameter, radius, and chord  
 geom016 Circumference of a circle  
 geom218 Finding the radius or the diameter of a circle given its circumference  
 geom838 Circumference ratios

geom301 Perimeter involving rectangles and circles  
 geom026 Area of a circle  
 geom802 Circumference and area of a circle  
 geom570 Distinguishing between the area and circumference of a circle  
 geom302 Area involving rectangles and circles  
 geom563 Area between two concentric circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom868 Classifying solids  
 geom348 Vertices, edges, and faces of a solid  
 geom830 Counting the cubes in a solid made of cubes  
 geom816 Side views of a solid made of cubes  
 geom550 Identifying horizontal and vertical cross sections of solids  
 geom311 Volume of a rectangular prism  
 geom354 Volume of a rectangular prism made of unit cubes  
 geom518 Volume of a solid made of cubes with unit fraction edge lengths  
 geom535 Volume of a rectangular prism with fractional edge lengths  
 alge617 Writing equivalent expressions for the volume of a rectangular prism  
 geom571 Word problem involving the volume of a rectangular prism  
 geom558 Word problem involving the rate of filling or emptying a rectangular prism  
 geom505 Volume of a piecewise rectangular prism  
 geom090 Volume of a triangular prism  
 geom572 Word problem involving the volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom637 Relating the volumes of a rectangular prism and a rectangular pyramid  
 geom638 Relating the volumes of a triangular prism and a triangular pyramid  
 geom035 Volume of a cylinder  
 geom573 Word problem involving the volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom622 Volume of a cone  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom639 Relating the volumes of a cylinder and a cone  
 geom575 Word problem involving the volume of a cone  
 geom219 Nets of solids  
 geom031 Surface area of a cube or a rectangular prism  
 geom632 Surface area of a rectangular prism made of unit cubes  
 geom555 Distinguishing between surface area and volume  
 geom556 Using a net to find the surface area of a rectangular prism  
 geom576 Word problem involving the surface area of a rectangular prism  
 geom345 Surface area of a piecewise rectangular prism made of unit cubes  
 geom091 Surface area of a triangular prism  
 geom557 Using a net to find the surface area of a triangular prism  
 geom621 Surface area of a cylinder  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom578 Word problem involving the surface area of a cylinder

### Data Analysis and Probability

mstat088 Identifying statistical questions  
 mstat080 Choosing an appropriate method for gathering data: Problem type 1  
 mstat081 Choosing an appropriate method for gathering data: Problem type 2  
 mstat056 Interpreting a tally table  
 mstat097 Constructing a two-way frequency table: Basic  
 mstat098 Constructing a two-way frequency table: Advanced  
 mstat049 Computing a percentage from a table of values  
 mstat087 Making an inference using a two-way frequency table  
 stat020 Calculating relative frequencies in a contingency table  
 mstat025 Finding if a question can be answered by the data  
 mstat037 Constructing a line plot  
 mstat005 Constructing a bar graph for non-numerical data

mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat057 Interpreting a pictograph table  
 mstat031 Interpreting a stem-and-leaf plot  
 geom814 Angle measure in a circle graph  
 mstat094 Constructing a scatter plot  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat092 Finding the mode and range from a line plot  
 mstat001 Mean of a data set  
 mstat077 Using a model to find the mean  
 mstat075 Understanding the mean graphically: Two bars  
 mstat076 Understanding the mean graphically: Four or more bars  
 mstat091 Finding the mean of a symmetric distribution  
 mstat079 Finding sample size and comparing samples for estimating the mean  
 mstat089 Computations involving the mean, sample size, and sum of a data set  
 stat803 Finding the value for a new score that will yield a given mean  
 stat802 Rejecting unreasonable claims based on average statistics  
 mstat066 Weighted mean  
 mstat028 Mean and median of a data set  
 mstat029 How changing a value affects the mean and median  
 mstat095 Finding outliers in a data set  
 mstat053 Choosing the best measure to describe data  
 mstat078 Comparing measures of center and variation  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat072 Five-number summary and interquartile range  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 mstat082 Computing mean absolute deviation from a list of numerical values  
 mstat083 Computing mean absolute deviation from a bar graph  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 mstat099 Determining a sample space and outcomes for a simple event  
 mstat100 Determining a sample space and outcomes for a compound event  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 mstat054 Classifying likelihood  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat039 Understanding likelihood  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events

## B.69 Texas M.S. Math 2

### Whole Numbers and Integers

arith124 Whole number place value: Problem type 1  
arith125 Whole number place value: Problem type 2  
arith066 Expanded form  
arith643 Expanded form with zeros  
arith028 Numeral translation: Problem type 1  
arith060 Numeral translation: Problem type 2  
arith630 Addition with carry to the hundreds place  
arith012 Addition of large numbers  
arith006 Subtraction with borrowing  
arith682 Subtraction with multiple regrouping steps  
arith637 Subtraction and regrouping with zeros  
arith613 Word problem with addition or subtraction of whole numbers  
mstat061 Describing an increasing or decreasing pattern from a table of values  
arith126 Multiplication as repeated addition  
arith004 Multiplication with carry  
arith615 Introduction to multiplication of large numbers  
arith675 Understanding multiplication of a one-digit number with a larger number  
arith014 Multiplication of large numbers  
arith641 Multiples: Problem type 1  
arith642 Multiples: Problem type 2  
arith614 Word problem with multiplication or division of whole numbers  
arith130 Word problem with multiplication and addition or subtraction of whole numbers  
arith451 Word problem on unit rates associated with ratios of whole numbers: Whole number answers  
arith243 Division of whole numbers given in fractional form  
arith711 Division involving zero  
arith005 Division with carry  
arith901 Whole number division: 2-digit by 2-digit, no remainder  
arith902 Whole number division: 3-digit by 2-digit, no remainder  
arith616 Quotient and remainder: Problem type 1  
arith617 Quotient and remainder: Problem type 2  
arith631 Quotient and remainder: Problem type 3  
arith650 Division involving quotients with intermediate zeros  
arith023 Word problem with division of whole numbers and rounding  
arith651 Introduction to inequalities  
arith652 Comparing a numerical expression with a number  
arith077 Ordering large numbers  
arith078 Rounding to tens or hundreds  
arith123 Rounding to hundreds or thousands  
arith061 Rounding to thousands, ten thousands, or hundred thousands  
arith101 Estimating a sum of whole numbers  
arith102 Estimating a difference of whole numbers  
arith677 Estimating a product  
arith678 Estimating a quotient  
arith692 Writing expressions using exponents  
arith233 Introduction to exponents  
arith683 Power of 10: Positive exponent  
arith645 Introduction to parentheses  
arith865 Comparing numerical expressions with parentheses  
arith681 Introduction to order of operations  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
arith646 Even and odd numbers  
arith647 Divisibility rules for 2, 5, and 10  
arith648 Divisibility rules for 3 and 9  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith516 Greatest common factor of 3 numbers  
arith409 Introduction to the distributive property



arith657 Understanding the distributive property  
arith410 Introduction to factoring with numbers  
arith411 Factoring a sum or difference of whole numbers  
arith070 Least common multiple of 2 numbers  
arith804 Least common multiple of 3 numbers  
arith418 Word problem involving the least common multiple of 2 numbers  
arith240 Word problem with common multiples  
alge286 Plotting integers on a number line  
arith691 Ordering integers  
arith415 Using a number line to compare integers  
arith699 Writing a signed number for a real-world situation  
arith400 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 1  
arith511 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 2  
arith416 Comparing signed numbers relating to a real-world situation  
arith402 Plotting opposite integers on a number line  
arith403 Finding opposites of integers  
arith071 Absolute value of a number  
arith412 Finding all numbers with a given absolute value  
arith200 Integer addition: Problem type 1  
arith108 Integer addition: Problem type 2  
arith431 Identifying a sum as a point located a given distance from another point  
arith430 Identifying relative change when combining two quantities  
arith688 Integer subtraction: Problem type 1  
arith689 Integer subtraction: Problem type 2  
arith690 Integer subtraction: Problem type 3  
arith754 Addition and subtraction with 3 integers  
arith755 Addition and subtraction with 4 or 5 integers  
arith440 Operations with absolute value: Problem type 1  
arith104 Operations with absolute value: Problem type 2  
alge694 Computing the distance between two integers on a number line  
arith433 Computing and understanding distances between integers on a number line  
arith701 Word problem with addition or subtraction of integers  
arith231 Integer multiplication and division  
arith800 Multiplication of 3 or 4 integers  
arith952 Word problem with multiplication or division of integers  
arith702 Exponents and integers: Problem type 1  
arith703 Exponents and integers: Problem type 2  
arith118 Order of operations with integers  
arith600 Order of operations with integers and exponents  
alge284 Evaluating an algebraic expression: Whole number addition or subtraction  
alge683 Evaluating an algebraic expression: Whole number multiplication or division  
alge285 Evaluating an algebraic expression: Whole numbers with two operations  
alge649 Evaluating a formula  
alge648 Evaluating an algebraic expression: Whole numbers with one operation and an exponent  
alge832 Evaluating an algebraic expression: Whole number operations and exponents  
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
alge004 Evaluating a quadratic expression: Integers  
alge733 Writing a one-step expression for a real-world situation  
alge831 Translating a phrase into a one-step expression  
alge291 Translating a phrase into a two-step expression  
geom339 Perimeter of a polygon  
geom300 Perimeter of a square or a rectangle  
geom019 Area of a square or a rectangle  
geom866 Perimeter and area on a grid  
geom311 Volume of a rectangular prism  
alge650 Identifying solutions to a one-step linear equation: Problem type 1  
alge651 Identifying solutions to a one-step linear equation: Problem type 2  
alge009 Additive property of equality with whole numbers  
alge010 Additive property of equality with integers  
alge008 Multiplicative property of equality with whole numbers  
alge797 Multiplicative property of equality with integers

**Fractions**

arith623 Introduction to fractions  
arith665 Understanding equivalent fractions  
arith212 Equivalent fractions  
arith666 Introduction to simplifying a fraction  
arith067 Simplifying a fraction  
alge660 Identifying equivalent signed fractions  
arith687 Fractional position on a number line  
arith667 Plotting fractions on a number line  
arith044 Ordering fractions with the same denominator  
arith091 Ordering fractions with the same numerator  
arith092 Using a common denominator to order fractions  
arith079 Product of a unit fraction and a whole number  
arith086 Product of a fraction and a whole number: Problem type 1  
arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith812 Product of a fraction and a whole number: Problem type 2  
arith905 Determining if a quantity is increased or decreased when multiplied by a fraction  
arith509 Modeling multiplication of proper fractions  
arith813 Multiplication of 3 fractions  
arith822 Signed fraction multiplication: Basic  
arith105 Signed fraction multiplication: Advanced  
arith818 Word problem involving fractions and multiplication  
arith095 Multi-step word problem involving fractions and multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith507 Fact families for multiplication and division of fractions  
arith508 Modeling division of a whole number by a fraction  
arith814 Signed fraction division  
arith819 Word problem involving fractions and division  
arith618 Addition or subtraction of fractions with the same denominator  
arith802 Addition or subtraction of fractions with the same denominator and simplification  
alge432 Introduction to adding fractions with variables and common denominators  
arith801 Finding the LCD of two fractions  
arith109 Addition or subtraction of unit fractions  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
arith803 Addition and subtraction of 3 fractions with different denominators  
arith116 Signed fraction addition or subtraction: Basic  
arith864 Signed fraction subtraction involving double negation  
arith106 Signed fraction addition or subtraction: Advanced  
arith811 Addition and subtraction of 3 fractions involving signs  
arith805 Word problem involving addition or subtraction of fractions with different denominators  
arith100 Fractional part of a circle  
arith662 Writing a mixed number and an improper fraction for a shaded region  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith605 Plotting rational numbers on a number line  
arith215 Addition or subtraction of mixed numbers with the same denominator  
arith084 Addition of mixed numbers with the same denominator and carry  
arith216 Subtraction of mixed numbers with the same denominator and borrowing  
arith806 Addition or subtraction of mixed numbers with different denominators and no carry or borrow  
arith808 Addition of mixed numbers with different denominators and carry  
arith809 Subtraction of mixed numbers with different denominators and borrowing  
arith807 Addition and subtraction of 3 mixed numbers with different denominators  
arith810 Word problem involving addition or subtraction of mixed numbers with different denominators  
arith815 Mixed number multiplication  
arith816 Multiplication of a mixed number and a whole number  
arith817 Division with a mixed number and a whole number  
arith068 Mixed number division

arith820 Word problem involving multiplication or division with mixed numbers  
 arith821 Exponents and fractions  
 alge790 Evaluating expressions with exponents of zero  
 arith704 Exponents and signed fractions  
 arith859 Order of operations with fractions: Problem type 1  
 arith860 Order of operations with fractions: Problem type 2  
 arith861 Order of operations with fractions: Problem type 3  
 arith695 Complex fraction without variables: Problem type 1  
 alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
 alge801 Additive property of equality with fractions and mixed numbers  
 alge836 Additive property of equality with signed fractions  
 alge646 Multiplicative property of equality with whole numbers: Fractional answers  
 alge820 Multiplicative property of equality with fractions  
 alge012 Multiplicative property of equality with signed fractions

### Decimals

arith127 Writing a decimal and a fraction for a shaded region  
 arith110 Decimal place value: Tenths and hundredths  
 arith220 Decimal place value: Hundreds to ten thousandths  
 arith714 Writing a decimal number less than 1 given its name  
 arith715 Writing a decimal number greater than 1 given its name  
 arith716 Writing a decimal number given its name: Advanced  
 arith829 Reading decimal position on a number line: Tenths  
 arith830 Reading decimal position on a number line: Hundredths  
 arith831 Understanding decimal position on a number line using zoom: Hundredths  
 arith832 Understanding decimal position on a number line using zoom: Thousandths  
 arith129 Introduction to ordering decimals  
 arith608 Ordering decimals  
 arith221 Rounding decimals  
 arith717 Converting a decimal to a proper fraction without simplifying: Basic  
 arith719 Converting a decimal to a proper fraction without simplifying: Advanced  
 arith718 Converting a decimal to a proper fraction in simplest form: Basic  
 arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
 arith721 Converting a decimal to a mixed number and an improper fraction without simplifying  
 arith722 Converting a decimal to a mixed number and an improper fraction in simplest form: Basic  
 arith724 Converting a decimal to a mixed number and an improper fraction in simplest form: Advanced  
 arith624 Addition of aligned decimals  
 arith013 Decimal addition with 3 numbers  
 arith734 Subtraction of aligned decimals  
 arith735 Decimal subtraction: Basic  
 arith736 Decimal subtraction: Advanced  
 arith737 Decimal addition and subtraction with 3 or more numbers  
 arith131 Estimating a decimal sum or difference  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 geom525 Computing distances between decimals on the number line  
 arith132 Word problem with addition or subtraction of 2 decimals  
 arith133 Word problem with addition of 3 or 4 decimals and whole numbers  
 arith134 Word problem with subtraction of a whole number and a decimal: Regrouping with zeros  
 arith739 Introduction to decimal multiplication  
 arith017 Multiplication of a decimal by a whole number  
 arith055 Decimal multiplication: Problem type 1  
 arith046 Decimal multiplication: Problem type 2  
 arith082 Multiplication of a decimal by a power of ten  
 arith738 Multiplication of a decimal by a power of 0.1  
 arith740 Multiplication of decimals that have a product less than 0.1  
 arith752 Estimating a product of decimals  
 arith750 Signed decimal multiplication  
 arith135 Word problem with multiplication of a decimal and a whole number

arith137 Word problem with multiplication of two decimals  
arith628 Word problem with multiple decimal operations: Problem type 1  
arith744 Whole number division with decimal answers  
arith081 Division of a decimal by a whole number  
arith743 Division of a decimal by a 1-digit decimal  
arith019 Division of a decimal by a 2-digit decimal  
arith083 Division of a decimal by a power of ten  
arith742 Division of a decimal by a power of 0.1  
arith745 Decimal division with rounding  
arith751 Signed decimal division  
arith136 Word problem with division of a decimal and a whole number  
arith138 Word problem with division of two decimals  
arith629 Word problem with multiple decimal operations: Problem type 2  
arith103 Average of two numbers  
arith725 Converting a fraction with a denominator of 10 or 100 to a decimal  
arith726 Converting a fraction with a denominator of 100 or 1000 to a decimal  
arith113 Converting a proper fraction with a denominator of 2, 4, or 5 to a decimal  
arith114 Converting a mixed number with a denominator of 2, 4, or 5 to a decimal  
arith727 Converting a fraction to a terminating decimal: Basic  
arith728 Converting a fraction to a terminating decimal: Advanced  
arith730 Converting a fraction to a repeating decimal: Basic  
arith731 Converting a fraction to a repeating decimal: Advanced  
arith733 Using a calculator to convert a fraction to a rounded decimal  
arith111 Converting a mixed number to a terminating decimal: Basic  
arith112 Converting a mixed number to a terminating decimal: Advanced  
arith732 Converting a fraction or mixed number to a rounded decimal  
arith609 Ordering fractions and decimals  
alge001 Identifying numbers as integers or non-integers  
arith513 Identifying rational decimal numbers  
arith753 Squaring decimal bases: Products greater than 0.1  
arith741 Exponents and decimals: Products less than 0.1  
arith720 Order of operations with decimals: Problem type 1  
arith746 Order of operations with decimals: Problem type 2  
arith747 Order of operations with decimals: Problem type 3  
arith748 Addition or subtraction with a decimal and a mixed number  
arith749 Multiplication with a decimal and a fraction  
alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
alge800 Additive property of equality with decimals  
alge825 Multiplicative property of equality with decimals

### **Ratios, Proportions, and Measurement**

arith823 Writing ratios using different notations  
arith663 Writing ratios for real-world situations  
arith450 Identifying statements that describe a ratio  
arith824 Simplifying a ratio of whole numbers: Problem type 1  
arith825 Simplifying a ratio of decimals  
arith827 Finding a unit price  
arith455 Using tables to compare ratios  
arith828 Computing unit prices to find the better buy  
arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
arith505 Word problem on unit rates associated with ratios of fractions  
arith506 Word problem on unit rates associated with ratios of mixed numbers  
arith064 Solving a word problem on proportions using a unit rate  
alge823 Solving a one-step word problem using the formula  $d = rt$   
arith452 Finding missing values in a table of equivalent ratios  
arith453 Using a table of equivalent ratios to find a missing quantity in a ratio  
arith504 Writing an equation to represent a proportional relationship  
alge819 Solving a proportion of the form  $x/a=b/c$ : Basic

alge272 Solving a proportion of the form  $x/a = b/c$   
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 arith045 Word problem with powers of ten  
 arith500 Identifying proportional relationships in tables by calculating unit rates: Whole numbers  
 arith510 Identifying proportional relationships in tables by calculating unit rates: Fractions  
 geom359 Identifying congruent shapes on a grid  
 geom360 Identifying similar or congruent shapes on a grid  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom538 Finding lengths using scale models  
 geom539 Finding a scale factor: Same units  
 geom541 Using a scale drawing to find actual area  
 geom542 Reproducing a scale drawing at a different scale  
 mstat058 Choosing a measuring tool  
 mstat059 Choosing U.S. Customary measurement units  
 mstat033 Measuring length to the nearest inch  
 mstat034 Measuring length to the nearest quarter or half inch  
 unit005 U.S. Customary unit conversion with whole number values  
 mstat035 Conversions involving measurements in feet and inches  
 mstat036 Adding measurements in feet and inches  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 unit007 U.S. Customary unit conversion with mixed number values: One-step conversion  
 unit008 U.S. Customary unit conversion with mixed number values: Two-step conversion  
 unit009 U.S. Customary area unit conversion with whole number values  
 mstat060 Choosing metric measurement units  
 mstat063 Measuring length to the nearest centimeter  
 mstat064 Measuring length to the nearest millimeter  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit012 Time unit conversion with whole number values  
 time009 Introduction to adding time  
 time006 Adding time  
 time011 Introduction to elapsed time  
 time007 Elapsed time  
 mstat062 Reading a positive temperature from a thermometer  
 mstat038 Reading the temperature from a thermometer  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 arith826 Simplifying a ratio of whole numbers: Problem type 2  
 alge218 Solving a word problem involving rates and time conversion  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced

### Percents

arith836 Converting a fraction with a denominator of 100 to a percentage  
 arith837 Converting a percentage to a fraction with a denominator of 100  
 arith674 Finding the percentage of a grid that is shaded  
 arith903 Representing benchmark percentages on a grid  
 arith723 Introduction to converting a percentage to a decimal  
 arith833 Introduction to converting a decimal to a percentage  
 arith834 Converting between percentages and decimals  
 arith841 Converting a mixed number percentage to a decimal  
 arith835 Converting between percentages and decimals in a real-world situation  
 arith090 Converting a percentage to a fraction in simplest form

arith839 Converting a decimal percentage to a fraction  
arith838 Converting a fraction to a percentage: Denominator of 4, 5, or 10  
arith904 Finding benchmark fractions and percentages for a figure  
arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
arith843 Using a calculator to convert a fraction to a rounded percentage  
arith842 Converting a fraction to a percentage in a real-world situation  
arith840 Finding a percentage of a whole number  
arith030 Finding a percentage of a whole number without a calculator: Basic  
arith844 Finding a percentage of a whole number without a calculator: Advanced  
arith862 Applying the percent equation: Problem type 1  
arith863 Applying the percent equation: Problem type 2  
arith845 Finding a percentage of a total amount: Real-world situations  
arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount  
arith857 Estimating a tip without a calculator  
arith069 Writing a ratio as a percentage without a calculator  
arith850 Finding the rate of a tax or commission  
arith849 Finding the total amount given the percentage of a partial amount  
stat805 Making a reasonable inference based on proportion statistics  
stat804 Interpreting a circle graph or pie chart  
arith856 Finding a percentage of a total amount in a circle graph  
stat801 Computations from a circle graph  
arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
arith851 Finding the final amount given the original amount and a percentage increase or decrease  
arith847 Finding the sale price given the original price and percent discount  
arith074 Finding the sale price without a calculator given the original price and percent discount  
arith848 Finding the total cost including tax or markup  
arith855 Finding the original amount given the result of a percentage increase or decrease  
arith031 Finding the original price given the sale price and percent discount  
arith858 Finding the percentage increase or decrease: Basic  
arith225 Finding the percentage increase or decrease: Advanced  
unit052 Finding the absolute error and percent error of a measurement  
arith232 Finding simple interest without a calculator  
arith853 Introduction to compound interest  
arith915 Calculating income tax  
arith918 Comparing discounts  
arith909 Examining a savings plan for college  
arith914 Calculations involving paying for college  
arith920 Comparing total costs for attending different colleges  
arith922 Distinguishing between fixed and variable expenses  
arith916 Computing percentages for categories of a budget  
arith919 Computations involving cost of living and hourly wage  
arith921 Comparing annual salaries of different occupations  
arith911 Calculations involving purchases with debit and credit cards  
arith950 Comparing costs of checking accounts  
arith951 Balancing a check register  
arith912 Reading a credit report  
arith913 Understanding the impact of a credit score  
arith917 Computing a person's net worth  
arith906 Calculating and comparing monthly payments using the ALEKS loan calculator  
arith907 Calculating monthly payment, total payment, and interest using the ALEKS loan calculator  
arith908 Calculating and comparing total loan payments using the ALEKS loan calculator  
arith910 Calculating and comparing simple interest and compound interest

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alge700 Combining like terms: Whole number coefficients  
alge607 Combining like terms: Integer coefficients  
arith655 Introduction to properties of addition  
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alge666 Combining like terms: Fractional coefficients  
 alge665 Combining like terms: Decimal coefficients  
 alge310 Multiplying a constant and a linear monomial  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge610 Distributive property: Fractional coefficients  
 alge605 Factoring a linear binomial  
 alge612 Identifying parts in an algebraic expression  
 alge613 Identifying equivalent algebraic expressions  
 arith656 Introduction to properties of multiplication  
 alge188 Properties of real numbers  
 alge608 Using distribution and combining like terms to simplify: Univariate  
 alge667 Identifying properties used to simplify an algebraic expression  
 alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
 alge293 Combining like terms in a quadratic expression  
 alge436 Adding rational expressions with different denominators and a single occurrence of a variable  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge803 Using two steps to solve an equation with whole numbers  
 alge266 Additive property of equality with a negative coefficient  
 alge006 Solving a two-step equation with integers  
 alge200 Solving an equation to find the value of an expression  
 alge920 Introduction to solving an equation with parentheses  
 alge837 Solving a multi-step equation given in fractional form  
 alge986 Identifying properties used to solve a linear equation  
 alge824 Solving a two-step equation with signed decimals  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge611 Introduction to solving a linear equation with a variable on each side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge614 Clearing fractions in an equation  
 alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
 alge208 Solving a two-step equation with signed fractions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge840 Solving a proportion of the form  $(x+a) \div b = c \div d$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 alge658 Introduction to solving a rational equation  
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge603 Introduction to solving an absolute value equation  
 alge864 Solving an absolute value equation: Problem type 1  
 alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
 alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
 alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
 alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
 alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
 alge518 Solving for a variable inside parentheses in terms of other variables  
 alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge016 Translating a sentence into a one-step equation  
 alge671 Choosing stories that can be represented by given one-step equations  
 alge841 Translating a sentence into a multi-step equation  
 alge628 Writing an equation of the form  $Ax + B = C$  to solve a word problem  
 alge618 Comparing arithmetic and algebraic solutions to a word problem  
 alge672 Choosing stories that can be represented by given two-step equations



alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
alge629 Writing an equation of the form  $A(x + B) = C$  to solve a word problem  
alge014 Solving a word problem with two unknowns using a linear equation  
alge673 Writing an equation to represent a real-world problem: Variable on both sides  
alge674 Writing and solving a real-world problem given an equation with the variable on both sides  
alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
alge792 Solving a word problem with three unknowns using a linear equation  
alge842 Solving a word problem involving consecutive integers  
alge794 Solving a value mixture problem using a linear equation  
alge795 Solving a percent mixture problem using a linear equation  
alge796 Solving a distance, rate, time problem using a linear equation  
alge015 Translating a sentence by using an inequality symbol  
alge845 Translating a sentence into a one-step inequality  
alge653 Introduction to identifying solutions to an inequality  
alge748 Writing an inequality for a real-world situation  
alge017 Graphing a linear inequality on the number line  
alge822 Writing an inequality given a graph on the number line  
alge186 Translating a sentence into a compound inequality  
alge166 Graphing a compound inequality on the number line  
alge847 Writing a compound inequality given a graph on the number line  
alge652 Identifying solutions to a one-step linear inequality  
alge848 Additive property of inequality with whole numbers  
alge849 Additive property of inequality with integers  
alge852 Additive property of inequality with signed fractions  
alge853 Additive property of inequality with signed decimals  
alge809 Multiplicative property of inequality with whole numbers  
alge854 Multiplicative property of inequality with integers  
alge964 Multiplicative property of inequality with signed fractions  
alge621 Solving a word problem using a one-step linear inequality  
alge844 Identifying solutions to a two-step linear inequality in one variable  
alge636 Solving a two-step linear inequality with whole numbers  
alge855 Solving a two-step linear inequality: Problem type 1  
alge856 Solving a two-step linear inequality: Problem type 2  
alge857 Solving a two-step linear inequality with a fractional coefficient  
alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
alge846 Translating a sentence into a multi-step inequality  
alge619 Solving a word problem using a two-step linear inequality and describing the solution  
alge623 Solving a word problem using a two-step linear inequality  
alge749 Solving a decimal word problem using a two-step linear inequality

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alge278 Reading a point in quadrant 1  
alge279 Plotting a point in quadrant 1  
alge064 Reading a point in the coordinate plane  
alge067 Plotting a point in the coordinate plane  
alge692 Plotting a point in quadrant 1: Mixed number coordinates  
alge693 Plotting a point in the coordinate plane: Mixed number coordinates  
arith404 Naming the quadrant or axis of a point given its graph  
arith405 Naming the quadrant or axis of a point given its coordinates  
arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
alge695 Finding distances between points that share a common coordinate given the graph  
alge696 Finding distances between points that share a common coordinate given their coordinates  
alge191 Midpoint of a line segment in the plane  
alge282 Function tables with two-step rules  
alge850 Table for a linear equation  
fun005 Writing a function rule given a table of ordered pairs: One-step rules

fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 alge280 Graphing a line in quadrant 1  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding x- and y-intercepts given the graph of a line on a grid  
 alge924 Finding x- and y-intercepts of a line given the equation: Basic  
 alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
 alge197 Graphing a line given its x- and y-intercepts  
 alge881 Graphing a line by first finding its x- and y-intercepts  
 alge874 Identifying linear functions given ordered pairs  
 geom358 Identifying parallel and perpendicular lines  
 mstat007 Interpreting a line graph  
 arith454 Making a table and plotting points given a unit rate  
 arith501 Identifying proportional relationships in graphs: Basic  
 arith502 Identifying proportional relationships in graphs: Advanced  
 arith512 Finding outputs and rate of increase given the graph of a line that models a real-world situation  
 alge699 Comparing proportional relationships given in different forms  
 alge575 Finding slope given the graph of a line in quadrant 1 that models a real-world situation  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines  
 alge814 Using right triangles to find the slope of a line  
 alge888 Finding the coordinate that yields a given slope  
 alge259 Graphing a line given its slope and y-intercept  
 alge196 Graphing a line through a given point with a given slope  
 alge982 Identifying direct variation equations  
 alge938 Identifying direct variation from ordered pairs and writing equations  
 alge904 Writing a direct variation equation  
 alge175 Word problem on direct variation  
 alge828 Interpreting direct variation from a graph  
 alge905 Writing an inverse variation equation  
 alge903 Identifying direct and inverse variation equations  
 alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
 alge176 Word problem on inverse variation  
 alge220 Word problem on inverse proportions  
 alge625 Identifying linear equations: Basic  
 alge891 Rewriting a linear equation in the form  $Ax + By = C$   
 alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
 alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
 alge882 Graphing a line by first finding its slope and y-intercept  
 alge258 Writing an equation of a line given its slope and y-intercept  
 alge892 Writing an equation and graphing a line given its slope and y-intercept  
 alge893 Writing an equation in slope-intercept form given the slope and a point  
 alge883 Graphing a line given its equation in point-slope form  
 alge894 Writing an equation in point-slope form given the slope and a point  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 alge895 Identifying parallel and perpendicular lines from equations  
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 alge630 Finding outputs of a one-step function that models a real-world situation: Two variable equation  
 alge632 Finding outputs of a two-step function with decimals that models a real-world situation: Two variable equation  
 alge633 Finding inputs and outputs of a two-step function that models a real-world situation: Two variable

equation

- alge655 Writing and evaluating a function that models a real-world situation: Basic
- alge897 Writing and evaluating a function that models a real-world situation: Advanced
- alge654 Graphing ordered pairs and writing an equation from a table of values in context
- alge656 Writing an equation and drawing its graph to model a real-world situation: Basic
- alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced
- alge817 Finding the initial amount and rate of change given a table for a linear function
- alge818 Finding the initial amount and rate of change given a graph of a linear function
- alge987 Comparing properties of linear functions given in different forms
- alge989 Interpreting the parameters of a linear function that models a real-world situation
- alge805 Application problem with a linear function: Finding a coordinate given the slope and a point
- alge806 Application problem with a linear function: Finding a coordinate given two points
- alge670 Identifying independent and dependent quantities from tables and graphs
- mstat052 Identifying independent and dependent variables from equations or real-world situations
- fun032 Identifying functions from relations
- fun010 Vertical line test
- fun016 Domain and range from ordered pairs
- fun001 Table for a linear function
- pcalc760 Evaluating functions: Linear and quadratic or cubic
- alge294 Finding outputs of a one-step function that models a real-world situation: Function notation
- alge295 Finding outputs of a two-step function with decimals that models a real-world situation: Function notation
- alge296 Finding inputs and outputs of a two-step function that models a real-world situation: Function notation
- alge990 Domain and range of a linear function that models a real-world situation
- fun026 Finding an output of a function from its graph
- pcalc761 Finding inputs and outputs of a function from its graph
- fun007 Domain and range from the graph of a discrete relation
- alge896 Graphing an integer function and finding its range for a given domain
- alge570 Graphing a function of the form  $f(x) = ax + b$ : Integer slope
- alge571 Graphing a function of the form  $f(x) = ax + b$ : Fractional slope
- alge999 Finding where a function is increasing, decreasing, or constant given the graph
- mstat018 Choosing a graph to fit a narrative: Basic
- mstat051 Choosing a graph to fit a narrative: Advanced
- alge913 Graphing an absolute value equation of the form  $y = A - x -$
- alge900 Graphing an absolute value equation in the plane: Basic
- alge168 Graphing an absolute value equation in the plane: Advanced
- alge954 Graphing a parabola of the form  $y = ax^2$
- alge955 Graphing a parabola of the form  $y = ax^2 + c$
- alge262 Graphing a cubic function of the form  $y = ax^3$
- alge925 Finding the next terms of an arithmetic sequence with whole numbers
- alge933 Finding the next terms of a geometric sequence with whole numbers
- alge732 Finding patterns in shapes
- alge644 Finding the first terms of an arithmetic sequence using an explicit rule
- alge645 Finding the first terms of a geometric sequence using an explicit rule
- alge906 Finding the next terms of an arithmetic sequence with integers
- alge979 Identifying arithmetic sequences and finding the common difference
- alge931 Finding a specified term of an arithmetic sequence given the first terms
- pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term
- alge909 Writing an explicit rule for an arithmetic sequence
- alge907 Finding the next terms of a geometric sequence with signed numbers
- alge981 Identifying arithmetic and geometric sequences
- alge980 Identifying geometric sequences and finding the common ratio
- alge934 Finding a specified term of a geometric sequence given the first terms
- pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term
- pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule
- alge914 Identifying solutions to a system of linear equations
- alge725 Graphically solving a system of linear equations
- alge815 Introduction to using substitution to solve a linear equation
- alge816 Solving a system of linear equations of the form  $y = mx + b$
- alge751 Solving a system of linear equations using substitution
- alge915 Solving a system of linear equations using elimination with addition
- alge076 Solving a system of linear equations using elimination with multiplication and addition

alge634 Solving systems of linear equations with 0, 1, or infinitely many solutions  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 pcalc038 Addition or subtraction of matrices  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced

### Exponents, Polynomials, and Radicals

alge686 Introduction to the product rule with positive exponents: Whole number base  
 alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge311 Product rule with positive exponents: Univariate  
 alge030 Product rule with positive exponents: Multivariate  
 alge690 Introduction to the power of a power rule with positive exponents: Whole number base  
 alge826 Understanding the power rules of exponents  
 alge306 Introduction to the power of a power rule of exponents  
 alge305 Introduction to the power of a product rule of exponents  
 alge307 Power rules with positive exponents: Multivariate products  
 alge308 Power rules with positive exponents: Multivariate quotients  
 alge451 Simplifying a ratio of multivariate monomials: Basic  
 alge688 Introduction to the quotient rule with positive exponents: Whole number base  
 alge827 Introduction to the quotient rule of exponents  
 alge452 Simplifying a ratio of univariate monomials  
 alge026 Quotient of expressions involving exponents  
 arith029 Ordering numbers with positive exponents  
 arith684 Power of 10: Negative exponent  
 arith729 Evaluating an expression with a negative exponent: Whole number base  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge687 Introduction to the product rule with negative exponents: Whole number base  
 alge961 Introduction to the product rule with negative exponents  
 alge689 Introduction to the quotient rule with negative exponents: Whole number base  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge691 Introduction to the power of a power rule with negative exponents: Whole number base  
 alge025 Power of a power rule with negative exponents  
 scinot023 Introduction to scientific notation with positive exponents  
 arith036 Scientific notation with positive exponent  
 scinot024 Introduction to scientific notation with negative exponents  
 arith037 Scientific notation with negative exponent  
 scinot012 Converting between scientific notation and standard form in a real-world situation  
 scinot025 Estimating numbers using scientific notation  
 scinot020 Choosing metric units and converting to the base unit in scientific notation  
 scinot021 Expressing calculator notation as scientific notation  
 scinot008 Multiplying numbers written in scientific notation: Basic  
 scinot009 Multiplying numbers written in scientific notation: Advanced  
 scinot019 Multiplying numbers written in decimal form or scientific notation in a real-world situation  
 scinot010 Dividing numbers written in scientific notation: Basic  
 scinot011 Dividing numbers written in scientific notation: Advanced  
 scinot013 Finding the scale factor between numbers given in scientific notation in a real-world situation  
 scinot015 Adding or subtracting numbers written in scientific notation: Same exponents, basic

scinot022 Adding or subtracting numbers written in scientific notation: Same exponents, advanced  
scinot016 Adding or subtracting numbers written in scientific notation: Different exponents  
scinot017 Estimating the sum or difference of two numbers written in scientific notation  
alge758 Degree and leading coefficient of a univariate polynomial  
alge031 Degree of a multivariate polynomial  
alge798 Simplifying a sum or difference of two univariate polynomials  
alge029 Simplifying a sum or difference of three univariate polynomials  
alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
alge033 Multiplying binomials with leading coefficients of 1  
alge983 Multiplying binomials with leading coefficients greater than 1  
alge765 Multiplying binomials in two variables  
alge764 Multiplying conjugate binomials: Univariate  
alge032 Squaring a binomial: Univariate  
alge935 Multiplication involving binomials and trinomials in one variable  
alge180 Multiplication involving binomials and trinomials in two variables  
alge737 Introduction to the LCM of two monomials  
alge055 Least common multiple of two monomials  
alge736 Introduction to the GCF of two monomials  
alge037 Greatest common factor of two multivariate monomials  
alge738 Factoring out a monomial from a polynomial: Univariate  
alge039 Factoring a quadratic with leading coefficient 1  
alge944 Factoring a perfect square trinomial with leading coefficient 1  
alge290 Factoring a difference of squares in one variable: Basic  
alge947 Factoring a difference of squares in one variable: Advanced  
alge045 Finding the roots of a quadratic equation with leading coefficient 1  
arith016 Square root of a perfect square  
arith601 Square root of a rational perfect square  
alge413 Finding all square roots of a number  
arith760 Square roots of perfect squares with signs  
arith763 Using a calculator to approximate a square root  
arith602 Estimating a square root  
alge567 Using numerical methods to approximate a square root to the nearest tenth  
alge568 Using numerical methods to approximate a square root to the nearest hundredth  
arith515 Approximating the location of irrational numbers on a number line  
arith712 Ordering real numbers  
arith514 Converting a repeating decimal to a fraction  
arith432 Identifying true statements about rational and irrational numbers  
alge002 Identifying numbers as rational or irrational  
alge415 Introduction to simplifying a radical expression with an even exponent  
alge264 Square root of a perfect square monomial  
arith093 Simplifying the square root of a whole number less than 100  
arith762 Simplifying the square root of a whole number greater than 100  
alge080 Simplifying a radical expression with an even exponent  
arith767 Introduction to square root addition or subtraction  
arith032 Square root addition or subtraction  
arith764 Introduction to square root multiplication  
arith765 Square root multiplication: Basic  
alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
geom564 Finding side lengths of squares given an area and a perimeter  
alge400 Introduction to solving a radical equation  
alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
alge542 Word problem involving radical equations: Basic  
arith094 Cube root of an integer  
alge698 Solving an equation of the form  $x^3 = a$  using integers  
alge093 Solving an equation using the odd-root property: Problem type 1  
geom565 Finding the side length of a cube given its volume  
alge560 Rational exponents: Unit fraction exponents and whole number bases  
alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
alge407 Introduction to the Pythagorean Theorem  
geom044 Pythagorean Theorem  
alge408 Word problem involving the Pythagorean Theorem  
geom862 Using the Pythagorean Theorem repeatedly

alge675 Using the Pythagorean Theorem to find distance on a grid  
 alge132 Distance between two points in the plane: Exact answers

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geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom551 Finding the complement or supplement of an angle given a figure  
 geom552 Solving an equation involving complementary or supplementary angles  
 geom305 Identifying supplementary and vertical angles  
 geom553 Finding angle measures given two intersecting lines  
 geom530 Solving equations involving vertical angles  
 geom304 Identifying corresponding and alternate angles  
 geom349 Naming segments, rays, and lines  
 geom554 Finding angle measures given two parallel lines cut by a transversal  
 geom531 Solving equations involving angles and a pair of parallel lines  
 geom584 Establishing facts about the angles created when parallel lines are cut by a transversal  
 geom154 Constructing the perpendicular bisector of a line segment  
 geom158 Constructing an angle bisector  
 geom159 Constructing congruent angles  
 geom150 Constructing a pair of perpendicular lines  
 geom157 Constructing a pair of parallel lines  
 geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom860 Special right triangles: Decimal answers  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom623 Finding angle measures of a triangle given angles with variables  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 geom309 Finding an angle measure for a triangle sharing a side with another triangle  
 geom586 Establishing facts about the interior angles of a triangle  
 geom587 Establishing facts about the interior and exterior angles of a triangle  
 geom543 Drawing a circle with a given radius or diameter  
 geom544 Creating triangles from given side lengths: Problem type 1  
 geom634 Creating triangles from given side lengths: Problem type 2  
 geom844 Using triangle inequality to determine if side lengths form a triangle  
 geom548 Determining if a triangle is possible based on given angle measures  
 geom549 Determining if given measurements define a unique triangle, more than one triangle, or no triangle  
 geom546 Drawing triangles with given conditions: Angle measures  
 geom547 Drawing triangles with given conditions: Side lengths and angle measures  
 geom545 Drawing triangles with given side lengths using a compass  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 geom361 Naming polygons  
 mstat042 Interpreting a Venn diagram of 2 sets  
 geom536 Drawing and identifying a polygon in the coordinate plane  
 geom867 Identifying parallelograms, rectangles, and squares  
 geom310 Properties of quadrilaterals  
 geom532 Classifying parallelograms  
 geom818 Finding the coordinates of a point to make a parallelogram



- geom870 Sum of the angle measures of a quadrilateral
- geom852 The sum of interior angle measures in a convex polygon

### Transformations

- geom519 Identifying and naming congruent parts of congruent triangles
- geom520 Identifying and naming congruent triangles
- geom583 Finding angle measures of a triangle given two angles of a similar triangle
- geom585 Finding angle measures and side ratios to determine if two triangles are similar
- geom357 Identifying transformations
- geom596 Translating a point and giving its coordinates: One step
- geom909 Translating a point and giving its coordinates: Two steps
- geom597 Properties of translated figures
- geom598 Determining if figures are related by a translation
- geom330 Translating a polygon
- geom331 Using a translated point to find coordinates of other translated points
- arith408 Reflecting a point across an axis
- geom533 Reflecting a point across both coordinate axes
- geom590 Reflecting a point across an axis and giving its coordinates
- arith407 Finding the coordinates of a point reflected across an axis
- geom560 Finding the coordinates of a point reflected across both axes
- geom534 Reflecting a polygon across the x-axis or y-axis
- geom591 Properties of reflected figures
- geom592 Determining if figures are related by a reflection
- geom332 Reflecting a polygon over a vertical or horizontal line
- geom333 Finding the coordinates of three points reflected over an axis
- geom334 Drawing lines of symmetry
- geom602 Finding the coordinates of a point reflected across an axis and translated
- geom815 Finding an angle of rotation
- geom624 Identifying rotational symmetry and angles of rotation
- geom593 Rotating a point and giving its coordinates
- geom594 Properties of rotated figures
- geom595 Determining if figures are related by a rotation
- geom335 Rotating a figure about the origin
- geom580 Determining if figures are congruent and related by a transformation
- geom581 Determining if figures are congruent and related by a sequence of transformations
- geom606 Dilating a segment and giving the coordinates of its endpoints
- geom607 The effect of dilation on side length
- geom608 Determining if figures are related by a dilation
- geom636 The effect of dilation on area
- geom336 Dilating a figure
- geom582 Determining if figures are similar and related by a sequence of transformations

### Perimeters, Areas, and Volumes

- geom618 Perimeter of a polygon involving mixed numbers and fractions
- geom078 Sides of polygons having the same perimeter
- geom221 Finding the missing length in a figure
- geom353 Perimeter of a piecewise rectangular figure
- alge615 Writing algebraic expressions for the perimeter of a figure
- geom817 Finding a side length given the perimeter and side lengths with variables
- geom217 Finding the side length of a rectangle given its perimeter or area
- geom561 Finding the dimensions of a rectangle given its perimeter and a relationship between sides
- geom620 Area of a rectangle involving fractions
- geom619 Area of a rectangle involving mixed numbers and fractions
- geom350 Distinguishing between the area and perimeter of a rectangle
- geom351 Areas of rectangles with the same perimeter
- geom869 Estimates and exact answers



alge616 Writing algebraic expressions for the area of a figure  
geom410 Word problem involving the area of a square or a rectangle  
geom143 Finding the perimeter or area of a rectangle given one of these values  
geom340 Area of a piecewise rectangular figure  
geom562 Area between two rectangles  
geom142 Word problem involving the area between two rectangles  
geom501 Finding the area of a right triangle on a grid  
geom509 Finding the area of a right triangle or its corresponding rectangle  
geom801 Area of a triangle  
geom517 Finding the area of a trapezoid on a grid by using triangles and rectangles  
geom344 Area involving rectangles and triangles  
alge724 Finding an area in terms of variables  
geom022 Area of a parallelogram  
geom023 Area of a trapezoid  
geom537 Finding the perimeter or area of a rectangle in the coordinate plane  
geom832 Area of quadrilaterals in the coordinate plane  
geom603 Identifying side lengths that give right triangles  
geom589 Demonstrating the converse of the Pythagorean Theorem  
geom588 Informal proof of the Pythagorean Theorem  
geom347 Introduction to a circle: Diameter, radius, and chord  
geom343 Identifying central angles, inscribed angles, arcs, chords, and tangents of a circle  
geom016 Circumference of a circle  
geom218 Finding the radius or the diameter of a circle given its circumference  
geom838 Circumference ratios  
geom301 Perimeter involving rectangles and circles  
geom026 Area of a circle  
geom802 Circumference and area of a circle  
geom570 Distinguishing between the area and circumference of a circle  
geom302 Area involving rectangles and circles  
geom563 Area between two concentric circles  
geom036 Word problem involving the area between two concentric circles  
geom214 Area involving inscribed figures  
geom126 Area of a sector of a circle: Exact answer in terms of  $\pi$   
geom868 Classifying solids  
geom348 Vertices, edges, and faces of a solid  
geom830 Counting the cubes in a solid made of cubes  
geom816 Side views of a solid made of cubes  
geom550 Identifying horizontal and vertical cross sections of solids  
geom354 Volume of a rectangular prism made of unit cubes  
geom518 Volume of a solid made of cubes with unit fraction edge lengths  
geom535 Volume of a rectangular prism with fractional edge lengths  
alge617 Writing equivalent expressions for the volume of a rectangular prism  
geom571 Word problem involving the volume of a rectangular prism  
geom558 Word problem involving the rate of filling or emptying a rectangular prism  
geom505 Volume of a piecewise rectangular prism  
geom090 Volume of a triangular prism  
geom572 Word problem involving the volume of a triangular prism  
geom033 Volume of a pyramid  
geom637 Relating the volumes of a rectangular prism and a rectangular pyramid  
geom638 Relating the volumes of a triangular prism and a triangular pyramid  
geom035 Volume of a cylinder  
geom573 Word problem involving the volume of a cylinder  
geom092 Word problem involving the rate of filling or emptying a cylinder  
geom622 Volume of a cone  
geom086 Volume of a cone: Exact answers in terms of  $\pi$   
geom639 Relating the volumes of a cylinder and a cone  
geom575 Word problem involving the volume of a cone  
geom841 Volume of a sphere  
geom574 Word problem involving the volume of a sphere  
geom133 Ratio of volumes  
geom219 Nets of solids  
geom031 Surface area of a cube or a rectangular prism

geom632 Surface area of a rectangular prism made of unit cubes  
 geom555 Distinguishing between surface area and volume  
 geom556 Using a net to find the surface area of a rectangular prism  
 geom576 Word problem involving the surface area of a rectangular prism  
 geom345 Surface area of a piecewise rectangular prism made of unit cubes  
 geom091 Surface area of a triangular prism  
 geom557 Using a net to find the surface area of a triangular prism  
 geom621 Surface area of a cylinder  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom578 Word problem involving the surface area of a cylinder  
 geom842 Surface area of a sphere  
 geom338 Surface area involving prisms or cylinders  
 geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids  
 geom847 Similar solids: Problem type 2

### Data Analysis and Probability

mstat088 Identifying statistical questions  
 mstat080 Choosing an appropriate method for gathering data: Problem type 1  
 mstat081 Choosing an appropriate method for gathering data: Problem type 2  
 mstat056 Interpreting a tally table  
 mstat097 Constructing a two-way frequency table: Basic  
 mstat098 Constructing a two-way frequency table: Advanced  
 mstat049 Computing a percentage from a table of values  
 mstat087 Making an inference using a two-way frequency table  
 stat020 Calculating relative frequencies in a contingency table  
 mstat025 Finding if a question can be answered by the data  
 mstat037 Constructing a line plot  
 mstat005 Constructing a bar graph for non-numerical data  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat057 Interpreting a pictograph table  
 mstat031 Interpreting a stem-and-leaf plot  
 geom814 Angle measure in a circle graph  
 mstat094 Constructing a scatter plot  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 mstat068 Predictions from the line of best fit  
 mstat067 Approximating the equation of a line of best fit and making predictions  
 mstat093 Classifying linear and nonlinear relationships from scatter plots  
 mstat071 Linear relationship and the correlation coefficient  
 mstat096 Identifying outliers and clustering in scatter plots  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat092 Finding the mode and range from a line plot  
 mstat001 Mean of a data set  
 mstat077 Using a model to find the mean  
 mstat075 Understanding the mean graphically: Two bars  
 mstat076 Understanding the mean graphically: Four or more bars  
 mstat091 Finding the mean of a symmetric distribution  
 mstat079 Finding sample size and comparing samples for estimating the mean  
 mstat089 Computations involving the mean, sample size, and sum of a data set  
 stat803 Finding the value for a new score that will yield a given mean  
 stat802 Rejecting unreasonable claims based on average statistics  
 mstat066 Weighted mean  
 mstat028 Mean and median of a data set  
 mstat029 How changing a value affects the mean and median  
 mstat095 Finding outliers in a data set  
 mstat053 Choosing the best measure to describe data

mstat078 Comparing measures of center and variation  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat072 Five-number summary and interquartile range  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 mstat090 Comparing sample means  
 mstat082 Computing mean absolute deviation from a list of numerical values  
 mstat083 Computing mean absolute deviation from a bar graph  
 mstat084 Assessing the degree of overlap of two distributions  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 mstat099 Determining a sample space and outcomes for a simple event  
 mstat100 Determining a sample space and outcomes for a compound event  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 mstat054 Classifying likelihood  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat039 Understanding likelihood  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat085 Identifying outcomes in a random number table used to simulate a compound event  
 mstat086 Using a random number table to simulate a compound event

## B.70 Texas M.S. Math 3

### Whole Numbers and Integers

arith124 Whole number place value: Problem type 1  
 arith125 Whole number place value: Problem type 2  
 arith066 Expanded form  
 arith643 Expanded form with zeros  
 arith028 Numeral translation: Problem type 1  
 arith060 Numeral translation: Problem type 2  
 arith630 Addition with carry to the hundreds place  
 arith012 Addition of large numbers  
 arith006 Subtraction with borrowing  
 arith682 Subtraction with multiple regrouping steps  
 arith637 Subtraction and regrouping with zeros  
 arith613 Word problem with addition or subtraction of whole numbers  
 mstat061 Describing an increasing or decreasing pattern from a table of values  
 arith126 Multiplication as repeated addition  
 arith004 Multiplication with carry  
 arith615 Introduction to multiplication of large numbers  
 arith675 Understanding multiplication of a one-digit number with a larger number  
 arith014 Multiplication of large numbers  
 arith641 Multiples: Problem type 1  
 arith642 Multiples: Problem type 2

arith614 Word problem with multiplication or division of whole numbers  
arith130 Word problem with multiplication and addition or subtraction of whole numbers  
arith451 Word problem on unit rates associated with ratios of whole numbers: Whole number answers  
arith243 Division of whole numbers given in fractional form  
arith711 Division involving zero  
arith005 Division with carry  
arith901 Whole number division: 2-digit by 2-digit, no remainder  
arith902 Whole number division: 3-digit by 2-digit, no remainder  
arith616 Quotient and remainder: Problem type 1  
arith617 Quotient and remainder: Problem type 2  
arith631 Quotient and remainder: Problem type 3  
arith650 Division involving quotients with intermediate zeros  
arith023 Word problem with division of whole numbers and rounding  
arith651 Introduction to inequalities  
arith652 Comparing a numerical expression with a number  
arith077 Ordering large numbers  
arith078 Rounding to tens or hundreds  
arith123 Rounding to hundreds or thousands  
arith061 Rounding to thousands, ten thousands, or hundred thousands  
arith101 Estimating a sum of whole numbers  
arith102 Estimating a difference of whole numbers  
arith677 Estimating a product  
arith678 Estimating a quotient  
arith692 Writing expressions using exponents  
arith233 Introduction to exponents  
arith683 Power of 10: Positive exponent  
arith645 Introduction to parentheses  
arith865 Comparing numerical expressions with parentheses  
arith681 Introduction to order of operations  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
arith646 Even and odd numbers  
arith647 Divisibility rules for 2, 5, and 10  
arith648 Divisibility rules for 3 and 9  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith516 Greatest common factor of 3 numbers  
arith409 Introduction to the distributive property  
arith657 Understanding the distributive property  
arith410 Introduction to factoring with numbers  
arith411 Factoring a sum or difference of whole numbers  
arith070 Least common multiple of 2 numbers  
arith804 Least common multiple of 3 numbers  
arith418 Word problem involving the least common multiple of 2 numbers  
arith240 Word problem with common multiples  
alge286 Plotting integers on a number line  
arith691 Ordering integers  
arith415 Using a number line to compare integers  
arith699 Writing a signed number for a real-world situation  
arith400 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 1  
arith511 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 2  
arith416 Comparing signed numbers relating to a real-world situation  
arith402 Plotting opposite integers on a number line  
arith403 Finding opposites of integers  
arith071 Absolute value of a number  
arith412 Finding all numbers with a given absolute value  
arith200 Integer addition: Problem type 1  
arith108 Integer addition: Problem type 2

arith431 Identifying a sum as a point located a given distance from another point  
 arith430 Identifying relative change when combining two quantities  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith754 Addition and subtraction with 3 integers  
 arith755 Addition and subtraction with 4 or 5 integers  
 arith440 Operations with absolute value: Problem type 1  
 arith104 Operations with absolute value: Problem type 2  
 alge694 Computing the distance between two integers on a number line  
 arith433 Computing and understanding distances between integers on a number line  
 arith701 Word problem with addition or subtraction of integers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers  
 arith952 Word problem with multiplication or division of integers  
 arith702 Exponents and integers: Problem type 1  
 arith703 Exponents and integers: Problem type 2  
 arith118 Order of operations with integers  
 arith600 Order of operations with integers and exponents  
 alge284 Evaluating an algebraic expression: Whole number addition or subtraction  
 alge683 Evaluating an algebraic expression: Whole number multiplication or division  
 alge285 Evaluating an algebraic expression: Whole numbers with two operations  
 alge649 Evaluating a formula  
 alge648 Evaluating an algebraic expression: Whole numbers with one operation and an exponent  
 alge832 Evaluating an algebraic expression: Whole number operations and exponents  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 alge733 Writing a one-step expression for a real-world situation  
 alge831 Translating a phrase into a one-step expression  
 alge291 Translating a phrase into a two-step expression  
 geom339 Perimeter of a polygon  
 geom300 Perimeter of a square or a rectangle  
 geom019 Area of a square or a rectangle  
 geom866 Perimeter and area on a grid  
 geom311 Volume of a rectangular prism  
 alge650 Identifying solutions to a one-step linear equation: Problem type 1  
 alge651 Identifying solutions to a one-step linear equation: Problem type 2  
 alge009 Additive property of equality with whole numbers  
 alge010 Additive property of equality with integers  
 alge008 Multiplicative property of equality with whole numbers  
 alge797 Multiplicative property of equality with integers

## Fractions

arith623 Introduction to fractions  
 arith665 Understanding equivalent fractions  
 arith212 Equivalent fractions  
 arith666 Introduction to simplifying a fraction  
 arith067 Simplifying a fraction  
 alge660 Identifying equivalent signed fractions  
 arith687 Fractional position on a number line  
 arith667 Plotting fractions on a number line  
 arith044 Ordering fractions with the same denominator  
 arith091 Ordering fractions with the same numerator  
 arith092 Using a common denominator to order fractions  
 arith079 Product of a unit fraction and a whole number  
 arith086 Product of a fraction and a whole number: Problem type 1  
 arith119 Introduction to fraction multiplication  
 arith053 Fraction multiplication  
 arith812 Product of a fraction and a whole number: Problem type 2

arith905 Determining if a quantity is increased or decreased when multiplied by a fraction  
arith509 Modeling multiplication of proper fractions  
arith813 Multiplication of 3 fractions  
arith822 Signed fraction multiplication: Basic  
arith105 Signed fraction multiplication: Advanced  
arith818 Word problem involving fractions and multiplication  
arith095 Multi-step word problem involving fractions and multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith507 Fact families for multiplication and division of fractions  
arith508 Modeling division of a whole number by a fraction  
arith814 Signed fraction division  
arith819 Word problem involving fractions and division  
arith618 Addition or subtraction of fractions with the same denominator  
arith802 Addition or subtraction of fractions with the same denominator and simplification  
alge432 Introduction to adding fractions with variables and common denominators  
arith801 Finding the LCD of two fractions  
arith109 Addition or subtraction of unit fractions  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
arith803 Addition and subtraction of 3 fractions with different denominators  
arith116 Signed fraction addition or subtraction: Basic  
arith864 Signed fraction subtraction involving double negation  
arith106 Signed fraction addition or subtraction: Advanced  
arith811 Addition and subtraction of 3 fractions involving signs  
arith805 Word problem involving addition or subtraction of fractions with different denominators  
arith100 Fractional part of a circle  
arith662 Writing a mixed number and an improper fraction for a shaded region  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith605 Plotting rational numbers on a number line  
arith215 Addition or subtraction of mixed numbers with the same denominator  
arith084 Addition of mixed numbers with the same denominator and carry  
arith216 Subtraction of mixed numbers with the same denominator and borrowing  
arith806 Addition or subtraction of mixed numbers with different denominators and no carry or borrow  
arith808 Addition of mixed numbers with different denominators and carry  
arith809 Subtraction of mixed numbers with different denominators and borrowing  
arith807 Addition and subtraction of 3 mixed numbers with different denominators  
arith810 Word problem involving addition or subtraction of mixed numbers with different denominators  
arith815 Mixed number multiplication  
arith816 Multiplication of a mixed number and a whole number  
arith817 Division with a mixed number and a whole number  
arith068 Mixed number division  
arith820 Word problem involving multiplication or division with mixed numbers  
arith821 Exponents and fractions  
alge790 Evaluating expressions with exponents of zero  
arith704 Exponents and signed fractions  
arith859 Order of operations with fractions: Problem type 1  
arith860 Order of operations with fractions: Problem type 2  
arith861 Order of operations with fractions: Problem type 3  
arith695 Complex fraction without variables: Problem type 1  
alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
alge801 Additive property of equality with fractions and mixed numbers  
alge836 Additive property of equality with signed fractions  
alge646 Multiplicative property of equality with whole numbers: Fractional answers  
alge820 Multiplicative property of equality with fractions  
alge012 Multiplicative property of equality with signed fractions

## Decimals

arith127 Writing a decimal and a fraction for a shaded region  
arith110 Decimal place value: Tenths and hundredths  
arith220 Decimal place value: Hundreds to ten thousandths  
arith714 Writing a decimal number less than 1 given its name  
arith715 Writing a decimal number greater than 1 given its name  
arith716 Writing a decimal number given its name: Advanced  
arith829 Reading decimal position on a number line: Tenths  
arith830 Reading decimal position on a number line: Hundredths  
arith831 Understanding decimal position on a number line using zoom: Hundredths  
arith832 Understanding decimal position on a number line using zoom: Thousandths  
arith129 Introduction to ordering decimals  
arith608 Ordering decimals  
arith221 Rounding decimals  
arith717 Converting a decimal to a proper fraction without simplifying: Basic  
arith719 Converting a decimal to a proper fraction without simplifying: Advanced  
arith718 Converting a decimal to a proper fraction in simplest form: Basic  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith721 Converting a decimal to a mixed number and an improper fraction without simplifying  
arith722 Converting a decimal to a mixed number and an improper fraction in simplest form: Basic  
arith724 Converting a decimal to a mixed number and an improper fraction in simplest form: Advanced  
arith624 Addition of aligned decimals  
arith013 Decimal addition with 3 numbers  
arith734 Subtraction of aligned decimals  
arith735 Decimal subtraction: Basic  
arith736 Decimal subtraction: Advanced  
arith737 Decimal addition and subtraction with 3 or more numbers  
arith131 Estimating a decimal sum or difference  
arith117 Signed decimal addition and subtraction  
arith234 Signed decimal addition and subtraction with 3 numbers  
geom525 Computing distances between decimals on the number line  
arith132 Word problem with addition or subtraction of 2 decimals  
arith133 Word problem with addition of 3 or 4 decimals and whole numbers  
arith134 Word problem with subtraction of a whole number and a decimal: Regrouping with zeros  
arith739 Introduction to decimal multiplication  
arith017 Multiplication of a decimal by a whole number  
arith055 Decimal multiplication: Problem type 1  
arith046 Decimal multiplication: Problem type 2  
arith082 Multiplication of a decimal by a power of ten  
arith738 Multiplication of a decimal by a power of 0.1  
arith740 Multiplication of decimals that have a product less than 0.1  
arith752 Estimating a product of decimals  
arith750 Signed decimal multiplication  
arith135 Word problem with multiplication of a decimal and a whole number  
arith137 Word problem with multiplication of two decimals  
arith628 Word problem with multiple decimal operations: Problem type 1  
arith744 Whole number division with decimal answers  
arith081 Division of a decimal by a whole number  
arith743 Division of a decimal by a 1-digit decimal  
arith019 Division of a decimal by a 2-digit decimal  
arith083 Division of a decimal by a power of ten  
arith742 Division of a decimal by a power of 0.1  
arith745 Decimal division with rounding  
arith751 Signed decimal division  
arith136 Word problem with division of a decimal and a whole number  
arith138 Word problem with division of two decimals  
arith629 Word problem with multiple decimal operations: Problem type 2  
arith103 Average of two numbers  
arith725 Converting a fraction with a denominator of 10 or 100 to a decimal  
arith726 Converting a fraction with a denominator of 100 or 1000 to a decimal  
arith113 Converting a proper fraction with a denominator of 2, 4, or 5 to a decimal  
arith114 Converting a mixed number with a denominator of 2, 4, or 5 to a decimal  
arith727 Converting a fraction to a terminating decimal: Basic



arith728 Converting a fraction to a terminating decimal: Advanced  
 arith730 Converting a fraction to a repeating decimal: Basic  
 arith731 Converting a fraction to a repeating decimal: Advanced  
 arith733 Using a calculator to convert a fraction to a rounded decimal  
 arith111 Converting a mixed number to a terminating decimal: Basic  
 arith112 Converting a mixed number to a terminating decimal: Advanced  
 arith732 Converting a fraction or mixed number to a rounded decimal  
 arith609 Ordering fractions and decimals  
 arith753 Squaring decimal bases: Products greater than 0.1  
 arith741 Exponents and decimals: Products less than 0.1  
 arith720 Order of operations with decimals: Problem type 1  
 arith746 Order of operations with decimals: Problem type 2  
 arith747 Order of operations with decimals: Problem type 3  
 arith748 Addition or subtraction with a decimal and a mixed number  
 arith749 Multiplication with a decimal and a fraction  
 alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
 alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
 alge800 Additive property of equality with decimals  
 alge825 Multiplicative property of equality with decimals

### Ratios, Proportions, and Measurement

arith823 Writing ratios using different notations  
 arith663 Writing ratios for real-world situations  
 arith450 Identifying statements that describe a ratio  
 arith824 Simplifying a ratio of whole numbers: Problem type 1  
 arith825 Simplifying a ratio of decimals  
 arith827 Finding a unit price  
 arith455 Using tables to compare ratios  
 arith828 Computing unit prices to find the better buy  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 arith505 Word problem on unit rates associated with ratios of fractions  
 arith506 Word problem on unit rates associated with ratios of mixed numbers  
 arith064 Solving a word problem on proportions using a unit rate  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 arith452 Finding missing values in a table of equivalent ratios  
 arith453 Using a table of equivalent ratios to find a missing quantity in a ratio  
 arith504 Writing an equation to represent a proportional relationship  
 alge819 Solving a proportion of the form  $x/a=b/c$ : Basic  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 arith045 Word problem with powers of ten  
 arith500 Identifying proportional relationships in tables by calculating unit rates: Whole numbers  
 arith510 Identifying proportional relationships in tables by calculating unit rates: Fractions  
 geom359 Identifying congruent shapes on a grid  
 geom360 Identifying similar or congruent shapes on a grid  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom538 Finding lengths using scale models  
 geom539 Finding a scale factor: Same units  
 geom541 Using a scale drawing to find actual area  
 geom542 Reproducing a scale drawing at a different scale  
 mstat058 Choosing a measuring tool  
 mstat059 Choosing U.S. Customary measurement units  
 mstat033 Measuring length to the nearest inch  
 mstat034 Measuring length to the nearest quarter or half inch  
 unit005 U.S. Customary unit conversion with whole number values  
 mstat035 Conversions involving measurements in feet and inches

mstat036 Adding measurements in feet and inches  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 unit007 U.S. Customary unit conversion with mixed number values: One-step conversion  
 unit008 U.S. Customary unit conversion with mixed number values: Two-step conversion  
 unit009 U.S. Customary area unit conversion with whole number values  
 mstat060 Choosing metric measurement units  
 mstat063 Measuring length to the nearest centimeter  
 mstat064 Measuring length to the nearest millimeter  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit012 Time unit conversion with whole number values  
 time009 Introduction to adding time  
 time006 Adding time  
 time011 Introduction to elapsed time  
 time007 Elapsed time  
 mstat062 Reading a positive temperature from a thermometer  
 mstat038 Reading the temperature from a thermometer  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 arith826 Simplifying a ratio of whole numbers: Problem type 2  
 alge218 Solving a word problem involving rates and time conversion  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced

## Percents

arith836 Converting a fraction with a denominator of 100 to a percentage  
 arith837 Converting a percentage to a fraction with a denominator of 100  
 arith674 Finding the percentage of a grid that is shaded  
 arith903 Representing benchmark percentages on a grid  
 arith723 Introduction to converting a percentage to a decimal  
 arith833 Introduction to converting a decimal to a percentage  
 arith834 Converting between percentages and decimals  
 arith841 Converting a mixed number percentage to a decimal  
 arith835 Converting between percentages and decimals in a real-world situation  
 arith090 Converting a percentage to a fraction in simplest form  
 arith839 Converting a decimal percentage to a fraction  
 arith838 Converting a fraction to a percentage: Denominator of 4, 5, or 10  
 arith904 Finding benchmark fractions and percentages for a figure  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith843 Using a calculator to convert a fraction to a rounded percentage  
 arith842 Converting a fraction to a percentage in a real-world situation  
 arith840 Finding a percentage of a whole number  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith844 Finding a percentage of a whole number without a calculator: Advanced  
 arith862 Applying the percent equation: Problem type 1  
 arith863 Applying the percent equation: Problem type 2  
 arith845 Finding a percentage of a total amount: Real-world situations  
 arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount  
 arith857 Estimating a tip without a calculator  
 arith069 Writing a ratio as a percentage without a calculator  
 arith850 Finding the rate of a tax or commission  
 arith849 Finding the total amount given the percentage of a partial amount  
 stat805 Making a reasonable inference based on proportion statistics  
 stat804 Interpreting a circle graph or pie chart  
 arith856 Finding a percentage of a total amount in a circle graph  
 stat801 Computations from a circle graph

arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
 arith851 Finding the final amount given the original amount and a percentage increase or decrease  
 arith847 Finding the sale price given the original price and percent discount  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith848 Finding the total cost including tax or markup  
 arith855 Finding the original amount given the result of a percentage increase or decrease  
 arith031 Finding the original price given the sale price and percent discount  
 arith858 Finding the percentage increase or decrease: Basic  
 arith225 Finding the percentage increase or decrease: Advanced  
 unit052 Finding the absolute error and percent error of a measurement  
 arith232 Finding simple interest without a calculator  
 arith853 Introduction to compound interest  
 arith915 Calculating income tax  
 arith918 Comparing discounts  
 arith909 Examining a savings plan for college  
 arith914 Calculations involving paying for college  
 arith920 Comparing total costs for attending different colleges  
 arith922 Distinguishing between fixed and variable expenses  
 arith916 Computing percentages for categories of a budget  
 arith919 Computations involving cost of living and hourly wage  
 arith921 Comparing annual salaries of different occupations  
 arith911 Calculations involving purchases with debit and credit cards  
 arith950 Comparing costs of checking accounts  
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 arith917 Computing a person's net worth  
 arith906 Calculating and comparing monthly payments using the ALEKS loan calculator  
 arith907 Calculating monthly payment, total payment, and interest using the ALEKS loan calculator  
 arith908 Calculating and comparing total loan payments using the ALEKS loan calculator  
 arith910 Calculating and comparing simple interest and compound interest

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 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 arith655 Introduction to properties of addition  
 alge187 Properties of addition  
 alge666 Combining like terms: Fractional coefficients  
 alge665 Combining like terms: Decimal coefficients  
 alge310 Multiplying a constant and a linear monomial  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge610 Distributive property: Fractional coefficients  
 alge605 Factoring a linear binomial  
 alge612 Identifying parts in an algebraic expression  
 alge613 Identifying equivalent algebraic expressions  
 arith656 Introduction to properties of multiplication  
 alge188 Properties of real numbers  
 alge608 Using distribution and combining like terms to simplify: Univariate  
 alge667 Identifying properties used to simplify an algebraic expression  
 alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
 alge293 Combining like terms in a quadratic expression  
 alge436 Adding rational expressions with different denominators and a single occurrence of a variable  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge803 Using two steps to solve an equation with whole numbers  
 alge266 Additive property of equality with a negative coefficient  
 alge006 Solving a two-step equation with integers  
 alge200 Solving an equation to find the value of an expression

alge920 Introduction to solving an equation with parentheses  
 alge837 Solving a multi-step equation given in fractional form  
 alge986 Identifying properties used to solve a linear equation  
 alge824 Solving a two-step equation with signed decimals  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge611 Introduction to solving a linear equation with a variable on each side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge614 Clearing fractions in an equation  
 alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
 alge208 Solving a two-step equation with signed fractions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge840 Solving a proportion of the form  $(x+a)\div b = c\div d$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 alge658 Introduction to solving a rational equation  
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge603 Introduction to solving an absolute value equation  
 alge864 Solving an absolute value equation: Problem type 1  
 alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
 alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
 alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
 alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
 alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
 alge518 Solving for a variable inside parentheses in terms of other variables  
 alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge016 Translating a sentence into a one-step equation  
 alge671 Choosing stories that can be represented by given one-step equations  
 alge841 Translating a sentence into a multi-step equation  
 alge628 Writing an equation of the form  $Ax + B = C$  to solve a word problem  
 alge618 Comparing arithmetic and algebraic solutions to a word problem  
 alge672 Choosing stories that can be represented by given two-step equations  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge629 Writing an equation of the form  $A(x + B) = C$  to solve a word problem  
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge673 Writing an equation to represent a real-world problem: Variable on both sides  
 alge674 Writing and solving a real-world problem given an equation with the variable on both sides  
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge792 Solving a word problem with three unknowns using a linear equation  
 alge842 Solving a word problem involving consecutive integers  
 alge794 Solving a value mixture problem using a linear equation  
 alge795 Solving a percent mixture problem using a linear equation  
 alge796 Solving a distance, rate, time problem using a linear equation  
 alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge653 Introduction to identifying solutions to an inequality  
 alge748 Writing an inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line

alge652 Identifying solutions to a one-step linear inequality  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge809 Multiplicative property of inequality with whole numbers  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge621 Solving a word problem using a one-step linear inequality  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge636 Solving a linear inequality with whole numbers  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge846 Translating a sentence into a multi-step inequality  
 alge619 Solving a word problem using a two-step linear inequality and describing the solution  
 alge623 Solving a word problem using a two-step linear inequality  
 alge749 Solving a decimal word problem using a two-step linear inequality

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 alge279 Plotting a point in quadrant 1  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge692 Plotting a point in quadrant 1: Mixed number coordinates  
 alge693 Plotting a point in the coordinate plane: Mixed number coordinates  
 arith404 Naming the quadrant or axis of a point given its graph  
 arith405 Naming the quadrant or axis of a point given its coordinates  
 arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
 alge695 Finding distances between points that share a common coordinate given the graph  
 alge696 Finding distances between points that share a common coordinate given their coordinates  
 alge191 Midpoint of a line segment in the plane  
 alge282 Function tables with two-step rules  
 alge850 Table for a linear equation  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 alge280 Graphing a line in quadrant 1  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
 alge924 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Basic  
 alge210 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Advanced  
 alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
 alge881 Graphing a line by first finding its  $x$ - and  $y$ -intercepts  
 alge874 Identifying linear functions given ordered pairs  
 geom358 Identifying parallel and perpendicular lines  
 mstat007 Interpreting a line graph  
 arith454 Making a table and plotting points given a unit rate  
 arith501 Identifying proportional relationships in graphs: Basic  
 arith502 Identifying proportional relationships in graphs: Advanced  
 arith512 Finding outputs and rate of increase given the graph of a line that models a real-world situation

alge699 Comparing proportional relationships given in different forms  
 alge575 Finding slope given the graph of a line in quadrant 1 that models a real-world situation  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines  
 alge814 Using right triangles to find the slope of a line  
 alge888 Finding the coordinate that yields a given slope  
 alge259 Graphing a line given its slope and y-intercept  
 alge196 Graphing a line through a given point with a given slope  
 alge982 Identifying direct variation equations  
 alge938 Identifying direct variation from ordered pairs and writing equations  
 alge904 Writing a direct variation equation  
 alge175 Word problem on direct variation  
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 alge905 Writing an inverse variation equation  
 alge903 Identifying direct and inverse variation equations  
 alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
 alge176 Word problem on inverse variation  
 alge220 Word problem on inverse proportions  
 alge625 Identifying linear equations: Basic  
 alge891 Rewriting a linear equation in the form  $Ax + By = C$   
 alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
 alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
 alge882 Graphing a line by first finding its slope and y-intercept  
 alge258 Writing an equation of a line given its slope and y-intercept  
 alge892 Writing an equation and graphing a line given its slope and y-intercept  
 alge893 Writing an equation in slope-intercept form given the slope and a point  
 alge883 Graphing a line given its equation in point-slope form  
 alge894 Writing an equation in point-slope form given the slope and a point  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 alge895 Identifying parallel and perpendicular lines from equations  
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 alge630 Finding outputs of a one-step function that models a real-world situation: Two variable equation  
 alge632 Finding outputs of a two-step function with decimals that models a real-world situation: Two variable equation  
 alge633 Finding inputs and outputs of a two-step function that models a real-world situation: Two variable equation  
 alge655 Writing and evaluating a function that models a real-world situation: Basic  
 alge897 Writing and evaluating a function that models a real-world situation: Advanced  
 alge654 Graphing ordered pairs and writing an equation from a table of values in context  
 alge656 Writing an equation and drawing its graph to model a real-world situation: Basic  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge817 Finding the initial amount and rate of change given a table for a linear function  
 alge818 Finding the initial amount and rate of change given a graph of a linear function  
 alge987 Comparing properties of linear functions given in different forms  
 alge989 Interpreting the parameters of a linear function that models a real-world situation  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 alge670 Identifying independent and dependent quantities from tables and graphs  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun016 Domain and range from ordered pairs  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 alge294 Finding outputs of a one-step function that models a real-world situation: Function notation  
 alge295 Finding outputs of a two-step function with decimals that models a real-world situation: Function no-



tation

- alge296 Finding inputs and outputs of a two-step function that models a real-world situation: Function notation
- alge990 Domain and range of a linear function that models a real-world situation
- fun026 Finding an output of a function from its graph
- pcalc761 Finding inputs and outputs of a function from its graph
- fun007 Domain and range from the graph of a discrete relation
- alge896 Graphing an integer function and finding its range for a given domain
- alge570 Graphing a function of the form  $f(x) = ax + b$ : Integer slope
- alge571 Graphing a function of the form  $f(x) = ax + b$ : Fractional slope
- alge999 Finding where a function is increasing, decreasing, or constant given the graph
- mstat018 Choosing a graph to fit a narrative: Basic
- mstat051 Choosing a graph to fit a narrative: Advanced
- alge913 Graphing an absolute value equation of the form  $y = A - |x - h| + k$
- alge900 Graphing an absolute value equation in the plane: Basic
- alge168 Graphing an absolute value equation in the plane: Advanced
- alge954 Graphing a parabola of the form  $y = ax^2$
- alge955 Graphing a parabola of the form  $y = ax^2 + c$
- alge262 Graphing a cubic function of the form  $y = ax^3$
- alge925 Finding the next terms of an arithmetic sequence with whole numbers
- alge933 Finding the next terms of a geometric sequence with whole numbers
- alge732 Finding patterns in shapes
- alge644 Finding the first terms of an arithmetic sequence using an explicit rule
- alge645 Finding the first terms of a geometric sequence using an explicit rule
- alge906 Finding the next terms of an arithmetic sequence with integers
- alge979 Identifying arithmetic sequences and finding the common difference
- alge931 Finding a specified term of an arithmetic sequence given the first terms
- pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term
- alge909 Writing an explicit rule for an arithmetic sequence
- alge907 Finding the next terms of a geometric sequence with signed numbers
- alge981 Identifying arithmetic and geometric sequences
- alge980 Identifying geometric sequences and finding the common ratio
- alge934 Finding a specified term of a geometric sequence given the first terms
- pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term
- pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule
- alge914 Identifying solutions to a system of linear equations
- alge725 Graphically solving a system of linear equations
- alge815 Introduction to using substitution to solve a linear equation
- alge816 Solving a system of linear equations of the form  $y = mx + b$
- alge751 Solving a system of linear equations using substitution
- alge915 Solving a system of linear equations using elimination with addition
- alge076 Solving a system of linear equations using elimination with multiplication and addition
- alge634 Solving systems of linear equations with 0, 1, or infinitely many solutions
- alge263 Interpreting the graphs of two functions
- alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations
- alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$
- alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$
- alge184 Solving a value mixture problem using a system of linear equations
- pcalc038 Addition or subtraction of matrices
- alge912 Identifying solutions to a linear inequality in two variables
- alge225 Graphing a linear inequality in the plane: Vertical or horizontal line
- alge720 Graphing a linear inequality in the plane: Slope-intercept form
- alge018 Graphing a linear inequality in the plane: Standard form
- alge079 Graphing a system of two linear inequalities: Basic
- alge921 Graphing a system of two linear inequalities: Advanced

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- alge686 Introduction to the product rule with positive exponents: Whole number base
- alge821 Understanding the product rule of exponents
- alge024 Introduction to the product rule of exponents



alge311 Product rule with positive exponents: Univariate  
 alge030 Product rule with positive exponents: Multivariate  
 alge690 Introduction to the power of a power rule with positive exponents: Whole number base  
 alge826 Understanding the power rules of exponents  
 alge306 Introduction to the power of a power rule of exponents  
 alge305 Introduction to the power of a product rule of exponents  
 alge307 Power rules with positive exponents: Multivariate products  
 alge308 Power rules with positive exponents: Multivariate quotients  
 alge451 Simplifying a ratio of multivariate monomials: Basic  
 alge688 Introduction to the quotient rule with positive exponents: Whole number base  
 alge827 Introduction to the quotient rule of exponents  
 alge452 Simplifying a ratio of univariate monomials  
 alge026 Quotient of expressions involving exponents  
 arith029 Ordering numbers with positive exponents  
 arith684 Power of 10: Negative exponent  
 arith729 Evaluating an expression with a negative exponent: Whole number base  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge687 Introduction to the product rule with negative exponents: Whole number base  
 alge961 Introduction to the product rule with negative exponents  
 alge689 Introduction to the quotient rule with negative exponents: Whole number base  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge691 Introduction to the power of a power rule with negative exponents: Whole number base  
 alge025 Power of a power rule with negative exponents  
 scinot023 Introduction to scientific notation with positive exponents  
 arith036 Scientific notation with positive exponent  
 scinot024 Introduction to scientific notation with negative exponents  
 arith037 Scientific notation with negative exponent  
 scinot012 Converting between scientific notation and standard form in a real-world situation  
 scinot025 Estimating numbers using scientific notation  
 scinot020 Choosing metric units and converting to the base unit in scientific notation  
 scinot021 Expressing calculator notation as scientific notation  
 scinot008 Multiplying numbers written in scientific notation: Basic  
 scinot009 Multiplying numbers written in scientific notation: Advanced  
 scinot019 Multiplying numbers written in decimal form or scientific notation in a real-world situation  
 scinot010 Dividing numbers written in scientific notation: Basic  
 scinot011 Dividing numbers written in scientific notation: Advanced  
 scinot013 Finding the scale factor between numbers given in scientific notation in a real-world situation  
 scinot015 Adding or subtracting numbers written in scientific notation: Same exponents, basic  
 scinot022 Adding or subtracting numbers written in scientific notation: Same exponents, advanced  
 scinot016 Adding or subtracting numbers written in scientific notation: Different exponents  
 scinot017 Estimating the sum or difference of two numbers written in scientific notation  
 alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge032 Squaring a binomial: Univariate  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge736 Introduction to the GCF of two monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge039 Factoring a quadratic with leading coefficient 1

alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 arith016 Square root of a perfect square  
 arith601 Square root of a rational perfect square  
 alge413 Finding all square roots of a number  
 arith760 Square roots of perfect squares with signs  
 arith763 Using a calculator to approximate a square root  
 arith602 Estimating a square root  
 alge567 Using numerical methods to approximate a square root to the nearest tenth  
 alge568 Using numerical methods to approximate a square root to the nearest hundredth  
 arith515 Approximating the location of irrational numbers on a number line  
 arith712 Ordering real numbers  
 alge001 Identifying numbers as integers or non-integers  
 arith513 Identifying rational decimal numbers  
 arith514 Converting a repeating decimal to a fraction  
 arith432 Identifying true statements about rational and irrational numbers  
 alge002 Identifying numbers as rational or irrational  
 alge415 Introduction to simplifying a radical expression with an even exponent  
 alge264 Square root of a perfect square monomial  
 arith093 Simplifying the square root of a whole number less than 100  
 arith762 Simplifying the square root of a whole number greater than 100  
 alge080 Simplifying a radical expression with an even exponent  
 arith767 Introduction to square root addition or subtraction  
 arith032 Square root addition or subtraction  
 arith764 Introduction to square root multiplication  
 arith765 Square root multiplication: Basic  
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 geom564 Finding side lengths of squares given an area and a perimeter  
 alge400 Introduction to solving a radical equation  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge542 Word problem involving radical equations: Basic  
 arith094 Cube root of an integer  
 alge698 Solving an equation of the form  $x^3 = a$  using integers  
 alge093 Solving an equation using the odd-root property: Problem type 1  
 geom565 Finding the side length of a cube given its volume  
 alge560 Rational exponents: Unit fraction exponents and whole number bases  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem  
 geom862 Using the Pythagorean Theorem repeatedly  
 alge675 Using the Pythagorean Theorem to find distance on a grid  
 alge132 Distance between two points in the plane: Exact answers

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geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom551 Finding the complement or supplement of an angle given a figure  
 geom552 Solving an equation involving complementary or supplementary angles  
 geom305 Identifying supplementary and vertical angles  
 geom553 Finding angle measures given two intersecting lines  
 geom530 Solving equations involving vertical angles  
 geom304 Identifying corresponding and alternate angles  
 geom349 Naming segments, rays, and lines  
 geom554 Finding angle measures given two parallel lines cut by a transversal

geom531 Solving equations involving angles and a pair of parallel lines  
 geom584 Establishing facts about the angles created when parallel lines are cut by a transversal  
 geom154 Constructing the perpendicular bisector of a line segment  
 geom158 Constructing an angle bisector  
 geom159 Constructing congruent angles  
 geom150 Constructing a pair of perpendicular lines  
 geom157 Constructing a pair of parallel lines  
 geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom860 Special right triangles: Decimal answers  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom623 Finding angle measures of a triangle given angles with variables  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 geom309 Finding an angle measure for a triangle sharing a side with another triangle  
 geom586 Establishing facts about the interior angles of a triangle  
 geom587 Establishing facts about the interior and exterior angles of a triangle  
 geom543 Drawing a circle with a given radius or diameter  
 geom544 Creating triangles from given side lengths: Problem type 1  
 geom634 Creating triangles from given side lengths: Problem type 2  
 geom844 Using triangle inequality to determine if side lengths form a triangle  
 geom548 Determining if a triangle is possible based on given angle measures  
 geom549 Determining if given measurements define a unique triangle, more than one triangle, or no triangle  
 geom546 Drawing triangles with given conditions: Angle measures  
 geom547 Drawing triangles with given conditions: Side lengths and angle measures  
 geom545 Drawing triangles with given side lengths using a compass  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 geom361 Naming polygons  
 mstat042 Interpreting a Venn diagram of 2 sets  
 geom536 Drawing and identifying a polygon in the coordinate plane  
 geom867 Identifying parallelograms, rectangles, and squares  
 geom310 Properties of quadrilaterals  
 geom532 Classifying parallelograms  
 geom818 Finding the coordinates of a point to make a parallelogram  
 geom870 Sum of the angle measures of a quadrilateral  
 geom852 The sum of interior angle measures in a convex polygon

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geom519 Identifying and naming congruent parts of congruent triangles  
 geom520 Identifying and naming congruent triangles  
 geom583 Finding angle measures of a triangle given two angles of a similar triangle  
 geom585 Finding angle measures and side ratios to determine if two triangles are similar  
 geom357 Identifying transformations  
 geom596 Translating a point and giving its coordinates: One step  
 geom909 Translating a point and giving its coordinates: Two steps  
 geom597 Properties of translated figures  
 geom598 Determining if figures are related by a translation  
 geom330 Translating a polygon  
 geom331 Using a translated point to find coordinates of other translated points  
 arith408 Reflecting a point across an axis

geom533 Reflecting a point across both coordinate axes  
 geom590 Reflecting a point across an axis and giving its coordinates  
 arith407 Finding the coordinates of a point reflected across an axis  
 geom560 Finding the coordinates of a point reflected across both axes  
 geom534 Reflecting a polygon across the x-axis or y-axis  
 geom591 Properties of reflected figures  
 geom592 Determining if figures are related by a reflection  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom333 Finding the coordinates of three points reflected over an axis  
 geom334 Drawing lines of symmetry  
 geom602 Finding the coordinates of a point reflected across an axis and translated  
 geom815 Finding an angle of rotation  
 geom624 Identifying rotational symmetry and angles of rotation  
 geom593 Rotating a point and giving its coordinates  
 geom594 Properties of rotated figures  
 geom595 Determining if figures are related by a rotation  
 geom335 Rotating a figure about the origin  
 geom580 Determining if figures are congruent and related by a transformation  
 geom581 Determining if figures are congruent and related by a sequence of transformations  
 geom606 Dilating a segment and giving the coordinates of its endpoints  
 geom607 The effect of dilation on side length  
 geom608 Determining if figures are related by a dilation  
 geom636 The effect of dilation on area  
 geom336 Dilating a figure  
 geom582 Determining if figures are similar and related by a sequence of transformations

### Perimeters, Areas, and Volumes

geom618 Perimeter of a polygon involving mixed numbers and fractions  
 geom078 Sides of polygons having the same perimeter  
 geom221 Finding the missing length in a figure  
 geom353 Perimeter of a piecewise rectangular figure  
 alge615 Writing algebraic expressions for the perimeter of a figure  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom561 Finding the dimensions of a rectangle given its perimeter and a relationship between sides  
 geom620 Area of a rectangle involving fractions  
 geom619 Area of a rectangle involving mixed numbers and fractions  
 geom350 Distinguishing between the area and perimeter of a rectangle  
 geom351 Areas of rectangles with the same perimeter  
 geom869 Estimates and exact answers  
 alge616 Writing algebraic expressions for the area of a figure  
 geom410 Word problem involving the area of a square or a rectangle  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom340 Area of a piecewise rectangular figure  
 geom562 Area between two rectangles  
 geom142 Word problem involving the area between two rectangles  
 geom501 Finding the area of a right triangle on a grid  
 geom509 Finding the area of a right triangle or its corresponding rectangle  
 geom801 Area of a triangle  
 geom517 Finding the area of a trapezoid on a grid by using triangles and rectangles  
 geom344 Area involving rectangles and triangles  
 alge724 Finding an area in terms of variables  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom537 Finding the perimeter or area of a rectangle in the coordinate plane  
 geom832 Area of quadrilaterals in the coordinate plane  
 geom603 Identifying side lengths that give right triangles  
 geom589 Demonstrating the converse of the Pythagorean Theorem  
 geom588 Informal proof of the Pythagorean Theorem

geom347 Introduction to a circle: Diameter, radius, and chord  
 geom343 Identifying central angles, inscribed angles, arcs, chords, and tangents of a circle  
 geom016 Circumference of a circle  
 geom218 Finding the radius or the diameter of a circle given its circumference  
 geom838 Circumference ratios  
 geom301 Perimeter involving rectangles and circles  
 geom026 Area of a circle  
 geom802 Circumference and area of a circle  
 geom570 Distinguishing between the area and circumference of a circle  
 geom302 Area involving rectangles and circles  
 geom563 Area between two concentric circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom126 Area of a sector of a circle: Exact answer in terms of  $\pi$   
 geom868 Classifying solids  
 geom348 Vertices, edges, and faces of a solid  
 geom830 Counting the cubes in a solid made of cubes  
 geom816 Side views of a solid made of cubes  
 geom550 Identifying horizontal and vertical cross sections of solids  
 geom354 Volume of a rectangular prism made of unit cubes  
 geom518 Volume of a solid made of cubes with unit fraction edge lengths  
 geom535 Volume of a rectangular prism with fractional edge lengths  
 alge617 Writing equivalent expressions for the volume of a rectangular prism  
 geom571 Word problem involving the volume of a rectangular prism  
 geom558 Word problem involving the rate of filling or emptying a rectangular prism  
 geom505 Volume of a piecewise rectangular prism  
 geom090 Volume of a triangular prism  
 geom572 Word problem involving the volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom637 Relating the volumes of a rectangular prism and a rectangular pyramid  
 geom638 Relating the volumes of a triangular prism and a triangular pyramid  
 geom035 Volume of a cylinder  
 geom573 Word problem involving the volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom622 Volume of a cone  
 geom086 Volume of a cone: Exact answers in terms of  $\pi$   
 geom639 Relating the volumes of a cylinder and a cone  
 geom575 Word problem involving the volume of a cone  
 geom841 Volume of a sphere  
 geom574 Word problem involving the volume of a sphere  
 geom133 Ratio of volumes  
 geom219 Nets of solids  
 geom031 Surface area of a cube or a rectangular prism  
 geom632 Surface area of a rectangular prism made of unit cubes  
 geom555 Distinguishing between surface area and volume  
 geom556 Using a net to find the surface area of a rectangular prism  
 geom576 Word problem involving the surface area of a rectangular prism  
 geom345 Surface area of a piecewise rectangular prism made of unit cubes  
 geom091 Surface area of a triangular prism  
 geom557 Using a net to find the surface area of a triangular prism  
 geom621 Surface area of a cylinder  
 geom034 Surface area of a cylinder: Exact answers in terms of  $\pi$   
 geom578 Word problem involving the surface area of a cylinder  
 geom842 Surface area of a sphere  
 geom338 Surface area involving prisms or cylinders  
 geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids  
 geom847 Similar solids: Problem type 2

### Data Analysis and Probability

mstat088 Identifying statistical questions

mstat080 Choosing an appropriate method for gathering data: Problem type 1  
mstat081 Choosing an appropriate method for gathering data: Problem type 2  
mstat056 Interpreting a tally table  
mstat097 Constructing a two-way frequency table: Basic  
mstat098 Constructing a two-way frequency table: Advanced  
mstat049 Computing a percentage from a table of values  
mstat087 Making an inference using a two-way frequency table  
stat020 Calculating relative frequencies in a contingency table  
mstat025 Finding if a question can be answered by the data  
mstat037 Constructing a line plot  
mstat005 Constructing a bar graph for non-numerical data  
mstat004 Constructing a histogram for numerical data  
mstat024 Interpreting a bar graph  
mstat044 Interpreting a double bar graph  
mstat057 Interpreting a pictograph table  
mstat031 Interpreting a stem-and-leaf plot  
geom814 Angle measure in a circle graph  
mstat094 Constructing a scatter plot  
mstat030 Sketching the line of best fit  
mstat023 Scatter plots and correlation  
mstat068 Predictions from the line of best fit  
mstat067 Approximating the equation of a line of best fit and making predictions  
mstat093 Classifying linear and nonlinear relationships from scatter plots  
mstat071 Linear relationship and the correlation coefficient  
mstat096 Identifying outliers and clustering in scatter plots  
mstat003 Mode of a data set  
mstat055 Finding the mode and range of a data set  
mstat092 Finding the mode and range from a line plot  
mstat001 Mean of a data set  
mstat077 Using a model to find the mean  
mstat075 Understanding the mean graphically: Two bars  
mstat076 Understanding the mean graphically: Four or more bars  
mstat091 Finding the mean of a symmetric distribution  
mstat079 Finding sample size and comparing samples for estimating the mean  
mstat089 Computations involving the mean, sample size, and sum of a data set  
stat803 Finding the value for a new score that will yield a given mean  
stat802 Rejecting unreasonable claims based on average statistics  
mstat066 Weighted mean  
mstat028 Mean and median of a data set  
mstat029 How changing a value affects the mean and median  
mstat095 Finding outliers in a data set  
mstat053 Choosing the best measure to describe data  
mstat078 Comparing measures of center and variation  
mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
mstat072 Five-number summary and interquartile range  
mstat006 Constructing a box-and-whisker plot  
mstat073 Using box-and-whisker plots to compare data sets  
mstat090 Comparing sample means  
mstat082 Computing mean absolute deviation from a list of numerical values  
mstat083 Computing mean absolute deviation from a bar graph  
mstat084 Assessing the degree of overlap of two distributions  
mstat043 Interpreting a Venn diagram of 3 sets  
mstat041 Interpreting a tree diagram  
mstat040 Introduction to the counting principle  
mstat015 Counting principle  
mstat099 Determining a sample space and outcomes for a simple event  
mstat100 Determining a sample space and outcomes for a compound event  
pcalc082 Factorial expressions  
mstat017 Computing permutations and combinations  
mstat008 Word problem involving permutations  
mstat009 Word problem involving combinations  
mstat054 Classifying likelihood

mstat026 Introduction to the probability of an event  
mstat010 Probability of an event  
mstat039 Understanding likelihood  
mstat048 Odds of an event  
stat106 Outcomes and event probability  
stat112 Probabilities involving two dice  
mstat011 Area as probability  
mstat046 Experimental and theoretical probability  
mstat047 Introduction to expectation  
mstat012 Probability of independent events  
mstat013 Probability of dependent events  
mstat085 Identifying outcomes in a random number table used to simulate a compound event  
mstat086 Using a random number table to simulate a compound event

## B.71 Prep. for GED Mathematics

### Whole Numbers and Integers

arith124 Whole number place value: Problem type 1  
arith125 Whole number place value: Problem type 2  
arith066 Expanded form  
arith028 Numeral translation: Problem type 1  
arith060 Numeral translation: Problem type 2  
arith635 Adding a 2-digit number and a 1-digit number with carry  
arith001 Addition without carry  
arith050 Addition with carry  
arith630 Addition with carry to the hundreds place  
arith012 Addition of large numbers  
arith636 Subtracting a 1-digit number from a 2-digit number  
arith007 Subtraction without borrowing  
arith006 Subtraction with borrowing  
arith637 Subtraction and regrouping with zeros  
arith682 Subtraction with multiple regrouping steps  
arith613 Word problem with addition or subtraction of whole numbers  
arith008 One-digit multiplication  
arith679 Multiplication by 10, 100, and 1000  
arith003 Multiplication without carry  
arith004 Multiplication with carry  
arith615 Introduction to multiplication of large numbers  
arith014 Multiplication of large numbers  
arith075 Division facts  
arith052 Division without carry  
arith005 Division with carry  
arith616 Quotient and remainder: Problem type 1  
arith617 Quotient and remainder: Problem type 2  
arith631 Quotient and remainder: Problem type 3  
arith023 Word problem with division of whole numbers and rounding  
arith614 Word problem with multiplication or division of whole numbers  
arith130 Word problem with multiplication and addition or subtraction of whole numbers  
arith651 Introduction to inequalities  
arith077 Ordering large numbers  
arith078 Rounding to tens or hundreds  
arith123 Rounding to hundreds or thousands  
arith061 Rounding to thousands, ten thousands, or hundred thousands  
arith101 Estimating a sum of whole numbers  
arith102 Estimating a difference of whole numbers  
arith677 Estimating a product  
arith678 Estimating a quotient



arith645 Introduction to parentheses  
arith681 Introduction to order of operations  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith647 Divisibility rules for 2, 5, and 10  
arith648 Divisibility rules for 3 and 9  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith070 Least common multiple of 2 numbers  
arith240 Word problem with common multiples  
mstat038 Reading the temperature from a thermometer  
alge286 Plotting integers on a number line  
arith071 Absolute value of a number  
arith104 Operations with absolute value: Problem type 2  
arith200 Integer addition: Problem type 1  
arith108 Integer addition: Problem type 2  
arith688 Integer subtraction: Problem type 1  
arith689 Integer subtraction: Problem type 2  
arith690 Integer subtraction: Problem type 3  
arith231 Integer multiplication and division  
arith118 Order of operations with integers

### **Rational Numbers**

arith623 Introduction to fractions  
arith663 Writing ratios for real-world situations  
arith665 Understanding equivalent fractions  
arith212 Equivalent fractions  
arith666 Introduction to simplifying a fraction  
arith067 Simplifying a fraction  
arith687 Fractional position on a number line  
arith667 Plotting fractions on a number line  
arith605 Plotting rational numbers on a number line  
arith044 Ordering fractions with the same denominator  
arith091 Ordering fractions with the same numerator  
arith092 Using a common denominator to order fractions  
arith110 Decimal place value: Tenths and hundredths  
arith220 Decimal place value: Hundreds to ten thousandths  
arith221 Rounding decimals  
arith129 Introduction to ordering decimals  
arith608 Ordering decimals  
arith609 Ordering fractions and decimals  
arith618 Addition or subtraction of fractions with the same denominator  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
arith100 Fractional part of a circle  
arith088 The reciprocal of a number  
arith079 Product of a unit fraction and a whole number  
arith086 Product of a fraction and a whole number: Problem type 1  
arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith095 Multi-step word problem involving fractions and multiplication  
arith022 Fraction division  
arith662 Writing a mixed number and an improper fraction for a shaded region  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith215 Addition or subtraction of mixed numbers with the same denominator  
arith084 Addition of mixed numbers with the same denominator and carry

arith216 Subtraction of mixed numbers with the same denominator and borrowing  
 arith085 Addition or subtraction of mixed numbers with different denominators  
 arith020 Mixed number multiplication: Problem type 1  
 arith076 Mixed number multiplication: Problem type 2  
 arith068 Mixed number division  
 arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
 arith671 Converting a fraction with a denominator of 10, 100, or 1000 to a decimal  
 arith222 Converting a fraction to a terminating decimal  
 arith089 Converting a fraction to a repeating decimal  
 arith672 Converting a decimal to a mixed number  
 arith223 Converting a mixed number to a decimal  
 arith624 Addition of aligned decimals  
 arith013 Decimal addition with 3 numbers  
 arith625 Subtraction of aligned decimals  
 arith626 Word problem with one decimal operation: Problem type 1  
 arith627 Word problem with one decimal operation: Problem type 2  
 arith131 Estimating a decimal sum or difference  
 arith082 Multiplication of a decimal by a power of ten  
 arith017 Multiplication of a decimal by a whole number  
 arith055 Decimal multiplication: Problem type 1  
 arith046 Decimal multiplication: Problem type 2  
 arith045 Word problem with powers of ten  
 arith628 Word problem with multiple decimal operations: Problem type 1  
 arith083 Division of a decimal by a power of ten  
 arith081 Division of a decimal by a whole number  
 arith019 Division of a decimal by a 2-digit decimal  
 arith629 Word problem with multiple decimal operations: Problem type 2  
 arith116 Signed fraction addition or subtraction: Basic  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith105 Signed fraction multiplication: Advanced  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 geom525 Computing distances between decimals on the number line

### Measurement, Proportion, Percents, and Probability

mstat033 Measuring length to the nearest inch  
 mstat034 Measuring length to the nearest quarter or half inch  
 unit005 U.S. Customary unit conversion with whole number values  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 unit007 U.S. Customary unit conversion with mixed number values: One-step conversion  
 unit008 U.S. Customary unit conversion with mixed number values: Two-step conversion  
 mstat035 Conversions involving measurements in feet and inches  
 mstat036 Adding measurements in feet and inches  
 unit009 U.S. Customary area unit conversion with whole number values  
 mstat063 Measuring length to the nearest centimeter  
 mstat064 Measuring length to the nearest millimeter  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 unit012 Time unit conversion with whole number values  
 time006 Adding time  
 time007 Elapsed time  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 alge218 Solving a word problem involving rates and time conversion

alge272 Solving a proportion of the form  $x/a = b/c$   
 arith064 Solving a word problem on proportions using a unit rate  
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 arith674 Finding the percentage of a grid that is shaded  
 arith226 Converting between percentages and decimals  
 arith090 Converting a percentage to a fraction in simplest form  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith069 Writing a ratio as a percentage without a calculator  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith031 Finding the original price given the sale price and percent discount  
 arith225 Finding the percentage increase or decrease: Advanced  
 arith232 Finding simple interest without a calculator  
 mstat049 Computing a percentage from a table of values  
 stat805 Making a reasonable inference based on proportion statistics  
 stat804 Interpreting a circle graph or pie chart  
 stat801 Computations from a circle graph  
 geom814 Angle measure in a circle graph  
 stat106 Outcomes and event probability  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat011 Area as probability  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 stat112 Probabilities involving two dice

### Variable Expressions and Equations

arith655 Introduction to properties of addition  
 arith656 Introduction to properties of multiplication  
 arith657 Understanding the distributive property  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge607 Combining like terms: Integer coefficients  
 alge663 Combining like terms: Advanced  
 alge293 Combining like terms in a quadratic expression  
 alge731 Evaluating an algebraic expression: Whole numbers with two operations  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge733 Writing a one-step expression for a real-world situation  
 alge602 Writing a one-step variable expression for a real-world situation  
 alge009 Additive property of equality with whole numbers  
 alge800 Additive property of equality with decimals  
 alge801 Additive property of equality with fractions and mixed numbers  
 alge010 Additive property of equality with integers  
 alge266 Additive property of equality with a negative coefficient  
 alge008 Multiplicative property of equality with whole numbers  
 alge012 Multiplicative property of equality with signed fractions  
 alge006 Solving a two-step equation with integers  
 alge208 Solving a two-step equation with signed fractions  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge810 Introduction to algebraic symbol manipulation  
 alge016 Translating a sentence into a one-step equation  
 alge730 Writing a multi-step equation for a real-world situation  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides

alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 alge015 Translating a sentence by using an inequality symbol  
 alge019 Solving a linear inequality: Problem type 1  
 alge020 Solving a linear inequality: Problem type 2  
 alge021 Solving a linear inequality: Problem type 3  
 alge017 Graphing a linear inequality on the number line  
 arith233 Introduction to exponents  
 arith683 Power of 10: Positive exponent  
 arith684 Power of 10: Negative exponent  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent  
 scinot002 Multiplying and dividing numbers written in scientific notation  
 arith047 Evaluating expressions with exponents: Problem type 1  
 arith049 Evaluating expressions with exponents: Problem type 2  
 arith600 Order of operations with integers and exponents  
 arith016 Square root of a perfect square  
 arith602 Estimating a square root  
 arith601 Square root of a rational perfect square  
 arith093 Simplifying the square root of a whole number less than 100  
 arith094 Cube root of an integer  
 alge024 Introduction to the product rule of exponents  
 arith029 Ordering numbers with positive exponents  
 alge030 Product rule with positive exponents: Multivariate  
 alge026 Quotient of expressions involving exponents  
 alge027 Power rules with positive exponents  
 alge004 Evaluating a quadratic expression: Integers  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge055 Least common multiple of two monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge705 Factoring a quadratic with leading coefficient 1  
 alge040 Factoring a quadratic with leading coefficient greater than 1  
 alge624 Factoring a difference of squares  
 alge681 Solving an equation written in factored form  
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic

## Functions and Graphs

mstat005 Constructing a bar graph for non-numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat007 Interpreting a line graph  
 mstat003 Mode of a data set  
 mstat028 Mean and median of a data set  
 stat803 Finding the value for a new score that will yield a given mean  
 mstat029 How changing a value affects the mean and median  
 mstat025 Finding if a question can be answered by the data  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 alge282 Function tables with two-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge807 Finding the next terms of a sequence with whole numbers  
 mstat061 Describing an increasing or decreasing pattern from a table of values  
 alge066 Finding a solution to a linear equation in two variables  
 alge216 Determining whether given points lie on one, both, or neither of 2 lines given equations

alge194 Graphing a line given its equation in slope-intercept form  
 alge195 Graphing a line given its equation in standard form  
 alge197 Graphing a line given its x- and y-intercepts  
 alge196 Graphing a line through a given point with a given slope  
 alge198 Graphing a vertical or horizontal line  
 alge684 Finding slope given the graph of a line on a grid  
 alge685 Finding slope given two points on the line  
 alge631 Finding the slope of a line given its equation  
 alge069 Finding the y-intercept of a line given its equation  
 alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge071 Writing the equation of a line given the slope and a point on the line  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge263 Interpreting the graphs of two functions  
 alge132 Distance between two points in the plane: Exact answers  
 alge191 Midpoint of a line segment in the plane  
 alge252 Graphing a parabola of the form  $y = ax^2$

## Geometry

geom349 Naming segments, rays, and lines  
 geom358 Identifying parallel and perpendicular lines  
 geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom304 Identifying corresponding and alternate angles  
 geom305 Identifying supplementary and vertical angles  
 geom530 Solving equations involving vertical angles  
 geom531 Solving equations involving angles and a pair of parallel lines  
 geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom520 Identifying and naming congruent triangles  
 geom801 Area of a triangle  
 geom001 Finding an angle measure of a triangle given two angles  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom309 Finding an angle measure for a triangle sharing a side with another triangle  
 geom044 Pythagorean Theorem  
 geom854 Relationship between angle measures and side lengths in a triangle  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 geom361 Naming polygons  
 geom867 Identifying parallelograms, rectangles, and squares  
 geom310 Properties of quadrilaterals  
 geom300 Perimeter of a square or a rectangle  
 geom339 Perimeter of a polygon  
 geom078 Sides of polygons having the same perimeter  
 geom221 Finding the missing length in a figure  
 geom353 Perimeter of a piecewise rectangular figure  
 geom019 Area of a square or a rectangle  
 geom350 Distinguishing between the area and perimeter of a rectangle  
 geom351 Areas of rectangles with the same perimeter  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom340 Area of a piecewise rectangular figure  
 geom142 Word problem involving the area between two rectangles

geom344 Area involving rectangles and triangles  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom832 Area of quadrilaterals in the coordinate plane  
 geom347 Introduction to a circle: Diameter, radius, and chord  
 geom016 Circumference of a circle  
 geom218 Finding the radius or the diameter of a circle given its circumference  
 geom838 Circumference ratios  
 geom301 Perimeter involving rectangles and circles  
 geom802 Circumference and area of a circle  
 geom036 Word problem involving the area between two concentric circles  
 geom302 Area involving rectangles and circles  
 geom214 Area involving inscribed figures  
 geom868 Classifying solids  
 geom354 Volume of a rectangular prism made of unit cubes  
 geom311 Volume of a rectangular prism  
 geom505 Volume of a piecewise rectangular prism  
 geom090 Volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom035 Volume of a cylinder  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom348 Vertices, edges, and faces of a solid  
 geom219 Nets of solids  
 geom031 Surface area of a cube or a rectangular prism  
 geom359 Identifying congruent shapes on a grid  
 geom360 Identifying similar or congruent shapes on a grid  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids

## B.72 H.S. Prep. for Statistics

### Numbers

arith200 Integer addition: Problem type 1  
 arith688 Integer subtraction: Problem type 1  
 arith231 Integer multiplication and division  
 arith048 Order of operations with whole numbers  
 arith051 Order of operations with whole numbers and grouping symbols  
 arith118 Order of operations with integers  
 arith220 Decimal place value: Hundreds to ten thousandths  
 arith221 Rounding decimals  
 arith082 Multiplication of a decimal by a power of ten  
 arith083 Division of a decimal by a power of ten  
 arith117 Signed decimal addition and subtraction  
 arith226 Converting between percentages and decimals  
 arith090 Converting a percentage to a fraction in simplest form  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith686 Writing a ratio as a percentage  
 stat849 Computing a percentage from a table of values  
 arith067 Simplifying a fraction  
 arith664 Introduction to addition or subtraction of fractions with different denominators  
 arith053 Fraction multiplication  
 arith022 Fraction division

### Algebraic Expressions

arith047 Evaluating expressions with exponents: Problem type 1  
arith600 Order of operations with integers and exponents  
alge731 Evaluating an algebraic expression: Whole numbers with two operations  
alge004 Evaluating a quadratic expression: Integers  
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
alge606 Distributive property: Whole number coefficients  
alge607 Combining like terms: Integer coefficients  
stat026 Introduction to summation notation  
stat022 Summation of indexed data  
alge024 Introduction to the product rule of exponents  
alge027 Power rules with positive exponents

### Linear Equations

alge016 Translating a sentence into a one-step equation  
alge292 Translating sentences into two-variable equations  
alge810 Introduction to algebraic symbol manipulation  
alge006 Solving a two-step equation with integers  
alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution

### Lines in the Coordinate Plane

alge064 Reading a point in the coordinate plane  
alge067 Plotting a point in the coordinate plane  
alge256 Y-intercept of a line  
alge257 X- and y-intercepts of a line given the equation in standard form  
alge197 Graphing a line given its x- and y-intercepts  
alge194 Graphing a line given its equation in slope-intercept form  
alge684 Finding slope given the graph of a line on a grid  
alge070 Writing an equation of a line given the y-intercept and another point  
alge196 Graphing a line through a given point with a given slope

### Descriptive Statistics

stat777 Classification of variables and levels of measurement  
stat142 Discrete versus continuous variables  
stat807 Interpreting line graphs  
stat227 Interpreting bar graphs  
stat844 Double bar charts  
stat904 Interpreting pie charts  
stat901 Computations from pie charts  
stat831 Interpreting a stem-and-leaf display  
stat702 Histograms for grouped data  
stat717 Interpreting relative frequency histograms  
stat703 Frequency polygons for grouped data  
stat718 Cumulative distributions and ogives  
stat706 Mean, median, and mode: Computations  
stat798 Mean, median, and mode: Comparisons  
stat007 Weighted mean: Tabular data  
stat902 Rejecting unreasonable claims based on average statistics  
stat905 Making reasonable inferences based on proportion statistics  
stat009 Percentiles  
stat021 Population standard deviation  
stat011 Sample standard deviation



**Counting and Probability**

stat782 Factorial expressions  
 stat788 Combinations  
 stat789 Permutations  
 stat826 Introduction to probability of an event  
 stat810 Probability of an event  
 stat846 Experimental and theoretical probability  
 stat106 Outcomes and event probability  
 stat226 Die rolling  
 stat850 Probability of independent events  
 stat851 Probability of dependent events  
 stat117 Probabilities of draws with replacement  
 stat114 Probability of intersection or union: Word problems  
 stat116 Conditional probability: Basic  
 stat109 Intersection and conditional probability

**B.73 AP Statistics (Quantitative)****Mathematical Readiness**

arith048 Order of operations with whole numbers  
 arith051 Order of operations with whole numbers and grouping symbols  
 arith220 Decimal place value: Hundreds to ten thousandths  
 arith221 Rounding decimals  
 arith226 Converting between percentages and decimals  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith069 Writing a ratio as a percentage without a calculator  
 arith090 Converting a percentage to a fraction in simplest form  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 stat022 Summation of indexed data  
 alge006 Solving a two-step equation with integers  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge256 Y-intercept of a line  
 alge257 X- and y-intercepts of a line given the equation in standard form  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge197 Graphing a line given its x- and y-intercepts  
 alge194 Graphing a line given its equation in slope-intercept form  
 alge196 Graphing a line through a given point with a given slope

**Descriptive Statistics**

stat904 Interpreting pie charts  
 stat901 Computations from pie charts  
 stat844 Double bar charts  
 stat702 Histograms for grouped data  
 stat703 Frequency polygons for grouped data  
 stat717 Interpreting relative frequency histograms  
 stat718 Cumulative distributions and ogives  
 stat164 Comparing means without calculation  
 stat165 Comparing standard deviations without calculation

stat023 Box-and-whisker plots  
 stat831 Interpreting a stem-and-leaf display  
 stat827 Using back-to-back stem-and-leaf displays to compare data sets  
 stat706 Mean, median, and mode: Computations  
 stat902 Rejecting unreasonable claims based on average statistics  
 stat007 Weighted mean: Tabular data  
 stat719 Estimating the mean of grouped data  
 stat009 Percentiles  
 stat021 Population standard deviation  
 stat011 Sample standard deviation  
 stat729 Estimating the standard deviation of grouped data  
 stat730 Chebyshev's theorem and the empirical rule  
 stat798 Mean, median, and mode: Comparisons  
 stat025 Transforming the mean and standard deviation of a data set  
 stat905 Making reasonable inferences based on proportion statistics

### Probability

stat782 Factorial expressions  
 stat788 Combinations  
 stat789 Permutations  
 stat790 Permutations, combinations, and the multiplication principle for counting  
 stat117 Probabilities of draws with replacement  
 stat118 Probabilities of draws without replacement  
 stat119 Venn diagrams: Two events  
 stat100 Venn diagrams: Three events  
 stat101 Venn diagrams: Word problems  
 stat106 Outcomes and event probability  
 stat226 Die rolling  
 stat114 Probability of intersection or union: Word problems  
 stat115 Independent events: Basic  
 stat120 Probability of union: Basic  
 stat104 Mutually exclusive events: Two events  
 stat102 Mutually exclusive events: Three events  
 stat850 Probability of independent events  
 stat105 Independent events: Two events  
 stat103 Independent events: Three events  
 stat113 The curious die  
 stat020 Calculating relative frequencies in a contingency table  
 stat116 Conditional probability: Basic  
 stat851 Probability of dependent events  
 stat109 Intersection and conditional probability  
 stat107 Conditional probability: Mutually exclusive events  
 stat108 Conditional probability: Independent events  
 stat756 Tree diagrams for conditional probabilities  
 stat110 Law of total probabilities  
 stat111 Bayes' theorem

### Random Variables

stat777 Classification of variables and levels of measurement  
 stat142 Discrete versus continuous variables  
 stat151 Discrete probability distribution: Basic  
 stat143 Discrete probability distribution: Word problems  
 stat149 Cumulative distribution function  
 stat150 Expectation and variance of a random variable  
 stat153 Rules for expectation and variance of random variables  
 stat145 Marginal distributions of two discrete random variables

stat146 Joint distributions of dependent or independent random variables  
stat147 Probabilities of two random variables given their joint distribution  
stat148 Conditional probabilities of two random variables given their joint distribution

### Distributions

stat156 Binomial problems: Mean and standard deviation  
stat174 Binomial problems: Basic  
stat155 Binomial problems: Advanced  
stat157 Standard normal probabilities  
stat760 Standard normal values: Basic  
stat160 Standard normal values: Advanced  
stat159 Normal versus standard normal density curves  
stat161 Normal distribution raw scores  
stat162 Mean and deviation of a normal distribution  
stat163 Normal distribution: Word problems  
stat173 t distribution  
stat170 Chi-square distribution  
stat187 Normal approximation to binomial  
stat185 Central limit theorem: Sample mean  
stat186 Central limit theorem: Sample sum  
stat188 Central limit theorem: Sample proportion

### Inferential Statistics

stat200 Selecting a distribution for inferences on the population mean  
stat201 Confidence interval for the population mean: Use of the standard normal  
stat755 Choosing an appropriate sample size  
stat202 Confidence interval for the population mean: Use of the t distribution  
stat203 Confidence interval for a population proportion  
stat205 Confidence interval for the difference of population means: Use of the standard normal  
stat206 Confidence interval for the difference of population means: Use of the t distribution  
stat207 Confidence interval for the difference of population proportions  
stat300 Determining null and alternative hypotheses  
stat190 Type I and Type II errors  
stat192 Type I and Type II errors and power  
stat194 Effect size, sample size, and power  
stat301 Hypothesis test for the population mean: Z test  
stat302 Hypothesis test for the population mean: t test  
stat303 Hypothesis test for a population proportion  
stat305 Hypothesis test for the difference of population means: Z test  
stat309 Hypothesis test for the difference of population means: Paired comparisons  
stat306 Hypothesis test for the difference of population means: t test  
stat307 Hypothesis test for the difference of population proportions  
stat319 Contingency tables: Expected frequencies  
stat320 Chi-square goodness-of-fit test  
stat321 Chi-square test of independence

### Regression and Correlation

stat339 Sketching the least-squares regression line  
stat333 Linear relationship and the sample correlation coefficient  
stat340 Predictions from the least-squares regression line  
stat930 Computing the sample correlation coefficient and the coefficients for the least-squares regression line  
stat931 Explained and unexplained variation and the least-squares regression line

stat325 Confidence intervals and prediction intervals from simple linear regression  
 stat947 Hypothesis tests for the correlation coefficient and the slope of the least-squares regression line

**Out**

stat171 F distribution  
 stat204 Confidence interval for the population standard deviation  
 stat208 Confidence interval for the ratio of population variances  
 stat304 Hypothesis test for the population variance or standard deviation  
 stat308 Hypothesis test for the ratio of population variances  
 stat326 Sign test  
 stat327 Wilcoxon signed-ranks test  
 stat400 Interpreting the regression coefficients  
 stat401 Identifying degrees of freedom  
 stat402 ANOVA table: Problem type 1  
 stat403 ANOVA table: Problem type 2  
 stat404 F test of a multiple regression model  
 stat405 t test of a multiple regression model  
 stat422 ANOVA: Mean squares and the common population variance  
 stat423 ANOVA: Degrees of freedom and the F statistic  
 stat424 ANOVA: Hypothesis tests and the ANOVA table  
 stat430 One-way, repeated-measures ANOVA  
 stat440 Selecting among t tests and ANOVA tests  
 stat442 Interpreting group means from a factorial design  
 stat443 Two-way, independent-samples ANOVA  
 stat500 Trend lines for yearly data  
 stat501 Seasonal indexes: Multiplicative model  
 stat502 Moving averages  
 stat503 Ratio-to-moving-average method  
 stat504 Exponential smoothing  
 stat505 Regression with seasonal indicators  
 stat600 Interpreting a control chart  
 stat601 R charts  
 stat602 x-bar charts  
 stat603 p charts  
 stat604 c charts  
 stat605 Acceptance sampling  
 stat606 Estimating sigma from an R chart

**B.74 Intro. to Statistics****Mathematical Readiness**

arith048 Order of operations with whole numbers  
 arith051 Order of operations with whole numbers and grouping symbols  
 arith220 Decimal place value: Hundreds to ten thousandths  
 arith221 Rounding decimals  
 arith226 Converting between percentages and decimals  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith069 Writing a ratio as a percentage without a calculator  
 arith090 Converting a percentage to a fraction in simplest form  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 stat022 Summation of indexed data  
 alge006 Solving a two-step equation with integers  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution

alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge256 Y-intercept of a line  
 alge257 X- and y-intercepts of a line given the equation in standard form  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge197 Graphing a line given its x- and y-intercepts  
 alge194 Graphing a line given its equation in slope-intercept form  
 alge196 Graphing a line through a given point with a given slope

### Descriptive Statistics

stat904 Interpreting pie charts  
 stat901 Computations from pie charts  
 stat844 Double bar charts  
 stat702 Histograms for grouped data  
 stat703 Frequency polygons for grouped data  
 stat717 Interpreting relative frequency histograms  
 stat718 Cumulative distributions and ogives  
 stat164 Comparing means without calculation  
 stat165 Comparing standard deviations without calculation  
 stat023 Box-and-whisker plots  
 stat831 Interpreting a stem-and-leaf display  
 stat827 Using back-to-back stem-and-leaf displays to compare data sets  
 stat706 Mean, median, and mode: Computations  
 stat902 Rejecting unreasonable claims based on average statistics  
 stat007 Weighted mean: Tabular data  
 stat719 Estimating the mean of grouped data  
 stat009 Percentiles  
 stat021 Population standard deviation  
 stat011 Sample standard deviation  
 stat729 Estimating the standard deviation of grouped data  
 stat730 Chebyshev's theorem and the empirical rule  
 stat798 Mean, median, and mode: Comparisons  
 stat025 Transforming the mean and standard deviation of a data set  
 stat905 Making reasonable inferences based on proportion statistics

### Probability

stat782 Factorial expressions  
 stat788 Combinations  
 stat789 Permutations  
 stat790 Permutations, combinations, and the multiplication principle for counting  
 stat117 Probabilities of draws with replacement  
 stat118 Probabilities of draws without replacement  
 stat119 Venn diagrams: Two events  
 stat100 Venn diagrams: Three events  
 stat101 Venn diagrams: Word problems  
 stat106 Outcomes and event probability  
 stat226 Die rolling  
 stat114 Probability of intersection or union: Word problems  
 stat115 Independent events: Basic  
 stat120 Probability of union: Basic  
 stat104 Mutually exclusive events: Two events  
 stat102 Mutually exclusive events: Three events  
 stat850 Probability of independent events  
 stat105 Independent events: Two events  
 stat103 Independent events: Three events  
 stat113 The curious die

stat020 Calculating relative frequencies in a contingency table  
 stat116 Conditional probability: Basic  
 stat851 Probability of dependent events  
 stat109 Intersection and conditional probability  
 stat107 Conditional probability: Mutually exclusive events  
 stat108 Conditional probability: Independent events  
 stat756 Tree diagrams for conditional probabilities  
 stat110 Law of total probabilities  
 stat111 Bayes' theorem

### Random Variables and Distributions

stat777 Classification of variables and levels of measurement  
 stat142 Discrete versus continuous variables  
 stat151 Discrete probability distribution: Basic  
 stat143 Discrete probability distribution: Word problems  
 stat149 Cumulative distribution function  
 stat150 Expectation and variance of a random variable  
 stat153 Rules for expectation and variance of random variables  
 stat145 Marginal distributions of two discrete random variables  
 stat146 Joint distributions of dependent or independent random variables  
 stat147 Probabilities of two random variables given their joint distribution  
 stat148 Conditional probabilities of two random variables given their joint distribution  
 stat156 Binomial problems: Mean and standard deviation  
 stat174 Binomial problems: Basic  
 stat155 Binomial problems: Advanced  
 stat157 Standard normal probabilities  
 stat760 Standard normal values: Basic  
 stat160 Standard normal values: Advanced  
 stat159 Normal versus standard normal density curves  
 stat161 Normal distribution raw scores  
 stat162 Mean and deviation of a normal distribution  
 stat163 Normal distribution: Word problems  
 stat173 t distribution  
 stat170 Chi-square distribution  
 stat171 F distribution  
 stat187 Normal approximation to binomial  
 stat185 Central limit theorem: Sample mean  
 stat186 Central limit theorem: Sample sum  
 stat188 Central limit theorem: Sample proportion

### Confidence Intervals and Hypothesis Testing

stat200 Selecting a distribution for inferences on the population mean  
 stat201 Confidence interval for the population mean: Use of the standard normal  
 stat202 Confidence interval for the population mean: Use of the t distribution  
 stat203 Confidence interval for a population proportion  
 stat204 Confidence interval for the population standard deviation  
 stat205 Confidence interval for the difference of population means: Use of the standard normal  
 stat206 Confidence interval for the difference of population means: Use of the t distribution  
 stat207 Confidence interval for the difference of population proportions  
 stat208 Confidence interval for the ratio of population variances  
 stat755 Choosing an appropriate sample size  
 stat190 Type I and Type II errors  
 stat192 Type I and Type II errors and power  
 stat194 Effect size, sample size, and power  
 stat300 Determining null and alternative hypotheses  
 stat301 Hypothesis test for the population mean: Z test

stat302 Hypothesis test for the population mean: t test  
stat303 Hypothesis test for a population proportion  
stat304 Hypothesis test for the population variance or standard deviation  
stat305 Hypothesis test for the difference of population means: Z test  
stat309 Hypothesis test for the difference of population means: Paired comparisons  
stat306 Hypothesis test for the difference of population means: t test  
stat307 Hypothesis test for the difference of population proportions  
stat308 Hypothesis test for the ratio of population variances

### Regression and Correlation

stat339 Sketching the least-squares regression line  
stat333 Linear relationship and the sample correlation coefficient  
stat340 Predictions from the least-squares regression line  
stat930 Computing the sample correlation coefficient and the coefficients for the least-squares regression line  
stat931 Explained and unexplained variation and the least-squares regression line  
stat325 Confidence intervals and prediction intervals from simple linear regression  
stat947 Hypothesis tests for the correlation coefficient and the slope of the least-squares regression line  
stat400 Interpreting the regression coefficients  
stat401 Identifying degrees of freedom  
stat402 ANOVA table: Problem type 1  
stat403 ANOVA table: Problem type 2  
stat404 F test of a multiple regression model  
stat405 t test of a multiple regression model

### ANOVA, Chi-square and Nonparametric Tests

stat422 ANOVA: Mean squares and the common population variance  
stat423 ANOVA: Degrees of freedom and the F statistic  
stat424 ANOVA: Hypothesis tests and the ANOVA table  
stat430 One-way, repeated-measures ANOVA  
stat442 Interpreting group means from a factorial design  
stat443 Two-way, independent-samples ANOVA  
stat440 Selecting among t tests and ANOVA tests  
stat319 Contingency tables: Expected frequencies  
stat320 Chi-square goodness-of-fit test  
stat321 Chi-square test of independence  
stat326 Sign test  
stat327 Wilcoxon signed-ranks test

### Quality Control

stat500 Trend lines for yearly data  
stat501 Seasonal indexes: Multiplicative model  
stat502 Moving averages  
stat503 Ratio-to-moving-average method  
stat504 Exponential smoothing  
stat505 Regression with seasonal indicators  
stat600 Interpreting a control chart  
stat601 R charts  
stat602  $\bar{x}$ -bar charts  
stat603 p charts  
stat604 c charts  
stat605 Acceptance sampling  
stat606 Estimating sigma from an R chart



## B.75 Chemistry

### Algebra Readiness

arith231 Integer multiplication and division  
arith067 Simplifying a fraction  
arith212 Equivalent fractions  
arith105 Signed fraction multiplication: Advanced  
arith220 Decimal place value: Hundreds to ten thousandths  
arith221 Rounding decimals  
arith234 Signed decimal addition and subtraction with 3 numbers  
arith030 Finding a percentage of a whole number without a calculator: Basic  
arith047 Evaluating expressions with exponents: Problem type 1  
arith049 Evaluating expressions with exponents: Problem type 2  
arith042 Evaluating an expression with a negative exponent: Positive fraction base  
alge024 Introduction to the product rule of exponents  
alge026 Quotient of expressions involving exponents  
arith602 Estimating a square root  
arith601 Square root of a rational perfect square  
alge080 Simplifying a radical expression with an even exponent  
alge004 Evaluating a quadratic expression: Integers  
alge606 Distributive property: Whole number coefficients  
alge604 Distributive property: Integer coefficients  
alge607 Combining like terms: Integer coefficients  
alge663 Combining like terms: Advanced  
alge160 Algebraic symbol manipulation  
alge006 Solving a two-step equation with integers  
alge200 Solving an equation to find the value of an expression  
alge197 Graphing a line given its x- and y-intercepts  
alge194 Graphing a line given its equation in slope-intercept form  
alge195 Graphing a line given its equation in standard form  
alge196 Graphing a line through a given point with a given slope  
alge637 Determining the slope of a line given its graph  
unit041 Volume of a cube or a rectangular prism  
geom802 Circumference and area of a circle  
unit841 Volume of a sphere  
unit029 Volume of a cylinder

### Measurement

arith082 Multiplication of a decimal by a power of ten  
arith083 Division of a decimal by a power of ten  
scinot101 Converting between decimal numbers and numbers written in scientific notation  
scinot102 Multiplying and dividing numbers written in scientific notation  
scinot103 Calculating positive powers of scientific notation  
scinot007 Finding negative powers of scientific notation  
unit040 Identifying SI units  
unit014 Interconversion of prefixed and base SI units  
unit015 Interconversion of prefixed SI units  
unit016 Interconverting compound SI units  
unit038 Interconverting derived SI units  
unit032 Interconverting temperatures in Celsius and Kelvins  
unit033 Interconverting temperatures in Celsius and Fahrenheit  
unit017 Adding and subtracting simple units  
unit018 Multiplying and dividing simple units  
unit019 Powers and roots of powers of simple units  
unit020 Forming compound units  
unit021 Adding and subtracting compound units  
unit022 Multiplying and dividing compound units

unit023 Powers and roots of compound units  
sigfig001 Counting significant digits  
sigfig002 Rounding to a given significant digit  
sigfig003 Counting significant digits when measurements are added or subtracted  
sigfig004 Counting significant digits when measurements are multiplied or divided  
sigfig005 Adding or subtracting and multiplying or dividing measurements

### Matter and Energy

atom015 Distinguishing elements and compounds  
atom016 Distinguishing compounds and mixtures  
atom034 Distinguishing chemical and physical change  
atom033 Distinguishing solid, liquid and gas phases of a pure substance  
atom001 Names and symbols of important elements  
atom002 Reading a Periodic Table entry  
atom042 Understanding periods and groups of the Periodic Table  
atom003 Organization of the Periodic Table  
atom005 Standard chemical and physical states of the elements  
atom038 Using the Periodic Table to identify similar elements  
atom046 Understanding periodic trends in atomic size  
atom047 Understanding periodic trends in atomic ionizability  
thermo008 Interconverting calories and joules  
thermo011 Calculating specific heat capacity  
thermo009 Using specific heat capacity to find heat  
thermo010 Using specific heat capacity to find temperature change  
atom041 Understanding the organization of the electromagnetic spectrum

### Atoms and Molecules

atom006 Counting protons and electrons in atoms and atomic ions  
atom029 Finding isoprotonic atoms  
atom030 Finding isoelectronic atoms  
atom004 Isotopes  
atom012 Predicting the ions formed by common main-group elements  
atom019 Counting valence electrons in an atomic ion  
atom020 Drawing the Lewis dot diagram of a main group atom or common atomic ion  
atom048 Counting the electron shells in a neutral atom  
atom021 Deducing the allowed quantum numbers of an atomic electron  
atom024 Calculating the capacity of electron subshells  
atom031 Knowing the subshells of an electron shell  
atom025 Interpreting the electron configuration of an atom or atomic ion  
atom026 Interpreting the electron configuration of an atom or atomic ion in noble-gas notation  
atom027 Writing the electron configuration of an atom or atomic ion with s and p electrons only

### Compounds and Reactions

stoich006 Counting the number of atoms in a formula unit  
stoich007 Finding mole ratios from chemical formulae  
stoich008 Finding chemical formulae from a mole ratio  
stoich009 Finding molar mass from chemical formulae  
stoich010 Finding mass percent from chemical formulae  
stoich011 Elemental analysis  
atom045 Understanding the prefixes used in naming binary compounds  
atom014 Naming binary covalent compounds  
atom017 Predicting whether a compound is ionic or molecular

atom007 Predicting the formula of binary ionic compounds  
atom008 Naming binary ionic compounds  
atom028 Deducing the ions in a binary ionic compound from its empirical formula  
atom013 Predicting and naming ionic compounds formed by two elements  
atom036 Identifying common polyatomic ions  
atom011 Predicting the formula of ionic compounds with common polyatomic ions  
atom009 Naming ionic compounds with common polyatomic ions  
atom035 Deducing the ions in a polyatomic ionic compound from its empirical formula  
atom037 Identifying oxoanions  
atom010 Naming ionic compounds with common oxoanions  
rxn002 Writing a chemical equation from a description of the reaction  
rxn001 Identifying combination, decomposition, single and double displacement reactions  
rxn006 Identifying precipitation, combustion and acid-base reactions  
stoich012 Stoichiometric coefficients  
stoich013 Balancing chemical equations with noninterfering coefficients  
stoich014 Balancing chemical equations with interfering coefficients  
stoich002 Using the Avogadro Number  
stoich003 Calculating and using the molar mass of elements  
stoich004 Calculating and using the molar mass of diatomic elements  
stoich005 Calculating and using the molar mass of heteroatomic compounds  
stoich015 Solving for a reactant using a chemical equation  
stoich017 Limiting reactants  
stoich018 Percent yield of chemical reactions  
thermo014 Calculating the heat of reaction from molar reaction enthalpy and the mass of a reactant  
thermo018 Calculating the heat of reaction from bond energies

### Physical Chemistry

gas001 Interconverting pressure and force  
gas002 Measuring pressure in non-SI units  
gas003 Understanding pressure equilibrium and atmospheric pressure  
gas004 Understanding Boyle's Law  
gas005 Solving applications of Boyle's Law  
gas006 Using Charles's Law  
gas007 Using the ideal equation of state  
gas008 Interconverting molar mass and density of ideal gases  
gas009 Calculating mole fraction in a gas mixture  
gas010 Calculating partial pressure in a gas mixture  
gas011 Solving for a gaseous reactant  
thermo017 Using heat of fusion or vaporization to find the heat needed to melt or boil a substance  
thermo019 Relating vapor pressure to vaporization  
soln001 Predicting the products of dissolution  
soln002 Writing net ionic equations  
soln003 Predicting precipitation  
stoich019 Calculating mass concentration  
stoich026 Using mass concentration to find solute mass and solution volume  
stoich027 Solving applied mass concentration problems  
stoich020 Calculating molarity using solute moles  
stoich028 Using molarity to find solute moles and solution volume  
stoich029 Calculating molarity using solute mass  
stoich030 Using molarity to find solute mass and solution volume  
stoich021 Dilution  
stoich022 Calculating mass percent composition  
stoich032 Using mass percent composition to find solution volume  
stoich037 Solving for a reactant in solution  
stoich038 Solving limiting reactant problems in solution  
pchem011 Understanding common types of radioactive decay  
pchem015 Using the half-life of a radioisotope

### Acids and Bases

acid001 Identifying acids and bases by their reaction with water  
acid002 Identifying acids and bases by their chemical formula  
acid003 Naming inorganic acids  
acid004 Deducing the formulae of inorganic acids from their names  
acid005 Naming acid salts  
acid006 Recognizing common acids and bases  
acid007 Understanding the difference between strong and weak acids  
acid008 Identifying Bronsted-Lowry acids and bases  
acid009 Finding the conjugate of an acid or base  
acid010 Predicting the products of the reaction of a strong acid with water  
acid011 Predicting the products of a neutralization reaction  
acid016 Interconverting pH and hydronium ion concentration  
acid017 Using the ion product of water  
acid018 Making qualitative estimates of pH change  
acid019 Calculating the pH of a strong acid solution  
acid021 Diluting a strong acid solution to a given pH  
acid020 Calculating the pH of a strong base solution  
acid022 Preparing a strong base solution with a given pH  
acid023 Determining the volume of base needed to titrate a given mass of acid  
acid024 Determining the molar mass of an acid by titration  
acid025 Standardizing a base solution by titration

### Oxidation and Reduction

redox001 Assigning oxidation numbers  
redox002 Recognizing reduction and oxidation  
redox003 Identifying oxidizing and reducing agents  
redox004 Identifying oxidized and reduced reactants in a metal-nonmetal reaction  
redox005 Identifying oxidized and reduced reactants in a single-displacement reaction  
redox006 Writing a simple half-reaction from its description  
redox007 Writing the half-reactions of a metal-nonmetal reaction  
redox008 Writing the half-reactions of a single-displacement reaction  
redox011 Predicting whether simple electrochemical reactions happen  
redox012 Designing a galvanic cell from a single-displacement redox reaction

### Kinetics and Equilibrium

equi009 Predicting how reaction rate varies with pressure, concentration and temperature  
equi010 Interpreting a reaction energy diagram  
equi011 Relating activation energy to reaction rate  
equi012 Calculating the reaction rate of one reactant from that of another  
equi013 Drawing the reaction energy diagram of a catalyzed reaction  
equi003 Understanding that no reaction goes to 100%  
equi004 Predicting relative forward and reverse rates of reaction in a dynamic equilibrium  
equi005 Using Le Chatelier's Principle to predict the result of changing concentration or volume  
equi006 Using Le Chatelier's Principle to predict the result of changing temperature  
equi007 Writing an equilibrium constant expression  
equi014 Writing an equilibrium constant expression for a heterogeneous equilibrium  
equi008 Using an equilibrium constant to predict the direction of spontaneous reaction

### Organic Chemistry

ochem001 Identifying organic compounds  
ochem003 Interpreting condensed chemical structures  
ochem004 Identifying organic functional groups  
ochem008 Naming normal alkanes  
ochem009 Using family suffixes to name organic compounds

## B.76 Prep. for AP Chemistry

### Math and Algebra

arith231 Integer multiplication and division  
arith067 Simplifying a fraction  
arith212 Equivalent fractions  
arith116 Signed fraction addition or subtraction: Basic  
arith822 Signed fraction multiplication: Basic  
arith814 Signed fraction division  
arith047 Evaluating expressions with exponents: Problem type 1  
arith651 Introduction to inequalities  
arith692 Writing expressions using exponents  
arith233 Introduction to exponents  
arith681 Introduction to order of operations  
arith029 Ordering numbers with positive exponents  
alge790 Evaluating expressions with exponents of zero  
arith729 Evaluating an expression with a negative exponent: Whole number base  
arith042 Evaluating an expression with a negative exponent: Positive fraction base  
arith695 Complex fraction without variables: Problem type 1  
arith016 Square root of a perfect square  
arith764 Introduction to square root multiplication  
arith071 Absolute value of a number  
alge004 Evaluating a quadratic expression: Integers  
alge607 Combining like terms: Integer coefficients  
alge293 Combining like terms in a quadratic expression  
alge604 Distributive property: Integer coefficients  
alge608 Using distribution and combining like terms to simplify: Univariate  
alge024 Introduction to the product rule of exponents  
alge311 Product rule with positive exponents: Univariate  
alge961 Introduction to the product rule with negative exponents  
alge827 Introduction to the quotient rule of exponents  
alge452 Simplifying a ratio of univariate monomials  
alge755 Quotient rule with negative exponents: Problem type 1  
alge305 Introduction to the power of a product rule of exponents  
alge927 Power and quotient rules with positive exponents  
alge791 Rewriting an algebraic expression without a negative exponent  
alge032 Squaring a binomial: Univariate  
alge983 Multiplying binomials with leading coefficients greater than 1  
alge053 Multiplying rational expressions involving multivariate monomials  
alge470 Complex fraction involving univariate monomials  
alge264 Square root of a perfect square monomial  
alge733 Writing a one-step expression for a real-world situation  
alge730 Writing a multi-step equation for a real-world situation  
alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
alge873 Identifying solutions to a linear equation in two variables  
alge010 Additive property of equality with integers  
alge266 Additive property of equality with a negative coefficient  
alge012 Multiplicative property of equality with signed fractions  
alge837 Solving a multi-step equation given in fractional form  
alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
alge160 Algebraic symbol manipulation  
alge014 Solving a word problem with two unknowns using a linear equation  
alge849 Additive property of inequality with integers  
alge856 Solving a two-step linear inequality: Problem type 2  
alge958 Solving a quadratic equation using the square root property: Decimal answers, basic  
alge959 Solving a quadratic equation using the square root property: Decimal answers, advanced

alge963 Applying the quadratic formula: Decimal answers  
 alge214 Discriminant of a quadratic equation  
 alge400 Introduction to solving a radical equation  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge875 Classifying slopes given graphs of lines  
 alge637 Determining the slope of a line given its graph  
 alge685 Finding slope given two points on the line  
 alge196 Graphing a line through a given point with a given slope  
 alge884 Finding x- and y-intercepts given the graph of a line on a grid  
 alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
 alge194 Graphing a line given its equation in slope-intercept form  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge631 Finding the slope of a line given its equation  
 scilog001 Evaluating a logarithmic expression  
 scilog002 Solving an equation of the form  $\log_b a = c$   
 scilog003 Basic properties of logarithms  
 scilog004 Expanding a logarithmic expression: Problem type 1  
 scilog005 Expanding a logarithmic expression: Problem type 2  
 scilog006 Writing an expression as a single logarithm  
 scilog007 Converting between common logarithmic and exponential equations  
 pcalc799 Converting between natural logarithmic and exponential equations  
 pcalc919 Evaluating an exponential function with base e that models a real-world situation  
 pcalc804 Solving a multi-step equation involving natural logarithms  
 pcalc920 Solving an exponential equation by using logarithms: Decimal answers, basic  
 pcalc921 Solving an exponential equation by using natural logarithms: Decimal answers  
 pcalc103 Graphing an exponential function and its asymptote:  $f(x) = a(e)^{x-b} + c$   
 geom001 Finding an angle measure of a triangle given two angles  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom309 Finding an angle measure for a triangle sharing a side with another triangle  
 geom044 Pythagorean Theorem  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc642 Solving a right triangle  
 vector002 Finding the magnitude and direction of a vector given its graph  
 vector005 Finding the components of a vector given its graph  
 vector006 Finding the component of a vector along another vector

### Science Toolbox

arith082 Multiplication of a decimal by a power of ten  
 arith083 Division of a decimal by a power of ten  
 scinot101 Converting between decimal numbers and numbers written in scientific notation  
 scinot102 Multiplying and dividing numbers written in scientific notation  
 scinot103 Calculating positive powers of scientific notation  
 scinot007 Finding negative powers of scientific notation  
 unit043 Knowing the dimension of common simple SI units  
 unit044 Understanding the purpose of SI prefixes  
 unit045 Knowing the value of an SI prefix as a power of 10  
 unit014 Interconversion of prefixed and base SI units  
 unit015 Interconversion of prefixed SI units  
 unit047 Interconverting compound SI units  
 unit038 Interconverting derived SI units  
 unit032 Interconverting temperatures in Celsius and Kelvins  
 unit033 Interconverting temperatures in Celsius and Fahrenheit  
 unit048 Addition and subtraction of measurements  
 unit049 Simplifying unit expressions  
 unit051 Multiplication and division of measurements  
 sigfig001 Counting significant digits

sigfig002 Rounding to a given significant digit  
sigfig003 Counting significant digits when measurements are added or subtracted  
sigfig004 Counting significant digits when measurements are multiplied or divided  
sigfig005 Adding or subtracting and multiplying or dividing measurements  
thermo002 Understanding how electrostatic potential energy scales with charge and separation

### Big Idea 1: Elements and Atoms

atom015 Distinguishing elements and compounds  
atom001 Names and symbols of important elements  
stoich006 Counting the number of atoms in a formula unit  
atom060 Writing a chemical formula given a molecular model  
atom061 Writing a chemical formula given a chemical structure  
stoich002 Using the Avogadro Number  
stoich003 Calculating and using the molar mass of elements  
stoich004 Calculating and using the molar mass of diatomic elements  
stoich005 Calculating and using the molar mass of heterodiatomic compounds  
stoich007 Finding mole ratios from chemical formulae  
stoich008 Finding chemical formulae from a mole ratio  
stoich009 Finding molar mass from chemical formulae  
stoich010 Finding mass percent from chemical formulae  
stoich011 Elemental analysis  
stoich024 Finding a molecular formula from molar mass and elemental analysis  
atom039 Identifying the parts of an atom  
atom004 Isotopes  
atom058 Finding atomic mass from isotope mass and natural abundance  
atom063 Counting the number of protons and electrons in a neutral atom  
atom006 Counting protons and electrons in atoms and atomic ions  
atom029 Finding isoprotonic atoms  
atom030 Finding isoelectronic atoms  
atom048 Counting the electron shells in a neutral atom  
atom031 Knowing the subshells of an electron shell  
atom062 Counting valence electrons in a neutral atom  
atom019 Counting valence electrons in an atomic ion  
atom020 Drawing the Lewis dot diagram of a main group atom or common atomic ion  
atom055 Deducing  $n$  and  $l$  from a subshell label  
atom021 Deducing the allowed quantum numbers of an atomic electron  
atom056 Deciding the relative energy of electron subshells  
atom024 Calculating the capacity of electron subshells  
atom057 Drawing a box diagram of the electron configuration of an atom  
atom077 Interpreting the electron configuration of a neutral atom  
atom073 Interpreting the electron configuration of a neutral atom in noble-gas notation  
atom076 Writing the electron configuration of a neutral atom with  $s$  and  $p$  electrons only  
atom075 Writing the electron configuration of a neutral atom with a filled  $d$  subshell  
atom022 Writing the electron configuration of an atom using the Periodic Table  
atom078 Writing the electron configuration of a first transition series atom  
atom079 Interpreting an outer electron box diagram  
atom080 Drawing the outer electron box diagram of a transition metal cation  
atom067 Understanding the definitions of ionization energy and electron affinity  
atom069 Deducing valence electron configuration from trends in successive ionization energies  
atom025 Interpreting the electron configuration of an atom or atomic ion  
atom026 Interpreting the electron configuration of an atom or atomic ion in noble-gas notation  
atom027 Writing the electron configuration of an atom or atomic ion with  $s$  and  $p$  electrons only  
atom032 Identifying the electron added or removed to form an ion from an  $s$  or  $p$  block atom  
atom059 Identifying the electron added or removed to form an ion  
atom023 Identifying quantum mechanics errors in electron configurations  
atom051 Understanding the meaning of a de Broglie wavelength  
atom052 Interpreting the radial probability distribution of an orbital  
atom053 Interpreting the angular probability distribution of an orbital  
atom054 Recognizing  $s$  and  $p$  orbitals



atom070 Ranking the screening efficacy of atomic orbitals  
atom002 Reading a Periodic Table entry  
atom042 Understanding periods and groups of the Periodic Table  
atom003 Organization of the Periodic Table  
atom005 Standard chemical and physical states of the elements  
atom038 Using the Periodic Table to identify similar elements  
atom065 Identifying s, p, d and f block elements  
atom072 Deducing the block of an element from an electron configuration  
atom066 Identifying elements with a similar valence electron configuration  
atom081 Identifying transition metal cations with a given number of d electrons  
atom082 Deducing the number of d electrons and unpaired spins in a transition metal cation  
atom083 Understanding the exceptional electron configurations in the first transition series  
atom012 Predicting the ions formed by common main-group elements  
atom068 Predicting the relative ionization energy of elements  
atom046 Understanding periodic trends in atomic size  
atom047 Understanding periodic trends in atomic ionizability  
atom071 Understanding periodic trends in effective nuclear charge  
ichem001 Understanding words that describe where transition metals lie in the Periodic Table  
ichem002 Predicting the relative atomic radius of a transition metal atom  
ichem003 Predicting the relative density of a transition metal  
ichem004 Predicting the relative melting point of a transition metal  
ichem005 Predicting the highest common oxidation state of a metal in the first transition series  
atom041 Understanding the organization of the electromagnetic spectrum  
atom040 Interconverting the wavelength and frequency of electromagnetic radiation  
atom043 Interconverting wavelength, frequency and photon energy  
atom044 Calculating the wavelength of a spectral line from an energy diagram  
atom049 Predicting the qualitative features of a line spectrum  
atom050 Calculating the wavelength of a line in the spectrum of hydrogen  
atom034 Distinguishing chemical and physical change  
stoich012 Stoichiometric coefficients  
stoich016 Identifying the limiting reactant in a drawing of a mixture

## Big Idea 2: Properties of Matter

atom016 Distinguishing compounds and mixtures  
atom033 Distinguishing solid, liquid and gas phases of a pure substance  
thermo040 Using a phase diagram to predict phase at a given temperature and pressure  
thermo041 Labeling a typical simple phase diagram  
thermo042 Using a phase diagram to find a phase transition temperature or pressure  
thermo044 Sketching a described thermodynamic change on a phase diagram  
pchem001 Identifying important physical properties of liquids  
pchem002 Understanding consequences of important physical properties of liquids  
thermo019 Relating vapor pressure to vaporization  
thermo046 Identifying phase transitions on a heating curve  
thermo047 Interpreting a heating curve  
thermo045 Drawing a heating curve  
gas001 Interconverting pressure and force  
gas019 Interconverting atmospheres and kilopascals  
gas020 Interconverting atmospheres and torr  
gas003 Understanding pressure equilibrium and atmospheric pressure  
gas004 Understanding Boyle's Law  
gas005 Solving applications of Boyle's Law  
gas006 Using Charles's Law  
gas007 Using the ideal equation of state  
gas008 Interconverting molar mass and density of ideal gases  
gas009 Calculating mole fraction in a gas mixture  
gas010 Calculating partial pressure in a gas mixture  
gas012 Understanding how average molecular kinetic energy scales with temperature  
gas013 Understanding how average molecular speed scales with temperature and molar mass  
gas014 Interpreting a graph of molecular speed distribution

gas018 Using relative effusion rates to find an unknown molar mass  
soln001 Predicting the products of dissolution  
soln020 Understanding how solubility varies with temperature and pressure  
soln011 Applying like dissolves like  
stoich020 Calculating molarity using solute moles  
stoich028 Using molarity to find solute moles and solution volume  
stoich029 Calculating molarity using solute mass  
stoich030 Using molarity to find solute mass and solution volume  
stoich021 Dilution  
soln012 Calculating solubility  
soln019 Using solubility to calculate solute mass or solution volume  
soln010 Using Henry's Law to calculate the solubility of a gas  
stoich019 Calculating mass concentration  
stoich026 Using mass concentration to find solute mass and solution volume  
stoich022 Calculating mass percent composition  
stoich032 Using mass percent composition to find solution volume  
soln006 Calculating molality  
soln008 Calculating mole fraction  
soln005 Predicting relative boiling point elevations and freezing point depressions  
soln021 Using the K<sub>f</sub> and K<sub>b</sub> equations  
soln007 Using osmotic pressure to find molar mass  
soln009 Using Raoult's Law to calculate the vapor pressure of a component  
atom045 Understanding the prefixes used in naming binary compounds  
atom014 Naming binary covalent compounds  
atom017 Predicting whether a compound is ionic or molecular  
atom007 Predicting the formula of binary ionic compounds  
atom008 Naming binary ionic compounds  
atom028 Deducing the ions in a binary ionic compound from its empirical formula  
atom064 Predicting ionic compounds formed by two elements  
atom013 Predicting and naming ionic compounds formed by two elements  
atom036 Identifying common polyatomic ions  
atom011 Predicting the formula of ionic compounds with common polyatomic ions  
atom009 Naming ionic compounds with common polyatomic ions  
atom035 Deducing the ions in a polyatomic ionic compound from its empirical formula  
atom037 Identifying oxoanions  
atom010 Naming ionic compounds with common oxoanions  
ichem027 Predicting the relative stability of ionic crystals from a sketch  
ichem028 Predicting the relative lattice energy of binary ionic compounds  
thermo055 Interpreting a Born-Haber cycle  
ichem026 Drawing the unit cell of a 2D lattice  
ichem029 Counting the atoms in a unit cell  
ichem030 Recognizing and naming close-packed crystal lattices  
ichem031 Recognizing and naming lattices with cubic unit cells  
ichem032 Calculating key distances in the fcc unit cell  
ichem033 Calculating key distances in the bcc unit cell  
ichem034 Finding an atomic radius from an fcc or bcc lattice constant  
ichem035 Finding density from an fcc or bcc lattice constant

### Big Idea 3: Transformations of Matter

stoich013 Balancing chemical equations with noninterfering coefficients  
stoich014 Balancing chemical equations with interfering coefficients  
rxn002 Writing a chemical equation from a description of the reaction  
rxn004 Writing the net equation for a sequence of reactions  
soln002 Writing net ionic equations  
stoich015 Solving for a reactant using a chemical equation  
stoich017 Limiting reactants  
stoich041 Theoretical yield of chemical reactions  
stoich018 Percent yield of chemical reactions  
gas011 Solving for a gaseous reactant

stoich037 Solving for a reactant in solution  
stoich038 Solving limiting reactant problems in solution  
rxn001 Identifying combination, decomposition, single and double displacement reactions  
rxn006 Identifying precipitation, combustion and acid-base reactions  
soln003 Predicting precipitation  
acid002 Identifying acids and bases by their chemical formula  
acid001 Identifying acids and bases by their reaction with water  
acid011 Predicting the products of a neutralization reaction  
acid003 Naming inorganic acids  
acid004 Deducing the formulae of inorganic acids from their names  
acid006 Recognizing common acids and bases  
acid005 Naming acid salts  
acid008 Identifying Bronsted-Lowry acids and bases  
acid009 Finding the conjugate of an acid or base  
acid010 Predicting the products of the reaction of a strong acid with water  
acid032 Predicting the qualitative acid-base properties of salts  
acid044 Predicting the relative acidity of binary acids  
acid045 Understanding the effect of induction on acidity  
acid046 Predicting the qualitative acid-base properties of metal cations  
acid047 Identifying Lewis acids and bases in reactions  
acid049 Predicting the acid-base properties of a binary oxide in water  
ichem006 Predicting the reaction of a transition metal with a strong acid  
redox001 Assigning oxidation numbers  
redox002 Recognizing reduction and oxidation  
redox003 Identifying oxidizing and reducing agents  
redox004 Identifying oxidized and reduced reactants in a metal-nonmetal reaction  
redox005 Identifying oxidized and reduced reactants in a single-displacement reaction  
redox011 Predicting whether simple electrochemical reactions happen  
redox006 Writing a simple half-reaction from its description  
redox007 Writing the half-reactions of a metal-nonmetal reaction  
redox008 Writing the half-reactions of a single-displacement reaction  
redox009 Writing and balancing complex half-reactions in acidic solution  
redox010 Writing and balancing complex half-reactions in basic solution  
redox013 Balancing a complex redox equation in acidic or basic solution  
redox014 Writing the half-reactions of a complex redox reaction in acidic or basic solution  
redox012 Designing a galvanic cell from a single-displacement redox reaction  
redox016 Designing a galvanic cell from two half-reactions  
redox017 Analyzing a galvanic cell  
redox018 Picking a reduction or oxidation that will make a galvanic cell work  
redox019 Ranking the strength of oxidizing and reducing agents using standard reduction potentials  
redox020 Calculating standard reaction free energy from standard reduction potentials  
redox026 Recognizing consistency among equilibrium constant, free energy, and cell potential  
redox021 Using the Nernst equation to calculate nonstandard cell voltage  
redox022 Using the relationship between charge, current and time  
redox023 Using the Faraday constant  
redox024 Analyzing the electrolysis of molten salt  
redox025 Calculating the mass of an electrolysis product from the applied current

#### Big Idea 4: Chemical Kinetics

equi012 Calculating the reaction rate of one reactant from that of another  
equi032 Calculating average and instantaneous reaction rate from a graph of concentration versus time  
equi009 Predicting how reaction rate varies with pressure, concentration and temperature  
equi019 Using a rate law  
equi020 Using reactant reaction order to predict changes in initial rate  
equi021 Deducing a rate law from initial reaction rate data  
equi029 Deducing a rate law from the change in concentration over time  
equi023 Calculating the change in concentration after a whole number of half-lives of a first-order reaction  
equi030 Finding half life and rate constant from a graph of concentration versus time  
equi022 Using an integrated rate law for a first-order reaction

equi027 Using a second-order integrated rate law to find concentration change  
equi028 Using first- and second-order integrated rate laws  
gas017 Understanding how molecular collision rate scales with temperature and volume  
equi033 Identifying the molecularity of an elementary reaction  
equi010 Interpreting a reaction energy diagram  
equi011 Relating activation energy to reaction rate  
equi024 Understanding the qualitative predictions of the Arrhenius equation  
equi025 Using the Arrhenius equation to calculate  $k$  at one temperature from  $k$  at another  
equi026 Using the Arrhenius equation to calculate  $E_a$  from  $k$  versus  $T$  data  
equi034 Identifying intermediates in a reaction mechanism  
equi035 Writing a plausible missing step for a simple reaction mechanism  
equi040 Deducing information about reaction mechanisms from a reaction energy diagram  
equi036 Writing the rate law of an elementary reaction  
equi037 Writing the rate law implied by a simple mechanism with an initial slow step  
equi038 Expressing the concentration of an intermediate in terms of the concentration of reactants  
equi039 Writing the rate law implied by a simple mechanism  
equi013 Drawing the reaction energy diagram of a catalyzed reaction

### Big Idea 5: Thermodynamics

thermo001 Understanding how kinetic energy scales with mass and speed  
thermo051 Calculating kinetic energy  
gas015 Predicting how molecular speed distribution changes with temperature and molar mass  
gas016 Calculating average molecular speed  
thermo003 Using conservation of energy to predict the qualitative exchange of kinetic and potential energy  
thermo005 Calculating pressure-volume work  
thermo006 Understanding the definitions of heat and work  
thermo007 Understanding the definition of enthalpy  
thermo008 Interconverting calories and joules  
thermo011 Calculating specific heat capacity  
thermo009 Using specific heat capacity to find heat  
thermo010 Using specific heat capacity to find temperature change  
thermo013 Calculating molar heat capacity  
thermo017 Using heat of fusion or vaporization to find the heat needed to melt or boil a substance  
thermo052 Understanding the connection between vapor pressure, boiling point, and enthalpy of vaporization  
thermo053 Calculating vapor pressure from boiling point and enthalpy of vaporization  
thermo054 Calculating enthalpy of vaporization from vapor pressure  
thermo020 Using the general properties of reaction enthalpy  
thermo014 Calculating the heat of reaction from molar reaction enthalpy and the mass of a reactant  
thermo021 Using Hess's Law to calculate net reaction enthalpy  
thermo022 Writing a standard formation reaction  
thermo023 Calculating a molar heat of reaction from formation enthalpies  
thermo043 Calculating the heat of reaction from bond energies and Lewis structures  
thermo018 Calculating the heat of reaction from bond energies  
soln013 Understanding conceptual components of the enthalpy of solution  
thermo024 Calculating entropy change from reversible heat flow  
thermo026 Calculating absolute entropy using the Boltzmann hypothesis  
thermo027 Calculating entropy change using the Boltzmann hypothesis  
thermo028 Predicting qualitatively how entropy changes with temperature and volume  
thermo029 Predicting qualitatively how entropy changes with mixing and separation  
thermo030 Qualitatively predicting reaction entropy  
thermo031 Calculating reaction entropy using the standard molar entropies of reactants  
thermo032 Using the general properties of Gibbs free energy  
thermo033 Calculating  $dG$  from  $dH$  and  $dS$   
thermo034 Using the conditions of spontaneity to deduce the signs of  $\Delta H$  and  $\Delta S$   
thermo035 Calculating standard reaction free energy from standard free energies of formation  
thermo037 Estimating a phase transition temperature from standard thermodynamic data

### Big Idea 6: Chemical Equilibrium

equi003 Understanding that no reaction goes to 100%  
equi004 Predicting relative forward and reverse rates of reaction in a dynamic equilibrium  
equi041 Writing a concentration equilibrium constant expression  
equi042 Writing a pressure equilibrium constant expression  
equi046 Calculating an equilibrium constant from an equilibrium composition  
equi045 Writing the concentration equilibrium expression for a heterogeneous equilibrium  
equi044 Writing the pressure equilibrium expression for a heterogeneous equilibrium  
equi043 Calculating an equilibrium constant from a heterogeneous equilibrium composition  
equi008 Using an equilibrium constant to predict the direction of spontaneous reaction  
equi015 Using the general properties of equilibrium constants  
equi016 Setting up a reaction table  
equi017 Calculating equilibrium composition from an equilibrium constant  
equi005 Using Le Chatelier's Principle to predict the result of changing concentration or volume  
equi006 Using Le Chatelier's Principle to predict the result of changing temperature  
acid007 Understanding the difference between strong and weak acids  
acid035 Identifying the major species in weak acid or weak base equilibria  
acid026 Writing an acid dissociation constant expression  
acid013 Interconverting hydronium and hydroxide concentration at 25°C  
acid016 Interconverting pH and hydronium ion concentration  
acid012 Interconverting pH and pOH at 25°C  
acid018 Making qualitative estimates of pH change  
acid019 Calculating the pH of a strong acid solution  
acid020 Calculating the pH of a strong base solution  
acid021 Diluting a strong acid solution to a given pH  
acid022 Preparing a strong base solution with a given pH  
acid027 Calculating the  $K_a$  of a weak acid from pH  
acid028 Calculating the pH of a weak acid solution  
acid029 Writing a base protonation constant expression  
acid030 Calculating the pH of a weak base solution  
acid031 Deriving  $K_b$  from  $K_a$   
acid042 Interconverting  $K_a$  and  $pK_a$   
acid048 Calculating the pH of a salt solution  
acid036 Setting up a reaction table for a pH calculation with a common ion  
acid037 Calculating the pH of a buffer  
acid038 Calculating the composition of a buffer of a given pH  
acid023 Determining the volume of base needed to titrate a given mass of acid  
acid024 Determining the molar mass of an acid by titration  
acid025 Standardizing a base solution by titration  
acid040 Calculating the pH of a weak acid titrated with a strong base  
acid041 Calculating the pH of a weak base titrated with a strong acid  
acid043 Calculating the pH at equivalence of a titration  
soln014 Writing a solubility product ( $K_{sp}$ ) expression  
soln015 Using  $K_{sp}$  to calculate the solubility of a compound  
soln016 Using the solubility of a compound to calculate  $K_{sp}$   
soln017 Calculating the solubility of an ionic compound when a common ion is present  
soln018 Understanding the effect of pH on the solubility of ionic compounds  
thermo038 Calculating reaction free energy under nonstandard conditions  
thermo039 Using reaction free energy to predict equilibrium composition

### Advanced Material

nchem001 Interpreting the symbol for a nuclide  
nchem002 Writing the symbols in a nuclear chemical equation  
nchem003 Balancing a nuclear chemical equation  
nchem006 Writing the equation for a typical radioactive decay  
nchem008 Calculating the energy change in a nuclear reaction from the mass change  
nchem004 Knowing the properties of the common types of nuclear radiation  
nchem005 Understanding the common modes of radioactive decay  
nchem009 Understanding radioactive half life  
nchem010 Interconverting amount of radioactive decay and half life

nchem011 Calculating radioactive activity from half life  
nchem012 Using isotope ratios to radiodate  
nchem013 Using activity to radiodate  
ichem008 Writing the formula of a metal complex from its description  
ichem009 Recognizing typical metal ligands  
ichem010 Determining the oxidation state of the metal in a complex ion  
ichem011 Naming complex cations with one type of ligand  
ichem012 Naming complex anions with one type of ligand  
ichem013 Naming complex ions  
ichem014 Determining the oxidation state of the metal in a coordination compound  
ichem015 Naming coordination compounds  
ichem016 Determining the coordination number of a metal in a complex  
ichem017 Understanding the connection between geometry and coordination number of a metal complex  
ichem018 Distinguishing isomers and alternate views of a metal complex  
ichem019 Drawing an isomer of a metal complex  
ichem020 Drawing cis and trans isomers of a metal complex  
ichem023 Adding electrons to a crystal field theory energy level diagram  
ichem024 Predicting color and magnetic properties from a crystal field theory energy level diagram  
ichem025 Drawing a crystal field theory energy level diagram  
ochem001 Identifying organic compounds  
ochem003 Interpreting condensed chemical structures  
ochem004 Identifying organic functional groups  
ochem005 Identifying the main chain of branched alkanes  
ochem006 Numbering the main chain of branched alkanes  
ochem007 Interpreting condensed chemical structures with benzene rings  
ochem008 Naming normal alkanes  
ochem009 Using family suffixes to name organic compounds  
ochem010 Naming the parent hydrocarbon of branched alkanes  
ochem011 Naming alkyl side chains  
ochem012 Naming branched alkanes  
ochem013 Using multiplying affixes in the names of branched alkanes  
ochem016 Naming unbranched alkenes and alkynes  
ochem017 Naming alkenes and alkynes  
ochem018 Naming alkyl halides  
ochem019 Naming alcohols  
ochem020 Naming aldehydes and acids  
ochem021 Naming benzene derivatives

## B.77 AP Chemistry

### Math and Algebra

arith231 Integer multiplication and division  
arith067 Simplifying a fraction  
arith212 Equivalent fractions  
arith116 Signed fraction addition or subtraction: Basic  
arith822 Signed fraction multiplication: Basic  
arith814 Signed fraction division  
arith047 Evaluating expressions with exponents: Problem type 1  
arith651 Introduction to inequalities  
arith692 Writing expressions using exponents  
arith233 Introduction to exponents  
arith681 Introduction to order of operations  
arith029 Ordering numbers with positive exponents  
alge790 Evaluating expressions with exponents of zero  
arith729 Evaluating an expression with a negative exponent: Whole number base  
arith042 Evaluating an expression with a negative exponent: Positive fraction base  
arith695 Complex fraction without variables: Problem type 1

arith016 Square root of a perfect square  
 arith764 Introduction to square root multiplication  
 arith071 Absolute value of a number  
 alge004 Evaluating a quadratic expression: Integers  
 alge607 Combining like terms: Integer coefficients  
 alge293 Combining like terms in a quadratic expression  
 alge604 Distributive property: Integer coefficients  
 alge608 Using distribution and combining like terms to simplify: Univariate  
 alge024 Introduction to the product rule of exponents  
 alge311 Product rule with positive exponents: Univariate  
 alge961 Introduction to the product rule with negative exponents  
 alge827 Introduction to the quotient rule of exponents  
 alge452 Simplifying a ratio of univariate monomials  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge305 Introduction to the power of a product rule of exponents  
 alge927 Power and quotient rules with positive exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge032 Squaring a binomial: Univariate  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge470 Complex fraction involving univariate monomials  
 alge264 Square root of a perfect square monomial  
 alge733 Writing a one-step expression for a real-world situation  
 alge730 Writing a multi-step equation for a real-world situation  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge873 Identifying solutions to a linear equation in two variables  
 alge010 Additive property of equality with integers  
 alge266 Additive property of equality with a negative coefficient  
 alge012 Multiplicative property of equality with signed fractions  
 alge837 Solving a multi-step equation given in fractional form  
 alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
 alge160 Algebraic symbol manipulation  
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 alge958 Solving a quadratic equation using the square root property: Decimal answers, basic  
 alge959 Solving a quadratic equation using the square root property: Decimal answers, advanced  
 alge963 Applying the quadratic formula: Decimal answers  
 alge214 Discriminant of a quadratic equation  
 alge400 Introduction to solving a radical equation  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge875 Classifying slopes given graphs of lines  
 alge637 Determining the slope of a line given its graph  
 alge685 Finding slope given two points on the line  
 alge196 Graphing a line through a given point with a given slope  
 alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
 alge210 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Advanced  
 alge194 Graphing a line given its equation in slope-intercept form  
 alge070 Writing an equation of a line given the  $y$ -intercept and another point  
 alge631 Finding the slope of a line given its equation  
 scilog001 Evaluating a logarithmic expression  
 scilog002 Solving an equation of the form  $\log_b a = c$   
 scilog003 Basic properties of logarithms  
 scilog004 Expanding a logarithmic expression: Problem type 1  
 scilog005 Expanding a logarithmic expression: Problem type 2  
 scilog006 Writing an expression as a single logarithm  
 scilog007 Converting between common logarithmic and exponential equations  
 pcalc799 Converting between natural logarithmic and exponential equations



pcalc919 Evaluating an exponential function with base  $e$  that models a real-world situation  
pcalc804 Solving a multi-step equation involving natural logarithms  
pcalc920 Solving an exponential equation by using logarithms: Decimal answers, basic  
pcalc921 Solving an exponential equation by using natural logarithms: Decimal answers  
pcalc103 Graphing an exponential function and its asymptote:  $f(x) = a(e)^{x-b} + c$   
geom001 Finding an angle measure of a triangle given two angles  
geom908 Finding an angle measure for a triangle with an extended side  
geom309 Finding an angle measure for a triangle sharing a side with another triangle  
geom044 Pythagorean Theorem  
pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
pcalc642 Solving a right triangle  
vector002 Finding the magnitude and direction of a vector given its graph  
vector005 Finding the components of a vector given its graph  
vector006 Finding the component of a vector along another vector

### Science Toolbox

arith082 Multiplication of a decimal by a power of ten  
arith083 Division of a decimal by a power of ten  
scinot101 Converting between decimal numbers and numbers written in scientific notation  
scinot102 Multiplying and dividing numbers written in scientific notation  
scinot103 Calculating positive powers of scientific notation  
scinot007 Finding negative powers of scientific notation  
unit043 Knowing the dimension of common simple SI units  
unit044 Understanding the purpose of SI prefixes  
unit045 Knowing the value of an SI prefix as a power of 10  
unit014 Interconversion of prefixed and base SI units  
unit015 Interconversion of prefixed SI units  
unit047 Interconverting compound SI units  
unit038 Interconverting derived SI units  
unit032 Interconverting temperatures in Celsius and Kelvins  
unit033 Interconverting temperatures in Celsius and Fahrenheit  
unit048 Addition and subtraction of measurements  
unit049 Simplifying unit expressions  
unit051 Multiplication and division of measurements  
sigfig001 Counting significant digits  
sigfig002 Rounding to a given significant digit  
sigfig003 Counting significant digits when measurements are added or subtracted  
sigfig004 Counting significant digits when measurements are multiplied or divided  
sigfig005 Adding or subtracting and multiplying or dividing measurements  
thermo002 Understanding how electrostatic potential energy scales with charge and separation

### Big Idea 1: Elements and Atoms

atom015 Distinguishing elements and compounds  
atom001 Names and symbols of important elements  
stoich006 Counting the number of atoms in a formula unit  
atom060 Writing a chemical formula given a molecular model  
atom061 Writing a chemical formula given a chemical structure  
stoich002 Using the Avogadro Number  
stoich003 Calculating and using the molar mass of elements  
stoich004 Calculating and using the molar mass of diatomic elements  
stoich005 Calculating and using the molar mass of heterodiatomc compounds  
stoich007 Finding mole ratios from chemical formulae  
stoich008 Finding chemical formulae from a mole ratio

stoich009 Finding molar mass from chemical formulae  
stoich010 Finding mass percent from chemical formulae  
stoich011 Elemental analysis  
stoich024 Finding a molecular formula from molar mass and elemental analysis  
atom039 Identifying the parts of an atom  
atom004 Isotopes  
atom058 Finding atomic mass from isotope mass and natural abundance  
atom063 Counting the number of protons and electrons in a neutral atom  
atom006 Counting protons and electrons in atoms and atomic ions  
atom029 Finding isotopic atoms  
atom030 Finding isoelectronic atoms  
atom048 Counting the electron shells in a neutral atom  
atom031 Knowing the subshells of an electron shell  
atom062 Counting valence electrons in a neutral atom  
atom019 Counting valence electrons in an atomic ion  
atom020 Drawing the Lewis dot diagram of a main group atom or common atomic ion  
atom055 Deducing  $n$  and  $l$  from a subshell label  
atom021 Deducing the allowed quantum numbers of an atomic electron  
atom056 Deciding the relative energy of electron subshells  
atom024 Calculating the capacity of electron subshells  
atom057 Drawing a box diagram of the electron configuration of an atom  
atom077 Interpreting the electron configuration of a neutral atom  
atom073 Interpreting the electron configuration of a neutral atom in noble-gas notation  
atom076 Writing the electron configuration of a neutral atom with  $s$  and  $p$  electrons only  
atom075 Writing the electron configuration of a neutral atom with a filled  $d$  subshell  
atom022 Writing the electron configuration of an atom using the Periodic Table  
atom078 Writing the electron configuration of a first transition series atom  
atom079 Interpreting an outer electron box diagram  
atom080 Drawing the outer electron box diagram of a transition metal cation  
atom067 Understanding the definitions of ionization energy and electron affinity  
atom069 Deducing valence electron configuration from trends in successive ionization energies  
atom025 Interpreting the electron configuration of an atom or atomic ion  
atom026 Interpreting the electron configuration of an atom or atomic ion in noble-gas notation  
atom027 Writing the electron configuration of an atom or atomic ion with  $s$  and  $p$  electrons only  
atom032 Identifying the electron added or removed to form an ion from an  $s$  or  $p$  block atom  
atom059 Identifying the electron added or removed to form an ion  
atom023 Identifying quantum mechanics errors in electron configurations  
atom051 Understanding the meaning of a de Broglie wavelength  
atom052 Interpreting the radial probability distribution of an orbital  
atom053 Interpreting the angular probability distribution of an orbital  
atom054 Recognizing  $s$  and  $p$  orbitals  
atom070 Ranking the screening efficacy of atomic orbitals  
atom002 Reading a Periodic Table entry  
atom042 Understanding periods and groups of the Periodic Table  
atom003 Organization of the Periodic Table  
atom005 Standard chemical and physical states of the elements  
atom038 Using the Periodic Table to identify similar elements  
atom065 Identifying  $s$ ,  $p$ ,  $d$  and  $f$  block elements  
atom072 Deducing the block of an element from an electron configuration  
atom066 Identifying elements with a similar valence electron configuration  
atom081 Identifying transition metal cations with a given number of  $d$  electrons  
atom082 Deducing the number of  $d$  electrons and unpaired spins in a transition metal cation  
atom083 Understanding the exceptional electron configurations in the first transition series  
atom012 Predicting the ions formed by common main-group elements  
atom068 Predicting the relative ionization energy of elements  
atom046 Understanding periodic trends in atomic size  
atom047 Understanding periodic trends in atomic ionizability  
atom071 Understanding periodic trends in effective nuclear charge  
ichem001 Understanding words that describe where transition metals lie in the Periodic Table  
ichem002 Predicting the relative atomic radius of a transition metal atom  
ichem003 Predicting the relative density of a transition metal  
ichem004 Predicting the relative melting point of a transition metal

ichem005 Predicting the highest common oxidation state of a metal in the first transition series  
atom041 Understanding the organization of the electromagnetic spectrum  
atom040 Interconverting the wavelength and frequency of electromagnetic radiation  
atom043 Interconverting wavelength, frequency and photon energy  
atom044 Calculating the wavelength of a spectral line from an energy diagram  
atom049 Predicting the qualitative features of a line spectrum  
atom050 Calculating the wavelength of a line in the spectrum of hydrogen  
atom034 Distinguishing chemical and physical change  
stoich012 Stoichiometric coefficients  
stoich016 Identifying the limiting reactant in a drawing of a mixture

### Big Idea 2: Properties of Matter

atom016 Distinguishing compounds and mixtures  
atom033 Distinguishing solid, liquid and gas phases of a pure substance  
thermo040 Using a phase diagram to predict phase at a given temperature and pressure  
thermo041 Labeling a typical simple phase diagram  
thermo042 Using a phase diagram to find a phase transition temperature or pressure  
thermo044 Sketching a described thermodynamic change on a phase diagram  
pchem001 Identifying important physical properties of liquids  
pchem002 Understanding consequences of important physical properties of liquids  
thermo019 Relating vapor pressure to vaporization  
thermo046 Identifying phase transitions on a heating curve  
thermo047 Interpreting a heating curve  
thermo045 Drawing a heating curve  
gas001 Interconverting pressure and force  
gas019 Interconverting atmospheres and kilopascals  
gas020 Interconverting atmospheres and torr  
gas003 Understanding pressure equilibrium and atmospheric pressure  
gas004 Understanding Boyle's Law  
gas005 Solving applications of Boyle's Law  
gas006 Using Charles's Law  
gas007 Using the ideal equation of state  
gas008 Interconverting molar mass and density of ideal gases  
gas009 Calculating mole fraction in a gas mixture  
gas010 Calculating partial pressure in a gas mixture  
gas012 Understanding how average molecular kinetic energy scales with temperature  
gas013 Understanding how average molecular speed scales with temperature and molar mass  
gas014 Interpreting a graph of molecular speed distribution  
gas018 Using relative effusion rates to find an unknown molar mass  
soln001 Predicting the products of dissolution  
soln020 Understanding how solubility varies with temperature and pressure  
soln011 Applying like dissolves like  
stoich020 Calculating molarity using solute moles  
stoich028 Using molarity to find solute moles and solution volume  
stoich029 Calculating molarity using solute mass  
stoich030 Using molarity to find solute mass and solution volume  
stoich021 Dilution  
soln012 Calculating solubility  
soln019 Using solubility to calculate solute mass or solution volume  
soln010 Using Henry's Law to calculate the solubility of a gas  
stoich019 Calculating mass concentration  
stoich026 Using mass concentration to find solute mass and solution volume  
stoich022 Calculating mass percent composition  
stoich032 Using mass percent composition to find solution volume  
soln006 Calculating molality  
soln008 Calculating mole fraction  
soln005 Predicting relative boiling point elevations and freezing point depressions  
soln021 Using the  $K_f$  and  $K_b$  equations  
soln007 Using osmotic pressure to find molar mass

soln009 Using Raoult's Law to calculate the vapor pressure of a component  
atom045 Understanding the prefixes used in naming binary compounds  
atom014 Naming binary covalent compounds  
atom017 Predicting whether a compound is ionic or molecular  
atom007 Predicting the formula of binary ionic compounds  
atom008 Naming binary ionic compounds  
atom028 Deducing the ions in a binary ionic compound from its empirical formula  
atom064 Predicting ionic compounds formed by two elements  
atom013 Predicting and naming ionic compounds formed by two elements  
atom036 Identifying common polyatomic ions  
atom011 Predicting the formula of ionic compounds with common polyatomic ions  
atom009 Naming ionic compounds with common polyatomic ions  
atom035 Deducing the ions in a polyatomic ionic compound from its empirical formula  
atom037 Identifying oxoanions  
atom010 Naming ionic compounds with common oxoanions  
ichem027 Predicting the relative stability of ionic crystals from a sketch  
ichem028 Predicting the relative lattice energy of binary ionic compounds  
thermo055 Interpreting a Born-Haber cycle  
ichem026 Drawing the unit cell of a 2D lattice  
ichem029 Counting the atoms in a unit cell  
ichem030 Recognizing and naming close-packed crystal lattices  
ichem031 Recognizing and naming lattices with cubic unit cells  
ichem032 Calculating key distances in the fcc unit cell  
ichem033 Calculating key distances in the bcc unit cell  
ichem034 Finding an atomic radius from an fcc or bcc lattice constant  
ichem035 Finding density from an fcc or bcc lattice constant

### Big Idea 3: Transformations of Matter

stoich013 Balancing chemical equations with noninterfering coefficients  
stoich014 Balancing chemical equations with interfering coefficients  
rxn002 Writing a chemical equation from a description of the reaction  
rxn004 Writing the net equation for a sequence of reactions  
soln002 Writing net ionic equations  
stoich015 Solving for a reactant using a chemical equation  
stoich017 Limiting reactants  
stoich041 Theoretical yield of chemical reactions  
stoich018 Percent yield of chemical reactions  
gas011 Solving for a gaseous reactant  
stoich037 Solving for a reactant in solution  
stoich038 Solving limiting reactant problems in solution  
rxn001 Identifying combination, decomposition, single and double displacement reactions  
rxn006 Identifying precipitation, combustion and acid-base reactions  
soln003 Predicting precipitation  
acid002 Identifying acids and bases by their chemical formula  
acid001 Identifying acids and bases by their reaction with water  
acid011 Predicting the products of a neutralization reaction  
acid003 Naming inorganic acids  
acid004 Deducing the formulae of inorganic acids from their names  
acid006 Recognizing common acids and bases  
acid005 Naming acid salts  
acid008 Identifying Bronsted-Lowry acids and bases  
acid009 Finding the conjugate of an acid or base  
acid010 Predicting the products of the reaction of a strong acid with water  
acid032 Predicting the qualitative acid-base properties of salts  
acid044 Predicting the relative acidity of binary acids  
acid045 Understanding the effect of induction on acidity  
acid046 Predicting the qualitative acid-base properties of metal cations  
acid047 Identifying Lewis acids and bases in reactions  
acid049 Predicting the acid-base properties of a binary oxide in water

ichem006 Predicting the reaction of a transition metal with a strong acid  
redox001 Assigning oxidation numbers  
redox002 Recognizing reduction and oxidation  
redox003 Identifying oxidizing and reducing agents  
redox004 Identifying oxidized and reduced reactants in a metal-nonmetal reaction  
redox005 Identifying oxidized and reduced reactants in a single-displacement reaction  
redox011 Predicting whether simple electrochemical reactions happen  
redox006 Writing a simple half-reaction from its description  
redox007 Writing the half-reactions of a metal-nonmetal reaction  
redox008 Writing the half-reactions of a single-displacement reaction  
redox009 Writing and balancing complex half-reactions in acidic solution  
redox010 Writing and balancing complex half-reactions in basic solution  
redox013 Balancing a complex redox equation in acidic or basic solution  
redox014 Writing the half-reactions of a complex redox reaction in acidic or basic solution  
redox012 Designing a galvanic cell from a single-displacement redox reaction  
redox016 Designing a galvanic cell from two half-reactions  
redox017 Analyzing a galvanic cell  
redox018 Picking a reduction or oxidation that will make a galvanic cell work  
redox019 Ranking the strength of oxidizing and reducing agents using standard reduction potentials  
redox020 Calculating standard reaction free energy from standard reduction potentials  
redox026 Recognizing consistency among equilibrium constant, free energy, and cell potential  
redox021 Using the Nernst equation to calculate nonstandard cell voltage  
redox022 Using the relationship between charge, current and time  
redox023 Using the Faraday constant  
redox024 Analyzing the electrolysis of molten salt  
redox025 Calculating the mass of an electrolysis product from the applied current

#### Big Idea 4: Chemical Kinetics

equi012 Calculating the reaction rate of one reactant from that of another  
equi032 Calculating average and instantaneous reaction rate from a graph of concentration versus time  
equi009 Predicting how reaction rate varies with pressure, concentration and temperature  
equi019 Using a rate law  
equi020 Using reactant reaction order to predict changes in initial rate  
equi021 Deducing a rate law from initial reaction rate data  
equi029 Deducing a rate law from the change in concentration over time  
equi023 Calculating the change in concentration after a whole number of half-lives of a first-order reaction  
equi030 Finding half life and rate constant from a graph of concentration versus time  
equi022 Using an integrated rate law for a first-order reaction  
equi027 Using a second-order integrated rate law to find concentration change  
equi028 Using first- and second-order integrated rate laws  
gas017 Understanding how molecular collision rate scales with temperature and volume  
equi033 Identifying the molecularity of an elementary reaction  
equi010 Interpreting a reaction energy diagram  
equi011 Relating activation energy to reaction rate  
equi024 Understanding the qualitative predictions of the Arrhenius equation  
equi025 Using the Arrhenius equation to calculate  $k$  at one temperature from  $k$  at another  
equi026 Using the Arrhenius equation to calculate  $E_a$  from  $k$  versus  $T$  data  
equi034 Identifying intermediates in a reaction mechanism  
equi035 Writing a plausible missing step for a simple reaction mechanism  
equi040 Deducing information about reaction mechanisms from a reaction energy diagram  
equi036 Writing the rate law of an elementary reaction  
equi037 Writing the rate law implied by a simple mechanism with an initial slow step  
equi038 Expressing the concentration of an intermediate in terms of the concentration of reactants  
equi039 Writing the rate law implied by a simple mechanism  
equi013 Drawing the reaction energy diagram of a catalyzed reaction

#### Big Idea 5: Thermodynamics

thermo001 Understanding how kinetic energy scales with mass and speed  
thermo051 Calculating kinetic energy  
gas015 Predicting how molecular speed distribution changes with temperature and molar mass  
gas016 Calculating average molecular speed  
thermo003 Using conservation of energy to predict the qualitative exchange of kinetic and potential energy  
thermo005 Calculating pressure-volume work  
thermo006 Understanding the definitions of heat and work  
thermo007 Understanding the definition of enthalpy  
thermo008 Interconverting calories and joules  
thermo011 Calculating specific heat capacity  
thermo009 Using specific heat capacity to find heat  
thermo010 Using specific heat capacity to find temperature change  
thermo013 Calculating molar heat capacity  
thermo017 Using heat of fusion or vaporization to find the heat needed to melt or boil a substance  
thermo052 Understanding the connection between vapor pressure, boiling point, and enthalpy of vaporization  
thermo053 Calculating vapor pressure from boiling point and enthalpy of vaporization  
thermo054 Calculating enthalpy of vaporization from vapor pressure  
thermo020 Using the general properties of reaction enthalpy  
thermo014 Calculating the heat of reaction from molar reaction enthalpy and the mass of a reactant  
thermo021 Using Hess's Law to calculate net reaction enthalpy  
thermo022 Writing a standard formation reaction  
thermo023 Calculating a molar heat of reaction from formation enthalpies  
thermo043 Calculating the heat of reaction from bond energies and Lewis structures  
thermo018 Calculating the heat of reaction from bond energies  
soln013 Understanding conceptual components of the enthalpy of solution  
thermo024 Calculating entropy change from reversible heat flow  
thermo026 Calculating absolute entropy using the Boltzmann hypothesis  
thermo027 Calculating entropy change using the Boltzmann hypothesis  
thermo028 Predicting qualitatively how entropy changes with temperature and volume  
thermo029 Predicting qualitatively how entropy changes with mixing and separation  
thermo030 Qualitatively predicting reaction entropy  
thermo031 Calculating reaction entropy using the standard molar entropies of reactants  
thermo032 Using the general properties of Gibbs free energy  
thermo033 Calculating  $dG$  from  $dH$  and  $dS$   
thermo034 Using the conditions of spontaneity to deduce the signs of  $\Delta H$  and  $\Delta S$   
thermo035 Calculating standard reaction free energy from standard free energies of formation  
thermo037 Estimating a phase transition temperature from standard thermodynamic data

### Big Idea 6: Chemical Equilibrium

equi003 Understanding that no reaction goes to 100%  
equi004 Predicting relative forward and reverse rates of reaction in a dynamic equilibrium  
equi041 Writing a concentration equilibrium constant expression  
equi042 Writing a pressure equilibrium constant expression  
equi046 Calculating an equilibrium constant from an equilibrium composition  
equi045 Writing the concentration equilibrium expression for a heterogeneous equilibrium  
equi044 Writing the pressure equilibrium expression for a heterogeneous equilibrium  
equi043 Calculating an equilibrium constant from a heterogeneous equilibrium composition  
equi008 Using an equilibrium constant to predict the direction of spontaneous reaction  
equi015 Using the general properties of equilibrium constants  
equi016 Setting up a reaction table  
equi017 Calculating equilibrium composition from an equilibrium constant  
equi005 Using Le Chatelier's Principle to predict the result of changing concentration or volume  
equi006 Using Le Chatelier's Principle to predict the result of changing temperature  
acid007 Understanding the difference between strong and weak acids  
acid035 Identifying the major species in weak acid or weak base equilibria  
acid026 Writing an acid dissociation constant expression  
acid013 Interconverting hydronium and hydroxide concentration at 25°C  
acid016 Interconverting pH and hydronium ion concentration  
acid012 Interconverting pH and pOH at 25°C

acid018 Making qualitative estimates of pH change  
acid019 Calculating the pH of a strong acid solution  
acid020 Calculating the pH of a strong base solution  
acid021 Diluting a strong acid solution to a given pH  
acid022 Preparing a strong base solution with a given pH  
acid027 Calculating the  $K_a$  of a weak acid from pH  
acid028 Calculating the pH of a weak acid solution  
acid029 Writing a base protonation constant expression  
acid030 Calculating the pH of a weak base solution  
acid031 Deriving  $K_b$  from  $K_a$   
acid042 Interconverting  $K_a$  and  $pK_a$   
acid048 Calculating the pH of a salt solution  
acid036 Setting up a reaction table for a pH calculation with a common ion  
acid037 Calculating the pH of a buffer  
acid038 Calculating the composition of a buffer of a given pH  
acid023 Determining the volume of base needed to titrate a given mass of acid  
acid024 Determining the molar mass of an acid by titration  
acid025 Standardizing a base solution by titration  
acid040 Calculating the pH of a weak acid titrated with a strong base  
acid041 Calculating the pH of a weak base titrated with a strong acid  
acid043 Calculating the pH at equivalence of a titration  
soln014 Writing a solubility product ( $K_{sp}$ ) expression  
soln015 Using  $K_{sp}$  to calculate the solubility of a compound  
soln016 Using the solubility of a compound to calculate  $K_{sp}$   
soln017 Calculating the solubility of an ionic compound when a common ion is present  
soln018 Understanding the effect of pH on the solubility of ionic compounds  
thermo038 Calculating reaction free energy under nonstandard conditions  
thermo039 Using reaction free energy to predict equilibrium composition

### Advanced Material

nchem001 Interpreting the symbol for a nuclide  
nchem002 Writing the symbols in a nuclear chemical equation  
nchem003 Balancing a nuclear chemical equation  
nchem006 Writing the equation for a typical radioactive decay  
nchem008 Calculating the energy change in a nuclear reaction from the mass change  
nchem004 Knowing the properties of the common types of nuclear radiation  
nchem005 Understanding the common modes of radioactive decay  
nchem009 Understanding radioactive half life  
nchem010 Interconverting amount of radioactive decay and half life  
nchem011 Calculating radioactive activity from half life  
nchem012 Using isotope ratios to radiodate  
nchem013 Using activity to radiodate  
ichem008 Writing the formula of a metal complex from its description  
ichem009 Recognizing typical metal ligands  
ichem010 Determining the oxidation state of the metal in a complex ion  
ichem011 Naming complex cations with one type of ligand  
ichem012 Naming complex anions with one type of ligand  
ichem013 Naming complex ions  
ichem014 Determining the oxidation state of the metal in a coordination compound  
ichem015 Naming coordination compounds  
ichem016 Determining the coordination number of a metal in a complex  
ichem017 Understanding the connection between geometry and coordination number of a metal complex  
ichem018 Distinguishing isomers and alternate views of a metal complex  
ichem019 Drawing an isomer of a metal complex  
ichem020 Drawing cis and trans isomers of a metal complex  
ichem023 Adding electrons to a crystal field theory energy level diagram  
ichem024 Predicting color and magnetic properties from a crystal field theory energy level diagram  
ichem025 Drawing a crystal field theory energy level diagram  
ochem001 Identifying organic compounds



ochem003 Interpreting condensed chemical structures  
ochem004 Identifying organic functional groups  
ochem005 Identifying the main chain of branched alkanes  
ochem006 Numbering the main chain of branched alkanes  
ochem007 Interpreting condensed chemical structures with benzene rings  
ochem008 Naming normal alkanes  
ochem009 Using family suffixes to name organic compounds  
ochem010 Naming the parent hydrocarbon of branched alkanes  
ochem011 Naming alkyl side chains  
ochem012 Naming branched alkanes  
ochem013 Using multiplying affixes in the names of branched alkanes  
ochem016 Naming unbranched alkenes and alkynes  
ochem017 Naming alkenes and alkynes  
ochem018 Naming alkyl halides  
ochem019 Naming alcohols  
ochem020 Naming aldehydes and acids  
ochem021 Naming benzene derivatives

## B.78 AP Chemistry (First Semester)

### Math and Algebra

arith231 Integer multiplication and division  
arith067 Simplifying a fraction  
arith212 Equivalent fractions  
arith105 Signed fraction multiplication: Advanced  
arith220 Decimal place value: Hundreds to ten thousandths  
arith221 Rounding decimals  
arith234 Signed decimal addition and subtraction with 3 numbers  
arith030 Finding a percentage of a whole number without a calculator: Basic  
arith047 Evaluating expressions with exponents: Problem type 1  
arith029 Ordering numbers with positive exponents  
arith024 Ordering numbers with negative exponents  
alge024 Introduction to the product rule of exponents  
alge026 Quotient of expressions involving exponents  
alge004 Evaluating a quadratic expression: Integers  
alge606 Distributive property: Whole number coefficients  
alge604 Distributive property: Integer coefficients  
alge607 Combining like terms: Integer coefficients  
alge663 Combining like terms: Advanced  
alge160 Algebraic symbol manipulation  
alge027 Power rules with positive exponents  
alge025 Power of a power rule with negative exponents  
alge029 Simplifying a sum or difference of three univariate polynomials  
alge030 Product rule with positive exponents: Multivariate  
alge033 Multiplying binomials with leading coefficients of 1  
alge032 Squaring a binomial: Univariate  
alge180 Multiplication involving binomials and trinomials in two variables  
alge053 Multiplying rational expressions involving multivariate monomials  
alge006 Solving a two-step equation with integers  
alge200 Solving an equation to find the value of an expression  
alge060 Solving a rational equation that simplifies to linear: Denominator x  
alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
alge214 Discriminant of a quadratic equation  
alge095 Applying the quadratic formula: Exact answers  
alge194 Graphing a line given its equation in slope-intercept form  
alge196 Graphing a line through a given point with a given slope

alge637 Determining the slope of a line given its graph  
alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
alge070 Writing an equation of a line given the y-intercept and another point  
unit041 Volume of a cube or a rectangular prism  
geom802 Circumference and area of a circle  
unit841 Volume of a sphere  
unit029 Volume of a cylinder

### Measurement

arith082 Multiplication of a decimal by a power of ten  
arith083 Division of a decimal by a power of ten  
scinot101 Converting between decimal numbers and numbers written in scientific notation  
scinot102 Multiplying and dividing numbers written in scientific notation  
scinot103 Calculating positive powers of scientific notation  
scinot007 Finding negative powers of scientific notation  
unit040 Identifying SI units  
unit014 Interconversion of prefixed and base SI units  
unit015 Interconversion of prefixed SI units  
unit016 Interconverting compound SI units  
unit038 Interconverting derived SI units  
unit032 Interconverting temperatures in Celsius and Kelvins  
unit033 Interconverting temperatures in Celsius and Fahrenheit  
unit017 Adding and subtracting simple units  
unit018 Multiplying and dividing simple units  
unit019 Powers and roots of powers of simple units  
unit020 Forming compound units  
unit021 Adding and subtracting compound units  
unit022 Multiplying and dividing compound units  
unit023 Powers and roots of compound units  
sigfig001 Counting significant digits  
sigfig002 Rounding to a given significant digit  
sigfig003 Counting significant digits when measurements are added or subtracted  
sigfig004 Counting significant digits when measurements are multiplied or divided  
sigfig005 Adding or subtracting and multiplying or dividing measurements

### Matter

atom015 Distinguishing elements and compounds  
atom016 Distinguishing compounds and mixtures  
atom034 Distinguishing chemical and physical change  
atom033 Distinguishing solid, liquid and gas phases of a pure substance  
atom001 Names and symbols of important elements  
atom002 Reading a Periodic Table entry  
atom042 Understanding periods and groups of the Periodic Table  
atom003 Organization of the Periodic Table  
atom005 Standard chemical and physical states of the elements  
atom038 Using the Periodic Table to identify similar elements

### Atoms, Ions and Molecules

atom039 Identifying the parts of an atom  
atom006 Counting protons and electrons in atoms and atomic ions  
atom029 Finding isotopic atoms  
atom030 Finding isoelectronic atoms

atom012 Predicting the ions formed by common main-group elements  
atom004 Isotopes  
atom019 Counting valence electrons in an atomic ion  
atom020 Drawing the Lewis dot diagram of a main group atom or common atomic ion  
atom048 Counting the electron shells in a neutral atom  
stoich006 Counting the number of atoms in a formula unit  
atom045 Understanding the prefixes used in naming binary compounds  
atom014 Naming binary covalent compounds  
ochem001 Identifying organic compounds  
ochem008 Naming normal alkanes  
atom017 Predicting whether a compound is ionic or molecular  
atom007 Predicting the formula of binary ionic compounds  
atom008 Naming binary ionic compounds  
atom028 Deducing the ions in a binary ionic compound from its empirical formula  
atom013 Predicting and naming ionic compounds formed by two elements  
atom036 Identifying common polyatomic ions  
atom011 Predicting the formula of ionic compounds with common polyatomic ions  
atom009 Naming ionic compounds with common polyatomic ions  
atom035 Deducing the ions in a polyatomic ionic compound from its empirical formula  
atom037 Identifying oxoanions  
atom010 Naming ionic compounds with common oxoanions

### Stoichiometry

stoich002 Using the Avogadro Number  
stoich003 Calculating and using the molar mass of elements  
stoich004 Calculating and using the molar mass of diatomic elements  
stoich005 Calculating and using the molar mass of heterodiatomc compounds  
stoich007 Finding mole ratios from chemical formulae  
stoich008 Finding chemical formulae from a mole ratio  
stoich009 Finding molar mass from chemical formulae  
stoich010 Finding mass percent from chemical formulae  
stoich011 Elemental analysis  
rxn002 Writing a chemical equation from a description of the reaction  
rxn001 Identifying combination, decomposition, single and double displacement reactions  
stoich012 Stoichiometric coefficients  
stoich013 Balancing chemical equations with noninterfering coefficients  
stoich014 Balancing chemical equations with interfering coefficients  
rxn004 Writing the net equation for a sequence of reactions  
stoich015 Solving for a reactant using a chemical equation  
stoich017 Limiting reactants  
stoich018 Percent yield of chemical reactions  
stoich020 Calculating molarity using solute moles  
stoich028 Using molarity to find solute moles and solution volume  
stoich029 Calculating molarity using solute mass  
stoich030 Using molarity to find solute mass and solution volume  
stoich021 Dilution  
stoich037 Solving for a reactant in solution  
stoich038 Solving limiting reactant problems in solution  
stoich022 Calculating mass percent composition  
stoich032 Using mass percent composition to find solution volume  
soln006 Calculating molality  
soln008 Calculating mole fraction

### Simple Reactions

soln001 Predicting the products of dissolution  
soln002 Writing net ionic equations

soln003 Predicting precipitation  
rxn006 Identifying precipitation, combustion and acid-base reactions  
acid002 Identifying acids and bases by their chemical formula  
acid011 Predicting the products of a neutralization reaction  
acid001 Identifying acids and bases by their reaction with water  
acid007 Understanding the difference between strong and weak acids  
acid008 Identifying Bronsted-Lowry acids and bases  
acid009 Finding the conjugate of an acid or base  
acid010 Predicting the products of the reaction of a strong acid with water  
acid003 Naming inorganic acids  
acid004 Deducing the formulae of inorganic acids from their names  
acid006 Recognizing common acids and bases  
redox001 Assigning oxidation numbers  
redox002 Recognizing reduction and oxidation  
redox003 Identifying oxidizing and reducing agents  
redox004 Identifying oxidized and reduced reactants in a metal-nonmetal reaction  
redox005 Identifying oxidized and reduced reactants in a single-displacement reaction  
redox011 Predicting whether simple electrochemical reactions happen  
redox006 Writing a simple half-reaction from its description  
redox007 Writing the half-reactions of a metal-nonmetal reaction  
redox008 Writing the half-reactions of a single-displacement reaction

### Thermochemistry

thermo001 Understanding how kinetic energy scales with mass and speed  
thermo002 Understanding how electrostatic potential energy scales with charge and separation  
thermo003 Using conservation of energy to predict the qualitative exchange of kinetic and potential energy  
thermo005 Calculating pressure-volume work  
thermo006 Understanding the definitions of heat and work  
thermo007 Understanding the definition of enthalpy  
thermo008 Interconverting calories and joules  
thermo011 Calculating specific heat capacity  
thermo009 Using specific heat capacity to find heat  
thermo010 Using specific heat capacity to find temperature change  
thermo020 Using the general properties of reaction enthalpy  
thermo014 Calculating the heat of reaction from molar reaction enthalpy and the mass of a reactant  
thermo021 Using Hess's Law to calculate net reaction enthalpy  
thermo022 Writing a standard formation reaction  
thermo023 Calculating a molar heat of reaction from formation enthalpies  
thermo018 Calculating the heat of reaction from bond energies

### Electronic Structure

atom051 Understanding the meaning of a de Broglie wavelength  
atom052 Interpreting the radial probability distribution of an orbital  
atom053 Interpreting the angular probability distribution of an orbital  
atom054 Recognizing s and p orbitals  
atom055 Deducing n and l from a subshell label  
atom056 Deciding the relative energy of electron subshells  
atom057 Drawing a box diagram of the electron configuration of an atom  
atom021 Deducing the allowed quantum numbers of an atomic electron  
atom024 Calculating the capacity of electron subshells  
atom031 Knowing the subshells of an electron shell  
atom025 Interpreting the electron configuration of an atom or atomic ion  
atom026 Interpreting the electron configuration of an atom or atomic ion in noble-gas notation  
atom027 Writing the electron configuration of an atom or atomic ion with s and p electrons only  
atom046 Understanding periodic trends in atomic size  
atom047 Understanding periodic trends in atomic ionizability

atom041 Understanding the organization of the electromagnetic spectrum  
atom040 Interconverting the wavelength and frequency of electromagnetic radiation  
atom043 Interconverting wavelength, frequency and photon energy  
atom044 Calculating the wavelength of a spectral line from an energy diagram  
atom049 Predicting the qualitative features of a line spectrum  
atom050 Calculating the wavelength of a line in the spectrum of hydrogen

### Gases

gas001 Interconverting pressure and force  
gas002 Measuring pressure in non-SI units  
gas003 Understanding pressure equilibrium and atmospheric pressure  
gas004 Understanding Boyle's Law  
gas005 Solving applications of Boyle's Law  
gas006 Using Charles's Law  
gas007 Using the ideal equation of state  
gas008 Interconverting molar mass and density of ideal gases  
gas009 Calculating mole fraction in a gas mixture  
gas010 Calculating partial pressure in a gas mixture  
gas011 Solving for a gaseous reactant  
gas012 Understanding how average molecular kinetic energy scales with temperature  
gas013 Understanding how average molecular speed scales with temperature and molar mass  
gas014 Interpreting a graph of molecular speed distribution  
gas015 Predicting how molecular speed distribution changes with temperature and molar mass  
gas016 Calculating average molecular speed  
gas017 Understanding how molecular collision rate scales with temperature and volume  
gas018 Using relative effusion rates to find an unknown molar mass

### Advanced Material

thermo017 Using heat of fusion or vaporization to find the heat needed to melt or boil a substance  
thermo019 Relating vapor pressure to vaporization  
thermo040 Using a phase diagram to predict phase at a given temperature and pressure  
thermo041 Labeling a typical simple phase diagram  
thermo042 Using a phase diagram to find a phase transition temperature or pressure  
soln013 Understanding conceptual components of the enthalpy of solution  
soln010 Using Henry's Law to calculate the solubility of a gas  
soln005 Predicting relative boiling point elevations and freezing point depressions  
soln007 Using osmotic pressure to find molar mass  
soln009 Using Raoult's Law to calculate the vapor pressure of a component  
equi009 Predicting how reaction rate varies with pressure, concentration and temperature  
equi012 Calculating the reaction rate of one reactant from that of another  
equi032 Calculating average and instantaneous reaction rate from a graph of concentration versus time  
equi019 Using a rate law  
equi020 Using reactant reaction order to predict changes in initial rate  
equi021 Deducing a rate law from initial reaction rate data  
equi023 Calculating the change in concentration after a whole number of half-lives of a first-order reaction  
equi022 Using an integrated rate law for a first-order reaction  
equi027 Using a second-order integrated rate law to find concentration change  
equi028 Using first- and second-order integrated rate laws  
equi029 Deducing a rate law from the change in concentration over time  
equi030 Finding half life and rate constant from a graph of concentration versus time  
equi010 Interpreting a reaction energy diagram  
equi011 Relating activation energy to reaction rate  
equi013 Drawing the reaction energy diagram of a catalyzed reaction  
equi024 Understanding the qualitative predictions of the Arrhenius equation  
equi025 Using the Arrhenius equation to calculate k at one temperature from k at another  
equi026 Using the Arrhenius equation to calculate  $E_a$  from k versus T data

equi003 Understanding that no reaction goes to 100%  
equi004 Predicting relative forward and reverse rates of reaction in a dynamic equilibrium  
equi005 Using Le Chatelier's Principle to predict the result of changing concentration or volume  
equi006 Using Le Chatelier's Principle to predict the result of changing temperature  
equi007 Writing an equilibrium constant expression  
equi014 Writing an equilibrium constant expression for a heterogeneous equilibrium  
equi008 Using an equilibrium constant to predict the direction of spontaneous reaction  
equi015 Using the general properties of equilibrium constants  
equi016 Setting up a reaction table  
equi017 Calculating equilibrium composition from an equilibrium constant  
acid032 Predicting the qualitative acid-base properties of salts  
acid005 Naming acid salts  
acid016 Interconverting pH and hydronium ion concentration  
acid017 Using the ion product of water  
acid018 Making qualitative estimates of pH change  
acid019 Calculating the pH of a strong acid solution  
acid020 Calculating the pH of a strong base solution  
acid021 Diluting a strong acid solution to a given pH  
acid022 Preparing a strong base solution with a given pH  
acid026 Writing an acid dissociation constant expression  
acid027 Calculating the  $K_a$  of a weak acid from pH  
acid028 Calculating the pH of a weak acid solution  
acid029 Writing a base protonation constant expression  
acid030 Calculating the pH of a weak base solution  
acid031 Deriving  $K_b$  from  $K_a$   
acid042 Interconverting  $K_a$  and  $pK_a$   
acid048 Calculating the pH of a salt solution  
acid035 Identifying the major species in weak acid or weak base equilibria  
acid036 Setting up a reaction table for a pH calculation with a common ion  
acid037 Calculating the pH of a buffer  
acid038 Calculating the composition of a buffer of a given pH  
acid023 Determining the volume of base needed to titrate a given mass of acid  
acid024 Determining the molar mass of an acid by titration  
acid025 Standardizing a base solution by titration  
acid040 Calculating the pH of a weak acid titrated with a strong base  
acid041 Calculating the pH of a weak base titrated with a strong acid  
acid043 Calculating the pH at equivalence of a titration  
soln014 Writing a solubility product ( $K_{sp}$ ) expression  
soln015 Using  $K_{sp}$  to calculate the solubility of a compound  
soln016 Using the solubility of a compound to calculate  $K_{sp}$   
soln017 Calculating the solubility of an ionic compound when a common ion is present  
soln018 Understanding the effect of pH on the solubility of ionic compounds  
thermo024 Calculating entropy change from reversible heat flow  
thermo026 Calculating absolute entropy using the Boltzmann hypothesis  
thermo027 Calculating entropy change using the Boltzmann hypothesis  
thermo028 Predicting qualitatively how entropy changes with temperature and volume  
thermo029 Predicting qualitatively how entropy changes with mixing and separation  
thermo030 Qualitatively predicting reaction entropy  
thermo031 Calculating reaction entropy using the standard molar entropies of reactants  
thermo032 Using the general properties of Gibbs free energy  
thermo033 Calculating  $dG$  from  $dH$  and  $dS$   
thermo034 Using the conditions of spontaneity to deduce the signs of  $\Delta H$  and  $\Delta S$   
thermo035 Calculating standard reaction free energy from standard free energies of formation  
thermo036 Predicting how equilibrium shifts with temperature change  
thermo037 Estimating a phase transition temperature from standard thermodynamic data  
thermo038 Calculating reaction free energy under nonstandard conditions  
thermo039 Using reaction free energy to predict equilibrium composition  
redox009 Writing and balancing complex half-reactions in acidic solution  
redox010 Writing and balancing complex half-reactions in basic solution  
redox013 Balancing a complex redox equation in acidic or basic solution  
redox014 Writing the half-reactions of a complex redox reaction in acidic or basic solution  
redox012 Designing a galvanic cell from a single-displacement redox reaction

redox016 Designing a galvanic cell from two half-reactions  
redox017 Analyzing a galvanic cell  
redox018 Picking a reduction or oxidation that will make a galvanic cell work  
redox019 Ranking the strength of oxidizing and reducing agents using standard reduction potentials  
redox020 Calculating standard reaction free energy from standard reduction potentials  
redox021 Using the Nernst equation to calculate nonstandard cell voltage  
nchem001 Interpreting the symbol for a nuclide  
nchem002 Writing the symbols in a nuclear chemical equation  
nchem003 Balancing a nuclear chemical equation  
nchem004 Knowing the properties of the common types of nuclear radiation  
nchem005 Understanding the common modes of radioactive decay  
nchem006 Writing the equation for a typical radioactive decay  
nchem008 Calculating the energy change in a nuclear reaction from the mass change  
nchem009 Understanding radioactive half life  
nchem010 Interconverting amount of radioactive decay and half life  
nchem011 Calculating radioactive activity from half life  
nchem012 Using isotope ratios to radiodate  
nchem013 Using activity to radiodate  
ochem003 Interpreting condensed chemical structures  
ochem004 Identifying organic functional groups  
ochem005 Identifying the main chain of branched alkanes  
ochem006 Numbering the main chain of branched alkanes  
ochem007 Interpreting condensed chemical structures with benzene rings  
ochem009 Using family suffixes to name organic compounds  
ochem010 Naming the parent hydrocarbon of branched alkanes  
ochem011 Naming alkyl side chains  
ochem012 Naming branched alkanes  
ochem013 Using multiplying affixes in the names of branched alkanes  
ochem016 Naming unbranched alkenes and alkynes  
ochem017 Naming alkenes and alkynes  
ochem018 Naming alkyl halides  
ochem019 Naming alcohols  
ochem020 Naming aldehydes and acids  
ochem021 Naming benzene derivatives

## B.79 AP Chemistry (Second Semester)

### Math and Algebra

arith231 Integer multiplication and division  
arith067 Simplifying a fraction  
arith212 Equivalent fractions  
arith105 Signed fraction multiplication: Advanced  
arith220 Decimal place value: Hundreds to ten thousandths  
arith221 Rounding decimals  
arith234 Signed decimal addition and subtraction with 3 numbers  
arith030 Finding a percentage of a whole number without a calculator: Basic  
arith047 Evaluating expressions with exponents: Problem type 1  
arith029 Ordering numbers with positive exponents  
arith024 Ordering numbers with negative exponents  
alge024 Introduction to the product rule of exponents  
alge026 Quotient of expressions involving exponents  
alge004 Evaluating a quadratic expression: Integers  
alge606 Distributive property: Whole number coefficients  
alge604 Distributive property: Integer coefficients  
alge607 Combining like terms: Integer coefficients  
alge663 Combining like terms: Advanced  
alge160 Algebraic symbol manipulation



alge027 Power rules with positive exponents  
alge025 Power of a power rule with negative exponents  
alge029 Simplifying a sum or difference of three univariate polynomials  
alge030 Product rule with positive exponents: Multivariate  
alge033 Multiplying binomials with leading coefficients of 1  
alge032 Squaring a binomial: Univariate  
alge180 Multiplication involving binomials and trinomials in two variables  
alge053 Multiplying rational expressions involving multivariate monomials  
alge006 Solving a two-step equation with integers  
alge200 Solving an equation to find the value of an expression  
alge060 Solving a rational equation that simplifies to linear: Denominator x  
alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
alge214 Discriminant of a quadratic equation  
alge095 Applying the quadratic formula: Exact answers  
alge194 Graphing a line given its equation in slope-intercept form  
alge196 Graphing a line through a given point with a given slope  
alge637 Determining the slope of a line given its graph  
alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
alge070 Writing an equation of a line given the y-intercept and another point  
unit041 Volume of a cube or a rectangular prism  
geom802 Circumference and area of a circle  
unit841 Volume of a sphere  
unit029 Volume of a cylinder  
arith082 Multiplication of a decimal by a power of ten  
arith083 Division of a decimal by a power of ten  
scinot101 Converting between decimal numbers and numbers written in scientific notation  
scinot102 Multiplying and dividing numbers written in scientific notation  
scinot103 Calculating positive powers of scientific notation  
scinot007 Finding negative powers of scientific notation

### Measurement and Matter

unit040 Identifying SI units  
unit014 Interconversion of prefixed and base SI units  
unit015 Interconversion of prefixed SI units  
unit016 Interconverting compound SI units  
unit038 Interconverting derived SI units  
unit032 Interconverting temperatures in Celsius and Kelvins  
unit033 Interconverting temperatures in Celsius and Fahrenheit  
unit017 Adding and subtracting simple units  
unit018 Multiplying and dividing simple units  
unit019 Powers and roots of powers of simple units  
unit020 Forming compound units  
unit021 Adding and subtracting compound units  
unit022 Multiplying and dividing compound units  
unit023 Powers and roots of compound units  
sigfig001 Counting significant digits  
sigfig002 Rounding to a given significant digit  
sigfig003 Counting significant digits when measurements are added or subtracted  
sigfig004 Counting significant digits when measurements are multiplied or divided  
sigfig005 Adding or subtracting and multiplying or dividing measurements  
atom015 Distinguishing elements and compounds  
atom016 Distinguishing compounds and mixtures  
atom034 Distinguishing chemical and physical change  
atom033 Distinguishing solid, liquid and gas phases of a pure substance  
atom001 Names and symbols of important elements  
atom002 Reading a Periodic Table entry  
atom042 Understanding periods and groups of the Periodic Table  
atom003 Organization of the Periodic Table

atom005 Standard chemical and physical states of the elements  
atom038 Using the Periodic Table to identify similar elements  
atom039 Identifying the parts of an atom  
atom006 Counting protons and electrons in atoms and atomic ions  
atom029 Finding isoprotonic atoms  
atom030 Finding isoelectronic atoms  
atom012 Predicting the ions formed by common main-group elements  
atom004 Isotopes  
atom019 Counting valence electrons in an atomic ion  
atom020 Drawing the Lewis dot diagram of a main group atom or common atomic ion  
atom048 Counting the electron shells in a neutral atom  
stoich006 Counting the number of atoms in a formula unit  
atom045 Understanding the prefixes used in naming binary compounds  
atom014 Naming binary covalent compounds  
atom017 Predicting whether a compound is ionic or molecular  
atom007 Predicting the formula of binary ionic compounds  
atom008 Naming binary ionic compounds  
atom028 Deducing the ions in a binary ionic compound from its empirical formula  
atom013 Predicting and naming ionic compounds formed by two elements  
atom036 Identifying common polyatomic ions  
atom011 Predicting the formula of ionic compounds with common polyatomic ions  
atom009 Naming ionic compounds with common polyatomic ions  
atom035 Deducing the ions in a polyatomic ionic compound from its empirical formula  
atom037 Identifying oxoanions  
atom010 Naming ionic compounds with common oxoanions

### Chemical Reactions

stoich002 Using the Avogadro Number  
stoich003 Calculating and using the molar mass of elements  
stoich004 Calculating and using the molar mass of diatomic elements  
stoich005 Calculating and using the molar mass of heterodiatomc compounds  
stoich007 Finding mole ratios from chemical formulae  
stoich008 Finding chemical formulae from a mole ratio  
stoich009 Finding molar mass from chemical formulae  
stoich010 Finding mass percent from chemical formulae  
stoich011 Elemental analysis  
rxn002 Writing a chemical equation from a description of the reaction  
rxn001 Identifying combination, decomposition, single and double displacement reactions  
stoich012 Stoichiometric coefficients  
stoich013 Balancing chemical equations with noninterfering coefficients  
stoich014 Balancing chemical equations with interfering coefficients  
rxn004 Writing the net equation for a sequence of reactions  
stoich015 Solving for a reactant using a chemical equation  
stoich017 Limiting reactants  
stoich018 Percent yield of chemical reactions  
stoich020 Calculating molarity using solute moles  
stoich028 Using molarity to find solute moles and solution volume  
stoich029 Calculating molarity using solute mass  
stoich030 Using molarity to find solute mass and solution volume  
stoich021 Dilution  
stoich037 Solving for a reactant in solution  
stoich038 Solving limiting reactant problems in solution  
soln001 Predicting the products of dissolution  
soln002 Writing net ionic equations  
soln003 Predicting precipitation  
rxn006 Identifying precipitation, combustion and acid-base reactions  
acid002 Identifying acids and bases by their chemical formula  
acid011 Predicting the products of a neutralization reaction  
redox001 Assigning oxidation numbers

redox002 Recognizing reduction and oxidation  
redox003 Identifying oxidizing and reducing agents  
redox004 Identifying oxidized and reduced reactants in a metal-nonmetal reaction  
redox005 Identifying oxidized and reduced reactants in a single-displacement reaction  
redox011 Predicting whether simple electrochemical reactions happen  
thermo001 Understanding how kinetic energy scales with mass and speed  
thermo002 Understanding how electrostatic potential energy scales with charge and separation  
thermo003 Using conservation of energy to predict the qualitative exchange of kinetic and potential energy  
thermo005 Calculating pressure-volume work  
thermo006 Understanding the definitions of heat and work  
thermo007 Understanding the definition of enthalpy  
thermo008 Interconverting calories and joules  
thermo011 Calculating specific heat capacity  
thermo009 Using specific heat capacity to find heat  
thermo010 Using specific heat capacity to find temperature change  
thermo020 Using the general properties of reaction enthalpy  
thermo014 Calculating the heat of reaction from molar reaction enthalpy and the mass of a reactant  
thermo021 Using Hess's Law to calculate net reaction enthalpy  
thermo022 Writing a standard formation reaction  
thermo023 Calculating a molar heat of reaction from formation enthalpies  
thermo018 Calculating the heat of reaction from bond energies

### Structure and Bonding

atom051 Understanding the meaning of a de Broglie wavelength  
atom052 Interpreting the radial probability distribution of an orbital  
atom053 Interpreting the angular probability distribution of an orbital  
atom054 Recognizing s and p orbitals  
atom055 Deducing n and l from a subshell label  
atom056 Deciding the relative energy of electron subshells  
atom057 Drawing a box diagram of the electron configuration of an atom  
atom021 Deducing the allowed quantum numbers of an atomic electron  
atom024 Calculating the capacity of electron subshells  
atom031 Knowing the subshells of an electron shell  
atom025 Interpreting the electron configuration of an atom or atomic ion  
atom026 Interpreting the electron configuration of an atom or atomic ion in noble-gas notation  
atom027 Writing the electron configuration of an atom or atomic ion with s and p electrons only  
atom046 Understanding periodic trends in atomic size  
atom047 Understanding periodic trends in atomic ionizability  
atom041 Understanding the organization of the electromagnetic spectrum  
atom040 Interconverting the wavelength and frequency of electromagnetic radiation  
atom043 Interconverting wavelength, frequency and photon energy  
atom044 Calculating the wavelength of a spectral line from an energy diagram  
atom049 Predicting the qualitative features of a line spectrum  
atom050 Calculating the wavelength of a line in the spectrum of hydrogen

### Gases, Liquids and Solids

gas001 Interconverting pressure and force  
gas002 Measuring pressure in non-SI units  
gas003 Understanding pressure equilibrium and atmospheric pressure  
gas004 Understanding Boyle's Law  
gas005 Solving applications of Boyle's Law  
gas006 Using Charles's Law  
gas007 Using the ideal equation of state  
gas008 Interconverting molar mass and density of ideal gases  
gas009 Calculating mole fraction in a gas mixture  
gas010 Calculating partial pressure in a gas mixture

gas011 Solving for a gaseous reactant  
gas012 Understanding how average molecular kinetic energy scales with temperature  
gas013 Understanding how average molecular speed scales with temperature and molar mass  
gas014 Interpreting a graph of molecular speed distribution  
gas015 Predicting how molecular speed distribution changes with temperature and molar mass  
gas016 Calculating average molecular speed  
gas017 Understanding how molecular collision rate scales with temperature and volume  
gas018 Using relative effusion rates to find an unknown molar mass  
thermo017 Using heat of fusion or vaporization to find the heat needed to melt or boil a substance  
thermo019 Relating vapor pressure to vaporization  
thermo040 Using a phase diagram to predict phase at a given temperature and pressure  
thermo041 Labeling a typical simple phase diagram  
thermo042 Using a phase diagram to find a phase transition temperature or pressure

### Solutions

stoich022 Calculating mass percent composition  
stoich032 Using mass percent composition to find solution volume  
soln006 Calculating molality  
soln008 Calculating mole fraction  
soln013 Understanding conceptual components of the enthalpy of solution  
soln010 Using Henry's Law to calculate the solubility of a gas  
soln005 Predicting relative boiling point elevations and freezing point depressions  
soln007 Using osmotic pressure to find molar mass  
soln009 Using Raoult's Law to calculate the vapor pressure of a component

### Kinetics and Equilibrium

equi009 Predicting how reaction rate varies with pressure, concentration and temperature  
equi012 Calculating the reaction rate of one reactant from that of another  
equi032 Calculating average and instantaneous reaction rate from a graph of concentration versus time  
equi019 Using a rate law  
equi020 Using reactant reaction order to predict changes in initial rate  
equi021 Deducing a rate law from initial reaction rate data  
equi023 Calculating the change in concentration after a whole number of half-lives of a first-order reaction  
equi022 Using an integrated rate law for a first-order reaction  
equi027 Using a second-order integrated rate law to find concentration change  
equi028 Using first- and second-order integrated rate laws  
equi029 Deducing a rate law from the change in concentration over time  
equi030 Finding half life and rate constant from a graph of concentration versus time  
equi010 Interpreting a reaction energy diagram  
equi011 Relating activation energy to reaction rate  
equi013 Drawing the reaction energy diagram of a catalyzed reaction  
equi024 Understanding the qualitative predictions of the Arrhenius equation  
equi025 Using the Arrhenius equation to calculate  $k$  at one temperature from  $k$  at another  
equi026 Using the Arrhenius equation to calculate  $E_a$  from  $k$  versus  $T$  data  
equi003 Understanding that no reaction goes to 100%  
equi004 Predicting relative forward and reverse rates of reaction in a dynamic equilibrium  
equi005 Using Le Chatelier's Principle to predict the result of changing concentration or volume  
equi006 Using Le Chatelier's Principle to predict the result of changing temperature  
equi007 Writing an equilibrium constant expression  
equi014 Writing an equilibrium constant expression for a heterogeneous equilibrium  
equi008 Using an equilibrium constant to predict the direction of spontaneous reaction  
equi015 Using the general properties of equilibrium constants  
equi016 Setting up a reaction table  
equi017 Calculating equilibrium composition from an equilibrium constant

**Acids and Bases**

acid001 Identifying acids and bases by their reaction with water  
acid007 Understanding the difference between strong and weak acids  
acid008 Identifying Bronsted-Lowry acids and bases  
acid009 Finding the conjugate of an acid or base  
acid010 Predicting the products of the reaction of a strong acid with water  
acid032 Predicting the qualitative acid-base properties of salts  
acid003 Naming inorganic acids  
acid004 Deducing the formulae of inorganic acids from their names  
acid005 Naming acid salts  
acid006 Recognizing common acids and bases  
acid016 Interconverting pH and hydronium ion concentration  
acid017 Using the ion product of water  
acid018 Making qualitative estimates of pH change  
acid019 Calculating the pH of a strong acid solution  
acid020 Calculating the pH of a strong base solution  
acid021 Diluting a strong acid solution to a given pH  
acid022 Preparing a strong base solution with a given pH  
acid026 Writing an acid dissociation constant expression  
acid027 Calculating the  $K_a$  of a weak acid from pH  
acid028 Calculating the pH of a weak acid solution  
acid029 Writing a base protonation constant expression  
acid030 Calculating the pH of a weak base solution  
acid031 Deriving  $K_b$  from  $K_a$   
acid042 Interconverting  $K_a$  and  $pK_a$   
acid048 Calculating the pH of a salt solution  
acid035 Identifying the major species in weak acid or weak base equilibria  
acid036 Setting up a reaction table for a pH calculation with a common ion  
acid037 Calculating the pH of a buffer  
acid038 Calculating the composition of a buffer of a given pH  
acid023 Determining the volume of base needed to titrate a given mass of acid  
acid024 Determining the molar mass of an acid by titration  
acid025 Standardizing a base solution by titration  
acid040 Calculating the pH of a weak acid titrated with a strong base  
acid041 Calculating the pH of a weak base titrated with a strong acid  
acid043 Calculating the pH at equivalence of a titration  
soln014 Writing a solubility product ( $K_{sp}$ ) expression  
soln015 Using  $K_{sp}$  to calculate the solubility of a compound  
soln016 Using the solubility of a compound to calculate  $K_{sp}$   
soln017 Calculating the solubility of an ionic compound when a common ion is present  
soln018 Understanding the effect of pH on the solubility of ionic compounds

**Entropy and Free Energy**

thermo024 Calculating entropy change from reversible heat flow  
thermo026 Calculating absolute entropy using the Boltzmann hypothesis  
thermo027 Calculating entropy change using the Boltzmann hypothesis  
thermo028 Predicting qualitatively how entropy changes with temperature and volume  
thermo029 Predicting qualitatively how entropy changes with mixing and separation  
thermo030 Qualitatively predicting reaction entropy  
thermo031 Calculating reaction entropy using the standard molar entropies of reactants  
thermo032 Using the general properties of Gibbs free energy  
thermo033 Calculating  $dG$  from  $dH$  and  $dS$   
thermo034 Using the conditions of spontaneity to deduce the signs of  $\Delta H$  and  $\Delta S$   
thermo035 Calculating standard reaction free energy from standard free energies of formation  
thermo036 Predicting how equilibrium shifts with temperature change  
thermo037 Estimating a phase transition temperature from standard thermodynamic data  
thermo038 Calculating reaction free energy under nonstandard conditions

thermo039 Using reaction free energy to predict equilibrium composition

### Electrochemistry

redox006 Writing a simple half-reaction from its description  
redox007 Writing the half-reactions of a metal-nonmetal reaction  
redox008 Writing the half-reactions of a single-displacement reaction  
redox009 Writing and balancing complex half-reactions in acidic solution  
redox010 Writing and balancing complex half-reactions in basic solution  
redox013 Balancing a complex redox equation in acidic or basic solution  
redox014 Writing the half-reactions of a complex redox reaction in acidic or basic solution  
redox012 Designing a galvanic cell from a single-displacement redox reaction  
redox016 Designing a galvanic cell from two half-reactions  
redox017 Analyzing a galvanic cell  
redox018 Picking a reduction or oxidation that will make a galvanic cell work  
redox019 Ranking the strength of oxidizing and reducing agents using standard reduction potentials  
redox020 Calculating standard reaction free energy from standard reduction potentials  
redox021 Using the Nernst equation to calculate nonstandard cell voltage

### Nuclear and Organic Chemistry

nchem001 Interpreting the symbol for a nuclide  
nchem002 Writing the symbols in a nuclear chemical equation  
nchem003 Balancing a nuclear chemical equation  
nchem006 Writing the equation for a typical radioactive decay  
nchem008 Calculating the energy change in a nuclear reaction from the mass change  
nchem004 Knowing the properties of the common types of nuclear radiation  
nchem005 Understanding the common modes of radioactive decay  
nchem009 Understanding radioactive half life  
nchem010 Interconverting amount of radioactive decay and half life  
nchem011 Calculating radioactive activity from half life  
nchem012 Using isotope ratios to radiodate  
nchem013 Using activity to radiodate  
ochem001 Identifying organic compounds  
ochem003 Interpreting condensed chemical structures  
ochem004 Identifying organic functional groups  
ochem005 Identifying the main chain of branched alkanes  
ochem006 Numbering the main chain of branched alkanes  
ochem007 Interpreting condensed chemical structures with benzene rings  
ochem008 Naming normal alkanes  
ochem009 Using family suffixes to name organic compounds  
ochem010 Naming the parent hydrocarbon of branched alkanes  
ochem011 Naming alkyl side chains  
ochem012 Naming branched alkanes  
ochem013 Using multiplying affixes in the names of branched alkanes  
ochem016 Naming unbranched alkenes and alkynes  
ochem017 Naming alkenes and alkynes  
ochem018 Naming alkyl halides  
ochem019 Naming alcohols  
ochem020 Naming aldehydes and acids  
ochem021 Naming benzene derivatives

## B.80 Math Review for AP Calculus

### Real Numbers

arith067 Simplifying a fraction  
 arith092 Using a common denominator to order fractions  
 arith230 Addition or subtraction of fractions with different denominators  
 arith053 Fraction multiplication  
 arith022 Fraction division  
 arith100 Fractional part of a circle  
 arith226 Converting between percentages and decimals  
 arith698 Applying the percent equation  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith031 Finding the original price given the sale price and percent discount  
 arith225 Finding the percentage increase or decrease: Advanced  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 arith108 Integer addition: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith116 Signed fraction addition or subtraction: Basic  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 arith231 Integer multiplication and division  
 arith822 Signed fraction multiplication: Basic  
 arith105 Signed fraction multiplication: Advanced  
 arith702 Exponents and integers: Problem type 1  
 arith703 Exponents and integers: Problem type 2  
 arith704 Exponents and signed fractions  
 arith600 Order of operations with integers and exponents  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 arith071 Absolute value of a number  
 arith104 Operations with absolute value: Problem type 2  
 alge001 Identifying numbers as integers or non-integers  
 alge002 Identifying numbers as rational or irrational  
 alge187 Properties of addition  
 alge188 Properties of real numbers

### Equations and Inequalities

alge010 Additive property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge006 Solving a two-step equation with integers  
 alge208 Solving a two-step equation with signed fractions  
 alge200 Solving an equation to find the value of an expression  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge743 Algebraic symbol manipulation: Problem type 1  
 alge744 Algebraic symbol manipulation: Problem type 2  
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides



alge794 Solving a value mixture problem using a linear equation  
 alge020 Solving a linear inequality: Problem type 2  
 alge021 Solving a linear inequality: Problem type 3  
 alge207 Solving a linear inequality: Problem type 4  
 alge166 Graphing a compound inequality on the number line  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge747 Solving a compound linear inequality: Interval notation  
 alge729 Writing a multi-step inequality for a real-world situation  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
 alge270 Solving an absolute value equation of the form  $a-x = b$  or  $-x+a = b$   
 alge103 Solving an absolute value equation of the form  $-ax+b = c$   
 alge167 Solving an absolute value equation of the form  $-ax+b = -cx+d$   
 alge170 Solving an absolute value inequality: Basic

### Exponents and Polynomials

alge790 Evaluating expressions with exponents of zero  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith029 Ordering numbers with positive exponents  
 arith024 Ordering numbers with negative exponents  
 alge024 Introduction to the product rule of exponents  
 alge030 Product rule with positive exponents: Multivariate  
 alge028 Product rule with negative exponents  
 alge026 Quotient of expressions involving exponents  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge754 Introduction to the power rules of exponents  
 alge027 Power rules with positive exponents  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge756 Power and product rules with positive exponents  
 alge757 Power, product, and quotient rules with negative exponents  
 arith036 Scientific notation with positive exponent  
 arith037 Scientific notation with negative exponent  
 scinot002 Multiplying and dividing numbers written in scientific notation  
 alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge663 Combining like terms: Advanced  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge764 Multiplying conjugate binomials: Univariate  
 alge032 Squaring a binomial: Univariate  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge736 Introduction to the GCF of two monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge705 Factoring a quadratic with leading coefficient 1  
 alge040 Factoring a quadratic with leading coefficient greater than 1  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge624 Factoring a difference of squares  
 alge038 Factoring a polynomial by grouping: Problem type 1  
 alge042 Factoring with repeated use of the difference of squares formula  
 alge044 Factoring a sum or difference of two cubes  
 alge681 Solving an equation written in factored form  
 alge045 Finding the roots of a quadratic equation with leading coefficient 1

alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge781 Solving an equation that can be written in quadratic form: Problem type 1  
 alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
 alge227 Solving a quadratic equation using the square root property: Exact answers, advanced  
 alge094 Completing the square  
 alge780 Solving a quadratic equation by completing the square: Exact answers  
 alge095 Applying the quadratic formula: Exact answers  
 alge214 Discriminant of a quadratic equation  
 alge163 Writing a quadratic equation given the roots and the leading coefficient  
 alge703 Solving a word problem using a quadratic equation with rational roots  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge784 Solving a quadratic inequality written in factored form  
 alge771 Solving a quadratic inequality

### Lines and Systems

alge067 Plotting a point in the coordinate plane  
 alge066 Finding a solution to a linear equation in two variables  
 alge216 Determining whether given points lie on one, both, or neither of 2 lines given equations  
 alge197 Graphing a line given its x- and y-intercepts  
 alge194 Graphing a line given its equation in slope-intercept form  
 alge195 Graphing a line given its equation in standard form  
 alge196 Graphing a line through a given point with a given slope  
 alge198 Graphing a vertical or horizontal line  
 alge069 Finding the y-intercept of a line given its equation  
 alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
 alge684 Finding slope given the graph of a line on a grid  
 alge685 Finding slope given two points on the line  
 alge631 Finding the slope of a line given its equation  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge071 Writing the equation of a line given the slope and a point on the line  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge725 Graphically solving a system of linear equations  
 alge751 Solving a system of linear equations using substitution  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 alge752 Solving a 2x2 system of linear equations that is inconsistent or consistent dependent  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge184 Solving a value mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 alge263 Interpreting the graphs of two functions  
 alge079 Graphing a system of two linear inequalities: Basic

### Functions and Graphs

set001 Set builder notation  
 set002 Union and intersection of finite sets

set004 Set builder and interval notation  
 set005 Union and intersection of intervals  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 pcalc682 Evaluating functions: Absolute value, rational, radical  
 fun030 Evaluating a piecewise-defined function  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 fun016 Domain and range from ordered pairs  
 pcalc761 Finding inputs and outputs of a function from its graph  
 pcalc750 Finding intercepts of a nonlinear function given its graph  
 pcalc751 Finding where a function is increasing, decreasing, or constant given the graph: Interval notation  
 pcalc752 Finding local maxima and minima of a function given the graph  
 fun024 Domain and range from the graph of a continuous function  
 fun025 Domain and range from the graph of a piecewise function  
 alge185 Writing an equation for a function after a vertical translation  
 fun020 Writing an equation for a function after a vertical and horizontal translation  
 pcalc769 Translating the graph of a function: One step  
 pcalc770 Translating the graph of a function: Two steps  
 pcalc771 Transforming the graph of a function by reflecting over an axis  
 pcalc772 Transforming the graph of a function by shrinking or stretching  
 alge277 Finding the x-intercept(s) and the vertex of a parabola  
 pcalc793 Using a graphing calculator to find the x-intercept(s) and vertex of a quadratic function  
 alge252 Graphing a parabola of the form  $y = ax^2$   
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients  
 pcalc774 Rewriting a quadratic function to find the vertex of its graph  
 pcalc762 Range of a quadratic function  
 alge702 Classifying the graph of a function  
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 alge168 Graphing an absolute value equation in the plane: Advanced  
 fun031 Graphing a piecewise-defined function: Problem type 1  
 pcalc764 Finding zeros of a polynomial function written in factored form  
 pcalc765 Finding x- and y-intercepts given a polynomial function  
 pcalc782 Determining the end behavior of the graph of a polynomial function  
 pcalc738 Inferring properties of a polynomial function from its graph  
 pcalc795 Using a graphing calculator to find zeros of a polynomial function  
 pcalc704 Using a graphing calculator to solve a word problem involving a polynomial of degree 3  
 pcalc794 Using a graphing calculator to find local extrema of a polynomial function  
 pcalc115 Using a graphing calculator to solve a word problem involving a local extremum of a polynomial function  
 fun019 Sum, difference, and product of two functions  
 alge786 Quotient of two functions: Basic  
 fun022 Composition of two functions: Basic  
 alge129 Composition of two functions: Advanced  
 fun011 Horizontal line test  
 pcalc777 Determining whether two functions are inverses of each other  
 fun012 Inverse functions: Linear, discrete  
 alge130 Inverse functions: Rational

### Rational Expressions

alge715 Domain of a rational function: Excluded values  
 alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2  
 alge034 Simplifying a ratio of multivariate polynomials  
 alge059 Ordering fractions with variables  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1

alge054 Dividing rational expressions involving multivariate monomials  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge057 Adding rational expressions with different denominators:  $ax$ ,  $bx$   
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge622 Adding rational expressions with different denominators:  $x+a$ ,  $x+b$   
 arith695 Complex fraction without variables: Problem type 1  
 arith696 Complex fraction without variables: Problem type 2  
 alge058 Complex fraction involving multivariate monomials  
 alge767 Complex fraction: GCF and quadratic factoring  
 alge768 Complex fraction made of sums involving rational expressions  
 alge759 Dividing a polynomial by a monomial: Univariate  
 alge761 Polynomial long division: Problem type 1  
 alge762 Polynomial long division: Problem type 2  
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced  
 pcalc812 Partial fraction decomposition with distinct linear factors  
 pcalc813 Partial fraction decomposition with repeated linear factors  
 pcalc814 Partial fraction decomposition with an irreducible quadratic factor  
 pcalc681 Writing an equation that models variation  
 alge175 Word problem on direct variation  
 alge176 Word problem on inverse variation  
 alge772 Word problem on combined variation  
 alge220 Word problem on inverse proportions  
 arith612 Word problem involving multiple rates  
 pcalc815 Sketching the graph of a rational function: Constant over linear  
 pcalc816 Sketching the graph of a rational function: Linear over linear  
 pcalc819 Sketching the graph of a rational function: Quadratic over linear  
 pcalc792 Graphing rational functions with holes

### Radical Expressions

pcalc763 Domain of a square root function: Advanced  
 pcalc781 Graphing a square root function  
 arith601 Square root of a rational perfect square  
 arith094 Cube root of an integer  
 arith093 Simplifying the square root of a whole number less than 100  
 alge264 Square root of a perfect square monomial  
 alge080 Simplifying a radical expression with an even exponent  
 alge275 Simplifying a radical expression with two variables  
 alge273 Simplifying a higher root of a whole number  
 alge811 Simplifying a higher radical expression: Multivariate  
 arith032 Square root addition or subtraction  
 alge084 Simplifying a sum or difference of radical expressions: Multivariate  
 arith039 Square root multiplication: Advanced  
 alge640 Simplifying a product of radical expressions: Multivariate  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge086 Rationalizing the denominator of a radical expression  
 alge088 Rationalizing the denominator of a radical expression using conjugates  
 alge775 Rationalizing a denominator: Quotient involving higher radicals and monomials  
 alge812 Converting between radical form and exponent form  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base

alge251 Rational exponents: Negative exponents and fractional bases  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge249 Rational exponents: Powers of powers with negative exponents  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge091 Solving a radical equation that simplifies to a quadratic equation: One radical  
 alge093 Solving an equation using the odd-root property: Problem type 1  
 alge778 Using  $i$  to rewrite square roots of negative numbers  
 alge779 Simplifying a product and quotient involving square roots of negative numbers  
 pcalc048 Adding or subtracting complex numbers  
 pcalc049 Multiplying complex numbers  
 pcalc050 Dividing complex numbers  
 pcalc053 Simplifying a power of  $i$   
 pcalc051 Solving a quadratic equation with complex roots

### Exponentials and Logarithms

alge108 Converting between logarithmic and exponential equations  
 pcalc799 Converting between natural logarithmic and exponential equations  
 alge232 Evaluating a logarithmic expression  
 pcalc708 Basic properties of logarithms  
 pcalc779 Expanding a logarithmic expression: Problem type 1  
 alge787 Writing an expression as a single logarithm  
 pcalc612 Change of base for logarithms: Problem type 1  
 pcalc613 Change of base for logarithms: Problem type 2  
 alge233 Solving an equation of the form  $\log_b a = c$   
 alge113 Solving an equation involving logarithms on both sides: Problem type 1  
 pcalc803 Solving a multi-step equation involving a single logarithm  
 pcalc804 Solving a multi-step equation involving natural logarithms  
 pcalc805 Solving an equation involving logarithms on both sides: Problem type 2  
 alge111 Solving an exponential equation by using logarithms: Exact answers in logarithmic form  
 alge112 Solving an exponential equation by finding common bases: Linear and quadratic exponents  
 alge789 Solving exponential equations by using logarithms and natural logarithms: Decimal answers  
 pcalc798 Evaluating an exponential function that models a real-world situation  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge178 Finding the time to reach a limit in a word problem on exponential growth or decay  
 pcalc614 Finding the initial or final amount in a word problem on exponential growth or decay  
 pcalc615 Finding the rate or time in a word problem on continuous exponential growth or decay  
 alge712 Graphing an exponential function and its asymptote:  $f(x) = a(b)^x$   
 pcalc797 The graph, domain, and range of an exponential function  
 pcalc103 Graphing an exponential function and its asymptote:  $f(x) = a(e)^{x-b} + c$   
 pcalc800 The graph, domain, and range of a logarithmic function  
 pcalc104 Graphing a logarithmic function: Advanced  
 pcalc102 Translating the graph of a logarithmic or exponential function

### Geometry

geom300 Perimeter of a square or a rectangle  
 geom019 Area of a square or a rectangle  
 geom340 Area of a piecewise rectangular figure  
 geom351 Areas of rectangles with the same perimeter  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom022 Area of a parallelogram  
 geom801 Area of a triangle  
 geom802 Circumference and area of a circle  
 geom218 Finding the radius or the diameter of a circle given its circumference

geom301 Perimeter involving rectangles and circles  
 geom838 Circumference ratios  
 geom302 Area involving rectangles and circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom311 Volume of a rectangular prism  
 geom035 Volume of a cylinder  
 geom086 Volume of a cone: Exact answers in terms of  $\pi$   
 geom841 Volume of a sphere  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom133 Ratio of volumes  
 geom031 Surface area of a cube or a rectangular prism  
 geom034 Surface area of a cylinder: Exact answers in terms of  $\pi$   
 geom037 Similar polygons  
 geom337 Indirect measurement  
 geom044 Pythagorean Theorem  
 alge132 Distance between two points in the plane: Exact answers  
 alge191 Midpoint of a line segment in the plane  
 pcalc605 Graphing a circle given its equation in standard form  
 pcalc064 Graphing a circle given its equation in general form  
 pcalc065 Writing an equation of a circle given its center and a point on the circle  
 pcalc066 Writing an equation of a circle given the endpoints of a diameter

### Trigonometry

pcalc002 Converting between degree and radian measure: Problem type 1  
 pcalc006 Sketching an angle in standard position  
 pcalc626 Reference angles: Problem type 1  
 pcalc622 Coterminal angles  
 pcalc005 Arc length and central angle measure  
 pcalc623 Area of a sector of a circle  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc008 Finding trigonometric ratios given a right triangle  
 pcalc642 Solving a right triangle  
 pcalc031 Solving a triangle with the law of sines: Problem type 1  
 pcalc033 Solving a triangle with the law of cosines  
 pcalc627 Finding coordinates on the unit circle for special angles  
 pcalc629 Trigonometric functions and special angles: Problem type 1  
 pcalc630 Trigonometric functions and special angles: Problem type 2  
 pcalc631 Trigonometric functions and special angles: Problem type 3  
 pcalc011 Finding values of trigonometric functions given information about an angle: Problem type 1  
 pcalc012 Finding values of trigonometric functions given information about an angle: Problem type 2  
 pcalc013 Finding values of trigonometric functions given information about an angle: Problem type 3  
 pcalc633 Amplitude and period of sine and cosine functions  
 pcalc634 Amplitude, period, and phase shift of sine and cosine functions  
 pcalc107 Sketching the graph of  $y = a \sin(x+c)$  or  $y = a \cos(x+c)$   
 pcalc106 Sketching the graph of  $y = a \sin(bx)$  or  $y = a \cos(bx)$   
 pcalc016 Values of inverse trigonometric functions  
 pcalc018 Composition of a trigonometric function with its inverse trigonometric function: Problem type 1  
 pcalc019 Composition of a trigonometric function with the inverse of another trigonometric function: Problem type 2  
 pcalc036 Composition of a trigonometric function with the inverse of another trigonometric function: Problem type 3  
 pcalc648 Simplifying trigonometric expressions  
 pcalc666 Using cofunction identities  
 pcalc029 Sum and difference identities: Problem type 1

pcalc663 Sum and difference identities: Problem type 2  
 pcalc030 Double-angle identities: Problem type 1  
 pcalc667 Double-angle identities: Problem type 2  
 pcalc124 Product-to-sum and sum-to-product identities: Problem type 1  
 pcalc650 Finding solutions in an interval for a basic equation involving sine or cosine  
 pcalc651 Finding solutions in an interval for a basic tangent, cotangent, secant, or cosecant equation  
 pcalc654 Finding solutions in an interval for a trigonometric equation using Pythagorean identities: Problem type 1  
 pcalc020 Solving a basic trigonometric equation involving sine or cosine  
 pcalc021 Solving a basic trigonometric equation involving tangent, cotangent, secant, or cosecant  
 pcalc055 Plotting a point in polar coordinates  
 pcalc056 Converting rectangular coordinates to polar coordinates: Special angles  
 pcalc057 Converting polar coordinates to rectangular coordinates  
 pcalc058 Converting an equation written in rectangular form to one written in polar form  
 pcalc059 Converting an equation written in polar form to one written in rectangular coordinates

### Limits and Continuity

pcalc901 Estimating a limit numerically  
 pcalc902 Finding limits from a graph  
 pcalc904 Finding limits for a piecewise-defined function  
 pcalc905 Finding a limit by using the limit laws: Problem type 1  
 pcalc906 Finding a limit by using the limit laws: Problem type 2  
 pcalc907 Finding a limit by using the limit laws: Problem type 3  
 pcalc911 Squeeze Theorem  
 pcalc903 Determining points of discontinuity from a graph  
 pcalc914 Determining a parameter to make a function continuous  
 pcalc910 Limits at infinity and graphs  
 pcalc908 Limits at infinity and rational functions  
 pcalc915 Infinite limits and graphs  
 pcalc909 Infinite limits and rational functions  
 pcalc913 Finding a limit of a trigonometric function by using continuity  
 pcalc912 Finding a limit by using special trigonometric limits

## B.81 Math Review for AP Physics

### Arithmetic

arith048 Order of operations with whole numbers  
 arith051 Order of operations with whole numbers and grouping symbols  
 arith108 Integer addition: Problem type 2  
 arith107 Integer subtraction  
 arith231 Integer multiplication and division  
 arith071 Absolute value of a number  
 arith104 Operations with absolute value: Problem type 2  
 arith212 Equivalent fractions  
 arith067 Simplifying a fraction  
 arith618 Addition or subtraction of fractions with the same denominator  
 arith230 Addition or subtraction of fractions with different denominators  
 arith116 Signed fraction addition or subtraction: Basic  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith086 Product of a fraction and a whole number: Problem type 1  
 arith119 Introduction to fraction multiplication  
 arith053 Fraction multiplication  
 arith105 Signed fraction multiplication: Advanced



arith022 Fraction division  
 arith015 Writing an improper fraction as a mixed number  
 arith619 Writing a mixed number as an improper fraction  
 arith220 Decimal place value: Hundreds to ten thousandths  
 arith078 Rounding to tens or hundreds  
 arith061 Rounding to thousands, ten thousands, or hundred thousands  
 arith221 Rounding decimals  
 arith082 Multiplication of a decimal by a power of ten  
 arith083 Division of a decimal by a power of ten  
 arith222 Converting a fraction to a terminating decimal  
 arith089 Converting a fraction to a repeating decimal  
 arith223 Converting a mixed number to a decimal  
 arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
 arith226 Converting between percentages and decimals  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith686 Writing a ratio as a percentage  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith225 Finding the percentage increase or decrease: Advanced  
 mstat001 Mean of a data set  
 arith101 Estimating a sum of whole numbers  
 arith102 Estimating a difference of whole numbers  
 arith604 Estimating a product or quotient of whole numbers  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced  
 mstat005 Constructing a bar graph for non-numerical data  
 mstat004 Constructing a histogram for numerical data

### Linear Equations and Applications

alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge607 Combining like terms: Integer coefficients  
 alge016 Translating a sentence into a one-step equation  
 alge602 Writing a one-step variable expression for a real-world situation  
 alge009 Additive property of equality with whole numbers  
 alge010 Additive property of equality with integers  
 alge266 Additive property of equality with a negative coefficient  
 alge008 Multiplicative property of equality with whole numbers  
 alge012 Multiplicative property of equality with signed fractions  
 alge006 Solving a two-step equation with integers  
 alge208 Solving a two-step equation with signed fractions  
 alge200 Solving an equation to find the value of an expression  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge103 Solving an absolute value equation of the form  $-ax+b = c$   
 alge167 Solving an absolute value equation of the form  $-ax+b = -cx+d$   
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers

alge218 Solving a word problem involving rates and time conversion  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 arith610 Word problem on proportions: Problem type 1  
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge175 Word problem on direct variation  
 alge176 Word problem on inverse variation

### Lines and Systems of Linear Equations

alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge197 Graphing a line given its x- and y-intercepts  
 alge198 Graphing a vertical or horizontal line  
 alge194 Graphing a line given its equation in slope-intercept form  
 alge195 Graphing a line given its equation in standard form  
 alge196 Graphing a line through a given point with a given slope  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 mstat007 Interpreting a line graph  
 alge734 Understanding distance and speed graphs  
 alge066 Finding a solution to a linear equation in two variables  
 alge069 Finding the y-intercept of a line given its equation  
 alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
 alge637 Determining the slope of a line given its graph  
 alge631 Finding the slope of a line given its equation  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge071 Writing the equation of a line given the slope and a point on the line  
 alge072 Writing the equation of the line through two given points  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 alge216 Determining whether given points lie on one, both, or neither of 2 lines given equations  
 alge725 Graphically solving a system of linear equations  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge079 Graphing a system of two linear inequalities: Basic

### Exponents and Radicals

arith047 Evaluating expressions with exponents: Problem type 1  
 arith049 Evaluating expressions with exponents: Problem type 2  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith029 Ordering numbers with positive exponents  
 arith024 Ordering numbers with negative exponents  
 alge024 Introduction to the product rule of exponents  
 alge030 Product rule with positive exponents: Multivariate  
 alge026 Quotient of expressions involving exponents  
 alge028 Product rule with negative exponents  
 alge027 Power rules with positive exponents  
 alge025 Power of a power rule with negative exponents  
 alge037 Greatest common factor of two multivariate monomials  
 alge004 Evaluating a quadratic expression: Integers  
 arith683 Power of 10: Positive exponent  
 arith036 Scientific notation with positive exponent  
 arith684 Power of 10: Negative exponent  
 arith037 Scientific notation with negative exponent

scinot002 Multiplying and dividing numbers written in scientific notation  
 scinot003 Finding powers of numbers written in scientific notation  
 scinot004 Order of magnitude estimation  
 alge663 Combining like terms: Advanced  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge032 Squaring a binomial: Univariate  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge705 Factoring a quadratic with leading coefficient 1  
 alge624 Factoring a difference of squares  
 alge038 Factoring a polynomial by grouping: Problem type 1  
 arith016 Square root of a perfect square  
 arith093 Simplifying the square root of a whole number less than 100  
 alge080 Simplifying a radical expression with an even exponent  
 alge084 Simplifying a sum or difference of radical expressions: Multivariate  
 arith039 Square root multiplication: Advanced  
 alge640 Simplifying a product of radical expressions: Multivariate  
 alge082 Simplifying a product of radical expressions: Multivariate, fractional expressions  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge086 Rationalizing the denominator of a radical expression  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases

### Quadratic, Rational and Exponential Expressions

alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge095 Applying the quadratic formula: Exact answers  
 alge214 Discriminant of a quadratic equation  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
 alge093 Solving an equation using the odd-root property: Problem type 1  
 alge049 Restriction on a variable in a denominator: Linear  
 alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge058 Complex fraction involving multivariate monomials  
 alge162 Complex fraction that contains a complex fraction  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge055 Least common multiple of two monomials  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge057 Adding rational expressions with different denominators:  $ax$ ,  $bx$   
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge622 Adding rational expressions with different denominators:  $x+a$ ,  $x+b$   
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 alge160 Algebraic symbol manipulation  
 alge252 Graphing a parabola of the form  $y = ax^2$   
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 pcalc070 Graphing an ellipse centered at the origin:  $Ax^2 + By^2 = C$   
 pcalc075 Graphing a hyperbola centered at the origin:  $Ax^2 - By^2 - C = 0$   
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge178 Finding the time to reach a limit in a word problem on exponential growth or decay  
 pcalc103 Graphing an exponential function and its asymptote:  $f(x) = a(e)^{x-b} + c$   
 alge108 Converting between logarithmic and exponential equations  
 alge232 Evaluating a logarithmic expression  
 pcalc708 Basic properties of logarithms  
 pcalc104 Graphing a logarithmic function: Advanced

**Geometry**

geom339 Perimeter of a polygon  
 geom300 Perimeter of a square or a rectangle  
 geom019 Area of a square or a rectangle  
 geom340 Area of a piecewise rectangular figure  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom801 Area of a triangle  
 geom022 Area of a parallelogram  
 geom016 Circumference of a circle  
 geom838 Circumference ratios  
 geom301 Perimeter involving rectangles and circles  
 geom802 Circumference and area of a circle  
 geom302 Area involving rectangles and circles  
 geom805 Arc length and area of a sector of a circle  
 geom031 Surface area of a cube or a rectangular prism  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom842 Surface area of a sphere  
 geom311 Volume of a rectangular prism  
 geom035 Volume of a cylinder  
 geom841 Volume of a sphere  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom133 Ratio of volumes  
 geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids  
 geom303 Acute, obtuse, and right angles  
 geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom039 Finding supplementary and complementary angles  
 geom500 Solving equations involving vertical angles and linear pairs  
 geom306 Acute, obtuse, and right triangles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom044 Pythagorean Theorem  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 alge132 Distance between two points in the plane: Exact answers  
 alge191 Midpoint of a line segment in the plane

**Trigonometry and Vectors**

pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc002 Converting between degree and radian measure: Problem type 1  
 pcalc006 Sketching an angle in standard position  
 pcalc603 Common angles and trigonometric functions  
 pcalc107 Sketching the graph of  $y = a \sin(x+c)$  or  $y = a \cos(x+c)$   
 pcalc106 Sketching the graph of  $y = a \sin(bx)$  or  $y = a \cos(bx)$   
 pcalc014 Sketching the graph of  $y = a \sin(bx+c)$  or  $y = a \cos(bx+c)$   
 pcalc739 Multiplication of a vector by a scalar: Geometric approach  
 geom857 Vector addition: Geometric approach  
 vector007 Vector subtraction: Geometric approach  
 pcalc061 Scalar multiplication of a vector: Algebraic approach  
 pcalc062 Addition and subtraction of vectors: Algebraic approach  
 vector008 Linear combination of vectors: Component form

pcalc063 Translation of a vector  
pcalc060 Magnitude of a vector given in component form  
vector002 Finding the magnitude and direction of a vector given its graph  
vector009 Dot product of vectors given in component form  
pcalc730 Finding the angle between two vectors given in component form  
vector010 Using the dot product to find perpendicular vectors  
vector005 Finding the components of a vector given its graph  
vector006 Finding the component of a vector along another vector  
vector011 Finding magnitudes of forces related to a sum of three vectors  
vector012 Finding magnitudes of forces related to an object suspended by cables

## B.82 Fundamentals of Accounting (Corp)

### Basic Terminology

acct001 Information classification into assets, liabilities, and change of equity  
acct002 Information classification into revenue, expense, or other  
acct003 Account classification into financial statements  
acct004 Information classification into financial statements  
acct007 Components of annual report

### Basic Transactions and Financial Statements

acct005 Effects of a transaction on assets, liabilities, and equity  
acct008 Balancing the basic accounting equation  
acct009 Changes to stockholders' equity: Problem type 1  
acct010 Changes to stockholders' equity: Problem type 2  
acct011 Completing a corporate balance sheet  
acct012 Completing an income statement  
acct013 Completing a retained earnings statement  
acct014 Effect of transactions on accounts  
acct301 Creating a basic income statement  
acct302 Creating a basic equity statement  
acct303 Creating a basic balance sheet  
acct304 Basic tabular transaction

### Journal Entries

acct016 Normal account balances  
acct017 Trial balance errors  
acct018 Basic journal entry with the step-through method  
acct019 Journalization of transactions  
acct020 Ending balances of accounts

### Adjusting Entries

acct021 Adjusting entry calculations  
acct022 Adjusting entries: Accruals  
acct023 Adjusting entries with deferrals: Problem type 1  
acct024 Adjusting entries with deferrals: Problem type 2

acctn025 Property, plant, and equipment section of a balance sheet: Basic problem  
acctn026 Effects of adjusting entries on financial statements: Problem type 1  
acctn027 Effects of adjusting entries on financial statements: Problem type 2

### Closing Process and Financial Statements

acctn028 Permanent and temporary accounts  
acctn029 Closing entries  
acctn030 Effects of closing entries on account balances  
acctn031 Correcting entries  
acctn032 Reversing entries: Selecting which entries should be reversed  
acctn033 Reversing entries: Preparing a reversing entry  
acctn034 Creating a balance sheet with asset depreciation  
acctn305 Balance sheet subtotals  
acctn307 Balance sheet classification

### Merchandising Accounting

acctn036 Normal account balances for a retail company  
acctn037 Account classification for a retail company  
acctn038 Parts of the retail income statement  
acctn039 Merchandising: Computing amount due  
acctn040 Merchandising: Computing income statement amounts  
acctn044 Merchandising: Closing entries  
acctn041 Seller's retail entries: Problem type 1  
acctn042 Seller's retail entries: Problem type 2  
acctn046 Seller's retail entries: Problem type 3  
acctn043 Buyer's retail entries: Problem type 1  
acctn045 Buyer's retail entries: Problem type 2  
acctn047 Buyer's retail entries: Problem type 3  
acctn048 Preparing a retail income statement

### Advanced Review Topics

acctn054 Cash and cash equivalents  
acctn078 Inventory costs  
acctn092 Income statement with periodic inventory: Problem type 2  
acctn095 Income statement with periodic inventory: Problem type 3  
acctn111 Scrapping an asset  
acctn112 Selling an asset  
acctn141 Revenue recognition: Basic questions

## B.83 Fundamentals of Accounting (Sole)

### Basic Terminology

acctn001 Information classification into assets, liabilities, and change of equity  
acctn002 Information classification into revenue, expense, or other  
acctn003 Account classification into financial statements  
acctn004 Information classification into financial statements  
acctn007 Components of annual report

**Basic Transactions and Financial Statements**

accnt005 Effects of a transaction on assets, liabilities, and equity  
accnt008 Balancing the basic accounting equation  
accnt009 Changes to owner's equity: Problem type 1  
accnt010 Changes to owner's equity: Problem type 2  
accnt011 Completing a sole proprietorship balance sheet  
accnt012 Completing an income statement  
accnt013 Completing an owner's equity statement  
accnt014 Effect of transactions on accounts  
accnt301 Creating a basic income statement  
accnt302 Creating a basic equity statement  
accnt303 Creating a basic balance sheet  
accnt304 Basic tabular transaction

**Journal Entries**

accnt016 Normal account balances  
accnt017 Trial balance errors  
accnt018 Basic journal entry with the step-through method  
accnt019 Journalization of transactions  
accnt020 Ending balances of accounts

**Adjusting Entries**

accnt021 Adjusting entry calculations  
accnt022 Adjusting entries: Accruals  
accnt023 Adjusting entries with deferrals: Problem type 1  
accnt024 Adjusting entries with deferrals: Problem type 2  
accnt025 Property, plant, and equipment section of a balance sheet: Basic problem  
accnt026 Effects of adjusting entries on financial statements: Problem type 1  
accnt027 Effects of adjusting entries on financial statements: Problem type 2

**Closing Process and Financial Statements**

accnt028 Permanent and temporary accounts  
accnt029 Closing entries  
accnt030 Effects of closing entries on account balances  
accnt031 Correcting entries  
accnt032 Reversing entries: Selecting which entries should be reversed  
accnt033 Reversing entries: Preparing a reversing entry  
accnt034 Creating a balance sheet with asset depreciation  
accnt305 Balance sheet subtotals  
accnt307 Balance sheet classification

**Merchandising Accounting**

accnt036 Normal account balances for a retail company  
accnt037 Account classification for a retail company  
accnt038 Parts of the retail income statement  
accnt039 Merchandising: Computing amount due



accnt040 Merchandising: Computing income statement amounts  
 accnt044 Merchandising: Closing entries  
 accnt041 Seller's retail entries: Problem type 1  
 accnt042 Seller's retail entries: Problem type 2  
 accnt046 Seller's retail entries: Problem type 3  
 accnt043 Buyer's retail entries: Problem type 1  
 accnt045 Buyer's retail entries: Problem type 2  
 accnt047 Buyer's retail entries: Problem type 3  
 accnt048 Preparing a retail income statement

### Advanced Review Topics

accnt054 Cash and cash equivalents  
 accnt078 Inventory costs  
 accnt092 Income statement with periodic inventory: Problem type 2  
 accnt095 Income statement with periodic inventory: Problem type 3  
 accnt111 Scrapping an asset  
 accnt112 Selling an asset  
 accnt141 Revenue recognition: Basic questions

## B.84 Business Math

### Mathematic Foundations

bmath094 Whole number place value  
 bmath122 Rounding whole numbers  
 bmath105 Adding whole numbers  
 bmath121 Subtracting whole numbers  
 bmath106 Multiplying whole numbers  
 bmath002 Dividing whole numbers  
 bmath003 Types of fractions and conversion procedures  
 bmath004 Reducing fractions to lowest terms  
 bmath005 Raising fractions to higher terms  
 bmath130 Adding and subtracting fractions with the same denominator  
 bmath006 Adding fractions with different denominators  
 bmath007 Subtracting fractions with different denominators  
 bmath008 Multiplying fractions  
 bmath009 Dividing fractions  
 bmath131 Adding mixed numbers  
 bmath132 Subtracting mixed numbers  
 bmath133 Multiplying mixed numbers  
 bmath134 Dividing mixed numbers  
 bmath123 Decimal place value  
 bmath010 Rounding decimals  
 bmath012 Adding decimals  
 bmath124 Subtracting decimals  
 bmath125 Multiplying decimals  
 bmath013 Dividing decimals  
 bmath011 Conversion from fraction to decimal  
 bmath126 Conversion from decimal to fraction  
 bmath016 Solving equations, basic  
 bmath141 Solving equations, advanced  
 bmath091 Mean and median  
 bmath092 Frequency and weighted mean  
 bmath142 Bar graphs

bmath143 Interpreting line graphs  
bmath144 Interpreting circle graphs

### Percents and Their Applications

bmath018 Converting decimals to percentages  
bmath116 Converting percentages to decimals  
bmath117 Converting percentages to fractions  
bmath113 Converting fractions to percentages  
bmath019 Portion formula: Solving for portion  
bmath114 Portion formula: Solving for rate  
bmath115 Portion formula: Solving for base  
bmath020 Calculating percent decreases and increases  
bmath021 Single trade discounts and net price  
bmath022 Chain discounts: Net price equivalent rate  
bmath023 Chain discounts: Single equivalent discount rate  
bmath024 Cash discount: Basic calculation  
bmath096 Cash discount: Ordinary and receipt of goods dating methods  
bmath112 Cash discount: EOM dating method  
bmath097 Invoices, trade discounts, and cash discounts  
bmath025 Markup based on cost or selling price  
bmath001 Markup based on cost: Finding the selling price  
bmath027 Markup based on cost: Finding the cost  
bmath107 Markup based on selling price: Finding the selling price  
bmath108 Markup based on selling price: Finding the cost  
bmath029 Markdown  
bmath030 Hourly gross pay with overtime  
bmath031 Gross pay with straight commission and draw  
bmath032 Gross pay with variable commission scale  
bmath033 Gross pay with commission and salary  
bmath034 FICA with no ceiling  
bmath119 FICA with ceiling  
bmath035 Calculating federal income tax withholding  
bmath036 Employer tax responsibilities  
bmath120 FICA, federal tax withholding, and net pay  
bmath075 Sales taxes  
bmath129 Actual sales before taxes  
bmath076 Excise taxes  
bmath077 Property tax

### Interest

bmath037 Simple interest and maturity value  
bmath038 Exact and ordinary methods for simple interest and maturity value  
bmath039 Solving for principal, rate, or time in simple interest problems  
bmath101 The U. S. Rule: Making partial note payments before due date  
bmath040 Structure of promissory notes: Effective interest rate and simple discount note  
bmath110 Discounting an interest-bearing note before maturity  
bmath109 Computing compound interest with the simple interest formula  
bmath042 Compound interest for daily compounding  
bmath041 Compound interest for annual, semiannual, and quarterly compounding  
bmath102 Nominal interest rate versus annual percentage yield  
bmath043 Present value tables  
bmath044 Ordinary annuity  
bmath045 Annuity due  
bmath046 Present value of an ordinary annuity  
bmath047 Sinking funds  
bmath048 Amount financed, finance charge, and deferred payment

bmath049 Cost of installment buying: Computing the APR  
bmath050 Cost of installment buying: Computing the monthly payment  
bmath051 Paying off installment loans before due date  
bmath052 Revolving charge credit cards

### Personal Finance

bmath095 Checking accounts  
bmath128 Bank statement and reconciliation process: Basic  
bmath015 Bank statement and reconciliation process: Advanced  
bmath053 Monthly mortgage payment tables  
bmath054 Total cost of interest for a mortgage  
bmath055 Amortization schedule: Interest, principal, and new mortgage balance  
bmath078 Life insurance premiums  
bmath079 Insurance nonforfeiture values  
bmath080 Fire insurance premiums  
bmath140 Canceling fire insurance  
bmath081 Compulsory auto insurance  
bmath082 Optional auto insurance  
bmath083 Reading stock quotations  
bmath085 Calculating return on stock investment  
bmath139 Stock yield, earnings per share, and price-earnings ratio  
bmath084 Stock dividends  
bmath086 Reading bond quotations  
bmath087 Calculating bond yields  
bmath088 Net asset value of a mutual fund  
bmath090 Investment in a mutual fund

### Business Finance

bmath056 Balance sheet: Merchandising  
bmath135 Balance sheet: Service  
bmath057 Vertical analysis of a balance sheet  
bmath058 Income statement: Merchandising  
bmath136 Income statement: Service  
bmath059 Vertical analysis of an income statement  
bmath138 Horizontal analysis of financial statements  
bmath060 Financial projections  
bmath061 Financial ratio analysis  
bmath062 Straight-line depreciation: Full year  
bmath127 Straight-line depreciation: Partial year  
bmath063 Units-of-production depreciation  
bmath064 Sum-of-the-years'-digits depreciation  
bmath065 Declining-balance depreciation  
bmath066 Modified accelerated cost recovery system  
bmath067 Inventory: Specific identification  
bmath068 Inventory: Weighted-average cost method  
bmath069 Inventory: FIFO  
bmath070 Inventory: LIFO  
bmath071 Retail method of inventory  
bmath072 Gross profit method of inventory  
bmath073 Inventory turnover  
bmath074 Distribution of overhead

## B.85 QuickTables

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arith001 Addition without carry  
arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
arith003 Multiplication without carry  
arith004 Multiplication with carry

## B.86 CC Math 6

### Whole Numbers

arith124 Whole number place value: Problem type 1  
arith125 Whole number place value: Problem type 2  
arith066 Expanded form  
arith643 Expanded form with zeros  
arith028 Numeral translation: Problem type 1  
arith060 Numeral translation: Problem type 2  
arith633 One-digit addition with carry  
arith634 Addition of 3 or 4 one-digit numbers  
arith001 Addition without carry  
arith635 Adding a 2-digit number and a 1-digit number with carry  
arith050 Addition with carry  
arith630 Addition with carry to the hundreds place  
arith012 Addition of large numbers  
arith636 Subtracting a 1-digit number from a 2-digit number  
arith007 Subtraction without borrowing  
arith006 Subtraction with borrowing  
arith682 Subtraction with multiple regrouping steps  
arith637 Subtraction and regrouping with zeros  
arith653 Fact families for addition and subtraction  
arith613 Word problem with addition or subtraction of whole numbers  
mstat061 Describing an increasing or decreasing pattern from a table of values  
arith126 Multiplication as repeated addition  
arith008 One-digit multiplication  
arith639 Using multiplication to find the number of squares  
arith679 Multiplication by 10, 100, and 1000  
arith003 Multiplication without carry  
arith004 Multiplication with carry  
arith632 Multiplication with trailing zeros: Problem type 1  
arith615 Introduction to multiplication of large numbers  
arith675 Understanding multiplication of a one-digit number with a larger number  
arith638 Multiplication with trailing zeros: Problem type 2  
arith014 Multiplication of large numbers  
arith641 Multiples: Problem type 1  
arith642 Multiples: Problem type 2  
arith075 Division facts  
arith654 Fact families for multiplication and division  
arith614 Word problem with multiplication or division of whole numbers  
arith130 Word problem with multiplication and addition or subtraction of whole numbers  
arith451 Word problem on unit rates associated with ratios of whole numbers: Whole number answers  
arith243 Division of whole numbers given in fractional form  
arith711 Division involving zero  
arith052 Division without carry  
arith005 Division with carry

arith901 Whole number division: 2-digit by 2-digit, no remainder  
arith902 Whole number division: 3-digit by 2-digit, no remainder  
arith680 Division with trailing zeros: Problem type 1  
arith649 Division with trailing zeros: Problem type 2  
arith616 Quotient and remainder: Problem type 1  
arith644 Word problem on quotient and remainder  
arith617 Quotient and remainder: Problem type 2  
arith631 Quotient and remainder: Problem type 3  
arith650 Division involving quotients with intermediate zeros  
arith023 Word problem with division of whole numbers and rounding  
arith651 Introduction to inequalities  
arith652 Comparing a numerical expression with a number  
arith077 Ordering large numbers  
arith078 Rounding to tens or hundreds  
arith123 Rounding to hundreds or thousands  
arith061 Rounding to thousands, ten thousands, or hundred thousands  
arith101 Estimating a sum of whole numbers  
arith102 Estimating a difference of whole numbers  
arith677 Estimating a product  
arith678 Estimating a quotient  
arith692 Writing expressions using exponents  
arith233 Introduction to exponents  
arith683 Power of 10: Positive exponent  
arith645 Introduction to parentheses  
arith865 Comparing numerical expressions with parentheses  
arith681 Introduction to order of operations  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
arith646 Even and odd numbers  
arith647 Divisibility rules for 2, 5, and 10  
arith648 Divisibility rules for 3 and 9  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith516 Greatest common factor of 3 numbers  
arith409 Introduction to the distributive property  
arith657 Understanding the distributive property  
arith410 Introduction to factoring with numbers  
arith411 Factoring a sum or difference of whole numbers  
arith070 Least common multiple of 2 numbers  
arith804 Least common multiple of 3 numbers  
arith418 Word problem involving the least common multiple of 2 numbers  
arith240 Word problem with common multiples  
alge284 Evaluating an algebraic expression: Whole number addition or subtraction  
alge683 Evaluating an algebraic expression: Whole number multiplication or division  
alge285 Evaluating an algebraic expression: Whole numbers with two operations  
alge649 Evaluating a formula  
alge648 Evaluating an algebraic expression: Whole numbers with one operation and an exponent  
alge832 Evaluating an algebraic expression: Whole number operations and exponents  
alge733 Writing a one-step expression for a real-world situation  
alge831 Translating a phrase into a one-step expression  
alge291 Translating a phrase into a two-step expression  
alge650 Identifying solutions to a one-step linear equation: Problem type 1  
alge651 Identifying solutions to a one-step linear equation: Problem type 2  
alge009 Additive property of equality with whole numbers  
alge813 Introduction to solving an equation with multiplication or division  
alge008 Multiplicative property of equality with whole numbers  
alge016 Translating a sentence into a one-step equation  
geom339 Perimeter of a polygon

geom300 Perimeter of a square or a rectangle  
geom019 Area of a square or a rectangle  
geom866 Perimeter and area on a grid

## Decimals

arith110 Decimal place value: Tenths and hundredths  
arith220 Decimal place value: Hundreds to ten thousandths  
arith714 Writing a decimal number less than 1 given its name  
arith715 Writing a decimal number greater than 1 given its name  
arith716 Writing a decimal number given its name: Advanced  
arith829 Reading decimal position on a number line: Tenths  
arith830 Reading decimal position on a number line: Hundredths  
arith831 Understanding decimal position on a number line using zoom: Hundredths  
arith832 Understanding decimal position on a number line using zoom: Thousandths  
arith129 Introduction to ordering decimals  
arith608 Ordering decimals  
arith221 Rounding decimals  
arith624 Addition of aligned decimals  
arith013 Decimal addition with 3 numbers  
arith734 Subtraction of aligned decimals  
arith735 Decimal subtraction: Basic  
arith736 Decimal subtraction: Advanced  
arith737 Decimal addition and subtraction with 3 or more numbers  
arith131 Estimating a decimal sum or difference  
arith668 Addition with money  
arith669 Subtraction with money  
arith132 Word problem with addition or subtraction of 2 decimals  
arith133 Word problem with addition of 3 or 4 decimals and whole numbers  
arith134 Word problem with subtraction of a whole number and a decimal: Regrouping with zeros  
arith739 Introduction to decimal multiplication  
arith017 Multiplication of a decimal by a whole number  
arith055 Decimal multiplication: Problem type 1  
arith046 Decimal multiplication: Problem type 2  
arith082 Multiplication of a decimal by a power of ten  
arith738 Multiplication of a decimal by a power of 0.1  
arith740 Multiplication of decimals that have a product less than 0.1  
arith752 Estimating a product of decimals  
arith135 Word problem with multiplication of a decimal and a whole number  
arith137 Word problem with multiplication of two decimals  
arith628 Word problem with multiple decimal operations: Problem type 1  
arith744 Whole number division with decimal answers  
arith081 Division of a decimal by a whole number  
arith743 Division of a decimal by a 1-digit decimal  
arith019 Division of a decimal by a 2-digit decimal  
arith083 Division of a decimal by a power of ten  
arith742 Division of a decimal by a power of 0.1  
arith745 Decimal division with rounding  
arith136 Word problem with division of a decimal and a whole number  
arith138 Word problem with division of two decimals  
arith629 Word problem with multiple decimal operations: Problem type 2  
arith103 Average of two numbers  
arith753 Squaring decimal bases: Products greater than 0.1  
arith741 Exponents and decimals: Products less than 0.1  
arith720 Order of operations with decimals: Problem type 1  
arith746 Order of operations with decimals: Problem type 2  
arith747 Order of operations with decimals: Problem type 3  
scinot023 Introduction to scientific notation with positive exponents  
arith036 Scientific notation with positive exponent

**Fractions**

arith623 Introduction to fractions  
arith665 Understanding equivalent fractions  
arith212 Equivalent fractions  
arith666 Introduction to simplifying a fraction  
arith067 Simplifying a fraction  
arith687 Fractional position on a number line  
arith667 Plotting fractions on a number line  
arith044 Ordering fractions with the same denominator  
arith091 Ordering fractions with the same numerator  
arith092 Using a common denominator to order fractions  
arith079 Product of a unit fraction and a whole number  
arith086 Product of a fraction and a whole number: Problem type 1  
arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith812 Product of a fraction and a whole number: Problem type 2  
arith905 Determining if a quantity is increased or decreased when multiplied by a fraction  
arith509 Modeling multiplication of proper fractions  
arith813 Multiplication of 3 fractions  
arith818 Word problem involving fractions and multiplication  
arith095 Multi-step word problem involving fractions and multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith507 Fact families for multiplication and division of fractions  
arith508 Modeling division of a whole number by a fraction  
arith819 Word problem involving fractions and division  
arith618 Addition or subtraction of fractions with the same denominator  
arith802 Addition or subtraction of fractions with the same denominator and simplification  
arith801 Finding the LCD of two fractions  
arith109 Addition or subtraction of unit fractions  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
arith803 Addition and subtraction of 3 fractions with different denominators  
arith805 Word problem involving addition or subtraction of fractions with different denominators  
arith100 Fractional part of a circle  
arith662 Writing a mixed number and an improper fraction for a shaded region  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith215 Addition or subtraction of mixed numbers with the same denominator  
arith084 Addition of mixed numbers with the same denominator and carry  
arith216 Subtraction of mixed numbers with the same denominator and borrowing  
arith806 Addition or subtraction of mixed numbers with different denominators and no carry or borrow  
arith808 Addition of mixed numbers with different denominators and carry  
arith809 Subtraction of mixed numbers with different denominators and borrowing  
arith807 Addition and subtraction of 3 mixed numbers with different denominators  
arith810 Word problem involving addition or subtraction of mixed numbers with different denominators  
arith815 Mixed number multiplication  
arith816 Multiplication of a mixed number and a whole number  
arith817 Division with a mixed number and a whole number  
arith068 Mixed number division  
arith820 Word problem involving multiplication or division with mixed numbers  
arith127 Writing a decimal and a fraction for a shaded region  
arith725 Converting a fraction with a denominator of 10 or 100 to a decimal  
arith726 Converting a fraction with a denominator of 100 or 1000 to a decimal  
arith113 Converting a proper fraction with a denominator of 2, 4, or 5 to a decimal  
arith114 Converting a mixed number with a denominator of 2, 4, or 5 to a decimal  
arith727 Converting a fraction to a terminating decimal: Basic  
arith728 Converting a fraction to a terminating decimal: Advanced  
arith730 Converting a fraction to a repeating decimal: Basic  
arith731 Converting a fraction to a repeating decimal: Advanced



arith733 Using a calculator to convert a fraction to a rounded decimal  
 arith111 Converting a mixed number to a terminating decimal: Basic  
 arith112 Converting a mixed number to a terminating decimal: Advanced  
 arith732 Converting a fraction or mixed number to a rounded decimal  
 arith609 Ordering fractions and decimals  
 arith717 Converting a decimal to a proper fraction without simplifying: Basic  
 arith719 Converting a decimal to a proper fraction without simplifying: Advanced  
 arith718 Converting a decimal to a proper fraction in simplest form: Basic  
 arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
 arith721 Converting a decimal to a mixed number and an improper fraction without simplifying  
 arith722 Converting a decimal to a mixed number and an improper fraction in simplest form: Basic  
 arith724 Converting a decimal to a mixed number and an improper fraction in simplest form: Advanced  
 arith513 Identifying rational decimal numbers  
 arith821 Exponents and fractions  
 arith859 Order of operations with fractions: Problem type 1  
 arith860 Order of operations with fractions: Problem type 2  
 arith861 Order of operations with fractions: Problem type 3  
 arith695 Complex fraction without variables: Problem type 1  
 arith748 Addition or subtraction with a decimal and a mixed number  
 arith749 Multiplication with a decimal and a fraction

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arith823 Writing ratios using different notations  
 arith663 Writing ratios for real-world situations  
 arith450 Identifying statements that describe a ratio  
 arith824 Simplifying a ratio of whole numbers: Problem type 1  
 arith825 Simplifying a ratio of decimals  
 arith827 Finding a unit price  
 arith455 Using tables to compare ratios  
 arith828 Computing unit prices to find the better buy  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 arith064 Solving a word problem on proportions using a unit rate  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 alge281 Function tables with one-step rules  
 arith452 Finding missing values in a table of equivalent ratios  
 arith453 Using a table of equivalent ratios to find a missing quantity in a ratio  
 arith504 Writing an equation to represent a proportional relationship  
 alge819 Solving a proportion of the form  $x/a=b/c$ : Basic  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 arith045 Word problem with powers of ten  
 geom359 Identifying congruent shapes on a grid  
 geom360 Identifying similar or congruent shapes on a grid  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom538 Finding lengths using scale models  
 geom539 Finding a scale factor: Same units  
 geom541 Using a scale drawing to find actual area  
 geom542 Reproducing a scale drawing at a different scale  
 mstat058 Choosing a measuring tool  
 mstat059 Choosing U.S. Customary measurement units  
 mstat033 Measuring length to the nearest inch  
 mstat034 Measuring length to the nearest quarter or half inch  
 unit005 U.S. Customary unit conversion with whole number values  
 mstat035 Conversions involving measurements in feet and inches  
 mstat036 Adding measurements in feet and inches  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion

unit007 U.S. Customary unit conversion with mixed number values: One-step conversion  
 unit008 U.S. Customary unit conversion with mixed number values: Two-step conversion  
 unit009 U.S. Customary area unit conversion with whole number values  
 mstat060 Choosing metric measurement units  
 mstat063 Measuring length to the nearest centimeter  
 mstat064 Measuring length to the nearest millimeter  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit012 Time unit conversion with whole number values  
 time009 Introduction to adding time  
 time006 Adding time  
 time011 Introduction to elapsed time  
 time007 Elapsed time  
 mstat062 Reading a positive temperature from a thermometer  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 arith826 Simplifying a ratio of whole numbers: Problem type 2  
 alge218 Solving a word problem involving rates and time conversion  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced

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arith836 Converting a fraction with a denominator of 100 to a percentage  
 arith837 Converting a percentage to a fraction with a denominator of 100  
 arith674 Finding the percentage of a grid that is shaded  
 arith903 Representing benchmark percentages on a grid  
 arith723 Introduction to converting a percentage to a decimal  
 arith833 Introduction to converting a decimal to a percentage  
 arith834 Converting between percentages and decimals  
 arith841 Converting a mixed number percentage to a decimal  
 arith835 Converting between percentages and decimals in a real-world situation  
 arith090 Converting a percentage to a fraction in simplest form  
 arith839 Converting a decimal percentage to a fraction  
 arith838 Converting a fraction to a percentage: Denominator of 4, 5, or 10  
 arith904 Finding benchmark fractions and percentages for a figure  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith843 Using a calculator to convert a fraction to a rounded percentage  
 arith842 Converting a fraction to a percentage in a real-world situation  
 arith840 Finding a percentage of a whole number  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith844 Finding a percentage of a whole number without a calculator: Advanced  
 arith862 Applying the percent equation: Problem type 1  
 arith863 Applying the percent equation: Problem type 2  
 arith845 Finding a percentage of a total amount: Real-world situations  
 arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount  
 arith857 Estimating a tip without a calculator  
 arith069 Writing a ratio as a percentage without a calculator  
 arith850 Finding the rate of a tax or commission  
 arith849 Finding the total amount given the percentage of a partial amount  
 stat805 Making a reasonable inference based on proportion statistics  
 stat804 Interpreting a circle graph or pie chart  
 arith856 Finding a percentage of a total amount in a circle graph  
 stat801 Computations from a circle graph  
 arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
 arith851 Finding the final amount given the original amount and a percentage increase or decrease  
 arith847 Finding the sale price given the original price and percent discount

arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith848 Finding the total cost including tax or markup  
 arith855 Finding the original amount given the result of a percentage increase or decrease  
 arith031 Finding the original price given the sale price and percent discount  
 arith858 Finding the percentage increase or decrease: Basic  
 arith225 Finding the percentage increase or decrease: Advanced  
 arith232 Finding simple interest without a calculator  
 arith918 Comparing discounts  
 arith914 Calculations involving paying for college  
 arith916 Computing percentages for categories of a budget  
 arith921 Comparing annual salaries of different occupations  
 arith911 Calculations involving purchases with debit and credit cards  
 arith950 Comparing costs of checking accounts  
 arith951 Balancing a check register  
 arith912 Reading a credit report  
 arith913 Understanding the impact of a credit score

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alge286 Plotting integers on a number line  
 mstat038 Reading the temperature from a thermometer  
 arith691 Ordering integers  
 arith415 Using a number line to compare integers  
 arith699 Writing a signed number for a real-world situation  
 arith400 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 1  
 arith511 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 2  
 arith416 Comparing signed numbers relating to a real-world situation  
 arith402 Plotting opposite integers on a number line  
 arith403 Finding opposites of integers  
 arith071 Absolute value of a number  
 arith412 Finding all numbers with a given absolute value  
 arith605 Plotting rational numbers on a number line  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith431 Identifying a sum as a point located a given distance from another point  
 arith430 Identifying relative change when combining two quantities  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith754 Addition and subtraction with 3 integers  
 arith755 Addition and subtraction with 4 or 5 integers  
 arith440 Operations with absolute value: Problem type 1  
 arith104 Operations with absolute value: Problem type 2  
 alge694 Computing the distance between two integers on a number line  
 arith433 Computing and understanding distances between integers on a number line  
 arith701 Word problem with addition or subtraction of integers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers  
 arith952 Word problem with multiplication or division of integers  
 arith702 Exponents and integers: Problem type 1  
 arith118 Order of operations with integers  
 arith600 Order of operations with integers and exponents  
 alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 scinot024 Introduction to scientific notation with negative exponents  
 arith037 Scientific notation with negative exponent  
 scinot012 Converting between scientific notation and standard form in a real-world situation  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 arith750 Signed decimal multiplication

arith751 Signed decimal division  
 alge660 Identifying equivalent signed fractions  
 arith822 Signed fraction multiplication: Basic  
 arith105 Signed fraction multiplication: Advanced  
 arith814 Signed fraction division  
 arith116 Signed fraction addition or subtraction: Basic  
 arith864 Signed fraction subtraction involving double negation  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith811 Addition and subtraction of 3 fractions involving signs  
 geom525 Computing distances between decimals on the number line  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
 alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
 alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
 alge001 Identifying numbers as integers or non-integers  
 alge647 Identifying like terms  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 arith655 Introduction to properties of addition  
 alge187 Properties of addition  
 alge665 Combining like terms: Decimal coefficients  
 alge666 Combining like terms: Fractional coefficients  
 alge310 Multiplying a constant and a linear monomial  
 alge606 Distributive property: Whole number coefficients  
 alge610 Distributive property: Fractional coefficients  
 alge605 Factoring a linear binomial  
 alge612 Identifying parts in an algebraic expression  
 alge613 Identifying equivalent algebraic expressions  
 arith656 Introduction to properties of multiplication  
 alge188 Properties of real numbers  
 alge608 Using distribution and combining like terms to simplify: Univariate  
 alge667 Identifying properties used to simplify an algebraic expression

### Equations and Inequalities

alge800 Additive property of equality with decimals  
 alge801 Additive property of equality with fractions and mixed numbers  
 alge010 Additive property of equality with integers  
 alge836 Additive property of equality with signed fractions  
 alge825 Multiplicative property of equality with decimals  
 alge646 Multiplicative property of equality with whole numbers: Fractional answers  
 alge820 Multiplicative property of equality with fractions  
 alge797 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge803 Using two steps to solve an equation with whole numbers  
 alge266 Additive property of equality with a negative coefficient  
 alge006 Solving a two-step equation with integers  
 alge920 Introduction to solving an equation with parentheses  
 alge837 Solving a multi-step equation given in fractional form  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge611 Introduction to solving a linear equation with a variable on each side  
 alge658 Introduction to solving a rational equation  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge671 Choosing stories that can be represented by given one-step equations  
 alge841 Translating a sentence into a multi-step equation  
 alge628 Writing an equation of the form  $Ax + B = C$  to solve a word problem  
 alge618 Comparing arithmetic and algebraic solutions to a word problem

alge672 Choosing stories that can be represented by given two-step equations  
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
 alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
 alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge653 Introduction to identifying solutions to an inequality  
 alge748 Writing an inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge166 Graphing a compound inequality on the number line  
 alge652 Identifying solutions to a one-step linear inequality  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge809 Multiplicative property of inequality with whole numbers  
 alge854 Multiplicative property of inequality with integers  
 alge636 Solving a two-step linear inequality with whole numbers  
 alge846 Translating a sentence into a multi-step inequality  
 alge621 Solving a word problem using a one-step linear inequality  
 alge623 Solving a word problem using a two-step linear inequality

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alge278 Reading a point in quadrant 1  
 alge279 Plotting a point in quadrant 1  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge692 Plotting a point in quadrant 1: Mixed number coordinates  
 alge693 Plotting a point in the coordinate plane: Mixed number coordinates  
 arith404 Naming the quadrant or axis of a point given its graph  
 arith405 Naming the quadrant or axis of a point given its coordinates  
 arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
 alge695 Finding distances between points that share a common coordinate given the graph  
 alge696 Finding distances between points that share a common coordinate given their coordinates  
 arith454 Making a table and plotting points given a unit rate  
 alge283 Graphing whole number functions  
 alge282 Function tables with two-step rules  
 alge850 Table for a linear equation  
 fun001 Table for a linear function  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 alge280 Graphing a line in quadrant 1  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
 mstat007 Interpreting a line graph  
 geom358 Identifying parallel and perpendicular lines  
 geom536 Drawing and identifying a polygon in the coordinate plane  
 alge575 Finding slope given the graph of a line in quadrant 1 that models a real-world situation  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines  
 alge630 Finding outputs of a one-step function that models a real-world situation: Two variable equation  
 alge632 Finding outputs of a two-step function with decimals that models a real-world situation: Two variable equation

alge633 Finding inputs and outputs of a two-step function that models a real-world situation: Two variable equation  
 alge655 Writing and evaluating a function that models a real-world situation: Basic  
 alge897 Writing and evaluating a function that models a real-world situation: Advanced  
 alge654 Graphing ordered pairs and writing an equation from a table of values in context  
 alge656 Writing an equation and drawing its graph to model a real-world situation: Basic  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge818 Finding the initial amount and rate of change given a graph of a linear function  
 alge670 Identifying independent and dependent quantities from tables and graphs  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 mstat018 Choosing a graph to fit a narrative: Basic  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge263 Interpreting the graphs of two functions  
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge732 Finding patterns in shapes  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio

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geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom551 Finding the complement or supplement of an angle given a figure  
 geom305 Identifying supplementary and vertical angles  
 geom553 Finding angle measures given two intersecting lines  
 geom304 Identifying corresponding and alternate angles  
 geom349 Naming segments, rays, and lines  
 geom554 Finding angle measures given two parallel lines cut by a transversal  
 geom154 Constructing the perpendicular bisector of a line segment  
 geom158 Constructing an angle bisector  
 geom159 Constructing congruent angles  
 geom150 Constructing a pair of perpendicular lines  
 geom157 Constructing a pair of parallel lines  
 geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom519 Identifying and naming congruent parts of congruent triangles  
 geom543 Drawing a circle with a given radius or diameter  
 geom544 Creating triangles from given side lengths: Problem type 1  
 geom634 Creating triangles from given side lengths: Problem type 2  
 geom844 Using triangle inequality to determine if side lengths form a triangle  
 geom548 Determining if a triangle is possible based on given angle measures  
 geom546 Drawing triangles with given conditions: Angle measures  
 geom547 Drawing triangles with given conditions: Side lengths and angle measures  
 geom545 Drawing triangles with given side lengths using a compass  
 geom361 Naming polygons  
 mstat042 Interpreting a Venn diagram of 2 sets  
 geom867 Identifying parallelograms, rectangles, and squares  
 geom310 Properties of quadrilaterals

geom532 Classifying parallelograms  
 geom818 Finding the coordinates of a point to make a parallelogram  
 geom870 Sum of the angle measures of a quadrilateral  
 geom852 The sum of interior angle measures in a convex polygon  
 arith016 Square root of a perfect square  
 alge413 Finding all square roots of a number  
 arith763 Using a calculator to approximate a square root  
 arith602 Estimating a square root  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem  
 geom603 Identifying side lengths that give right triangles

### Transformations

geom357 Identifying transformations  
 geom355 Introduction to translations  
 geom596 Translating a point and giving its coordinates: One step  
 geom909 Translating a point and giving its coordinates: Two steps  
 geom597 Properties of translated figures  
 geom598 Determining if figures are related by a translation  
 geom330 Translating a polygon  
 geom356 Introduction to reflections  
 arith408 Reflecting a point across an axis  
 geom533 Reflecting a point across both coordinate axes  
 geom590 Reflecting a point across an axis and giving its coordinates  
 arith407 Finding the coordinates of a point reflected across an axis  
 geom560 Finding the coordinates of a point reflected across both axes  
 geom534 Reflecting a polygon across the x-axis or y-axis  
 geom591 Properties of reflected figures  
 geom592 Determining if figures are related by a reflection  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom334 Drawing lines of symmetry  
 geom602 Finding the coordinates of a point reflected across an axis and translated  
 geom815 Finding an angle of rotation  
 geom624 Identifying rotational symmetry and angles of rotation  
 geom593 Rotating a point and giving its coordinates  
 geom594 Properties of rotated figures  
 geom595 Determining if figures are related by a rotation  
 geom335 Rotating a figure about the origin  
 geom580 Determining if figures are congruent and related by a transformation  
 geom606 Dilating a segment and giving the coordinates of its endpoints  
 geom607 The effect of dilation on side length  
 geom608 Determining if figures are related by a dilation  
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geom618 Perimeter of a polygon involving mixed numbers and fractions  
 geom078 Sides of polygons having the same perimeter  
 geom221 Finding the missing length in a figure  
 geom353 Perimeter of a piecewise rectangular figure  
 alge615 Writing algebraic expressions for the perimeter of a figure  
 geom620 Area of a rectangle involving fractions  
 geom619 Area of a rectangle involving mixed numbers and fractions  
 geom350 Distinguishing between the area and perimeter of a rectangle  
 geom351 Areas of rectangles with the same perimeter  
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alge616 Writing algebraic expressions for the area of a figure  
geom410 Word problem involving the area of a square or a rectangle  
geom217 Finding the side length of a rectangle given its perimeter or area  
geom340 Area of a piecewise rectangular figure  
geom562 Area between two rectangles  
geom142 Word problem involving the area between two rectangles  
geom501 Finding the area of a right triangle on a grid  
geom509 Finding the area of a right triangle or its corresponding rectangle  
geom801 Area of a triangle  
geom517 Finding the area of a trapezoid on a grid by using triangles and rectangles  
geom344 Area involving rectangles and triangles  
geom022 Area of a parallelogram  
geom023 Area of a trapezoid  
geom537 Finding the perimeter or area of a rectangle in the coordinate plane  
geom832 Area of quadrilaterals in the coordinate plane  
geom347 Introduction to a circle: Diameter, radius, and chord  
geom016 Circumference of a circle  
geom218 Finding the radius or the diameter of a circle given its circumference  
geom838 Circumference ratios  
geom301 Perimeter involving rectangles and circles  
geom026 Area of a circle  
geom802 Circumference and area of a circle  
geom570 Distinguishing between the area and circumference of a circle  
geom302 Area involving rectangles and circles  
geom563 Area between two concentric circles  
geom036 Word problem involving the area between two concentric circles  
geom214 Area involving inscribed figures  
geom868 Classifying solids  
geom348 Vertices, edges, and faces of a solid  
geom830 Counting the cubes in a solid made of cubes  
geom816 Side views of a solid made of cubes  
geom550 Identifying horizontal and vertical cross sections of solids  
geom311 Volume of a rectangular prism  
geom354 Volume of a rectangular prism made of unit cubes  
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geom535 Volume of a rectangular prism with fractional edge lengths  
alge617 Writing equivalent expressions for the volume of a rectangular prism  
geom571 Word problem involving the volume of a rectangular prism  
geom558 Word problem involving the rate of filling or emptying a rectangular prism  
geom505 Volume of a piecewise rectangular prism  
geom090 Volume of a triangular prism  
geom572 Word problem involving the volume of a triangular prism  
geom033 Volume of a pyramid  
geom637 Relating the volumes of a rectangular prism and a rectangular pyramid  
geom638 Relating the volumes of a triangular prism and a triangular pyramid  
geom035 Volume of a cylinder  
geom573 Word problem involving the volume of a cylinder  
geom092 Word problem involving the rate of filling or emptying a cylinder  
geom622 Volume of a cone  
geom086 Volume of a cone: Exact answers in terms of pi  
geom639 Relating the volumes of a cylinder and a cone  
geom575 Word problem involving the volume of a cone  
geom219 Nets of solids  
geom031 Surface area of a cube or a rectangular prism  
geom632 Surface area of a rectangular prism made of unit cubes  
geom555 Distinguishing between surface area and volume  
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geom576 Word problem involving the surface area of a rectangular prism  
geom345 Surface area of a piecewise rectangular prism made of unit cubes  
geom091 Surface area of a triangular prism  
geom557 Using a net to find the surface area of a triangular prism  
geom621 Surface area of a cylinder

geom034 Surface area of a cylinder: Exact answers in terms of  $\pi$   
 geom578 Word problem involving the surface area of a cylinder

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mstat088 Identifying statistical questions  
 mstat080 Choosing an appropriate method for gathering data: Problem type 1  
 mstat081 Choosing an appropriate method for gathering data: Problem type 2  
 mstat056 Interpreting a tally table  
 mstat097 Constructing a two-way frequency table: Basic  
 mstat098 Constructing a two-way frequency table: Advanced  
 mstat049 Computing a percentage from a table of values  
 mstat087 Making an inference using a two-way frequency table  
 stat020 Calculating relative frequencies in a contingency table  
 mstat025 Finding if a question can be answered by the data  
 mstat037 Constructing a line plot  
 mstat005 Constructing a bar graph for non-numerical data  
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 mstat031 Interpreting a stem-and-leaf plot  
 geom814 Angle measure in a circle graph  
 mstat094 Constructing a scatter plot  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 mstat003 Mode of a data set  
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 mstat001 Mean of a data set  
 mstat077 Using a model to find the mean  
 mstat075 Understanding the mean graphically: Two bars  
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 mstat091 Finding the mean of a symmetric distribution  
 mstat079 Finding sample size and comparing samples for estimating the mean  
 mstat089 Computations involving the mean, sample size, and sum of a data set  
 stat803 Finding the value for a new score that will yield a given mean  
 stat802 Rejecting unreasonable claims based on average statistics  
 mstat066 Weighted mean  
 mstat028 Mean and median of a data set  
 mstat029 How changing a value affects the mean and median  
 mstat095 Finding outliers in a data set  
 mstat053 Choosing the best measure to describe data  
 mstat078 Comparing measures of center and variation  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat072 Five-number summary and interquartile range  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 mstat082 Computing mean absolute deviation from a list of numerical values  
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 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
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 mstat099 Determining a sample space and outcomes for a simple event  
 mstat100 Determining a sample space and outcomes for a compound event  
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 mstat026 Introduction to the probability of an event  
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 mstat047 Introduction to expectation  
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## B.87 CC Math 7

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 arith643 Expanded form with zeros  
 arith028 Numeral translation: Problem type 1  
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 arith630 Addition with carry to the hundreds place  
 arith012 Addition of large numbers  
 arith006 Subtraction with borrowing  
 arith682 Subtraction with multiple regrouping steps  
 arith637 Subtraction and regrouping with zeros  
 arith613 Word problem with addition or subtraction of whole numbers  
 mstat061 Describing an increasing or decreasing pattern from a table of values  
 arith126 Multiplication as repeated addition  
 arith004 Multiplication with carry  
 arith615 Introduction to multiplication of large numbers  
 arith675 Understanding multiplication of a one-digit number with a larger number  
 arith014 Multiplication of large numbers  
 arith641 Multiples: Problem type 1  
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 arith614 Word problem with multiplication or division of whole numbers  
 arith130 Word problem with multiplication and addition or subtraction of whole numbers  
 arith451 Word problem on unit rates associated with ratios of whole numbers: Whole number answers  
 arith243 Division of whole numbers given in fractional form  
 arith711 Division involving zero  
 arith005 Division with carry  
 arith901 Whole number division: 2-digit by 2-digit, no remainder  
 arith902 Whole number division: 3-digit by 2-digit, no remainder  
 arith616 Quotient and remainder: Problem type 1  
 arith617 Quotient and remainder: Problem type 2  
 arith631 Quotient and remainder: Problem type 3  
 arith650 Division involving quotients with intermediate zeros  
 arith023 Word problem with division of whole numbers and rounding  
 arith651 Introduction to inequalities  
 arith652 Comparing a numerical expression with a number  
 arith077 Ordering large numbers  
 arith078 Rounding to tens or hundreds  
 arith123 Rounding to hundreds or thousands  
 arith061 Rounding to thousands, ten thousands, or hundred thousands  
 arith101 Estimating a sum of whole numbers  
 arith102 Estimating a difference of whole numbers  
 arith677 Estimating a product

arith678 Estimating a quotient  
arith692 Writing expressions using exponents  
arith233 Introduction to exponents  
arith683 Power of 10: Positive exponent  
arith016 Square root of a perfect square  
arith645 Introduction to parentheses  
arith865 Comparing numerical expressions with parentheses  
arith681 Introduction to order of operations  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
arith646 Even and odd numbers  
arith647 Divisibility rules for 2, 5, and 10  
arith648 Divisibility rules for 3 and 9  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith516 Greatest common factor of 3 numbers  
arith409 Introduction to the distributive property  
arith657 Understanding the distributive property  
arith410 Introduction to factoring with numbers  
arith411 Factoring a sum or difference of whole numbers  
arith070 Least common multiple of 2 numbers  
arith804 Least common multiple of 3 numbers  
arith418 Word problem involving the least common multiple of 2 numbers  
arith240 Word problem with common multiples  
alge286 Plotting integers on a number line  
arith691 Ordering integers  
arith415 Using a number line to compare integers  
arith699 Writing a signed number for a real-world situation  
arith400 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 1  
arith511 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 2  
arith416 Comparing signed numbers relating to a real-world situation  
arith402 Plotting opposite integers on a number line  
arith403 Finding opposites of integers  
arith071 Absolute value of a number  
arith412 Finding all numbers with a given absolute value  
arith200 Integer addition: Problem type 1  
arith108 Integer addition: Problem type 2  
arith431 Identifying a sum as a point located a given distance from another point  
arith430 Identifying relative change when combining two quantities  
arith688 Integer subtraction: Problem type 1  
arith689 Integer subtraction: Problem type 2  
arith690 Integer subtraction: Problem type 3  
arith754 Addition and subtraction with 3 integers  
arith755 Addition and subtraction with 4 or 5 integers  
arith440 Operations with absolute value: Problem type 1  
arith104 Operations with absolute value: Problem type 2  
alge694 Computing the distance between two integers on a number line  
arith433 Computing and understanding distances between integers on a number line  
arith701 Word problem with addition or subtraction of integers  
arith231 Integer multiplication and division  
arith800 Multiplication of 3 or 4 integers  
arith952 Word problem with multiplication or division of integers  
arith702 Exponents and integers: Problem type 1  
arith703 Exponents and integers: Problem type 2  
arith118 Order of operations with integers  
arith600 Order of operations with integers and exponents  
alge284 Evaluating an algebraic expression: Whole number addition or subtraction  
alge683 Evaluating an algebraic expression: Whole number multiplication or division

alge285 Evaluating an algebraic expression: Whole numbers with two operations  
 alge649 Evaluating a formula  
 alge648 Evaluating an algebraic expression: Whole numbers with one operation and an exponent  
 alge832 Evaluating an algebraic expression: Whole number operations and exponents  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 alge733 Writing a one-step expression for a real-world situation  
 alge831 Translating a phrase into a one-step expression  
 alge291 Translating a phrase into a two-step expression  
 geom339 Perimeter of a polygon  
 geom300 Perimeter of a square or a rectangle  
 geom019 Area of a square or a rectangle  
 geom866 Perimeter and area on a grid  
 geom311 Volume of a rectangular prism  
 alge650 Identifying solutions to a one-step linear equation: Problem type 1  
 alge651 Identifying solutions to a one-step linear equation: Problem type 2  
 alge009 Additive property of equality with whole numbers  
 alge010 Additive property of equality with integers  
 alge008 Multiplicative property of equality with whole numbers  
 alge797 Multiplicative property of equality with integers

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arith623 Introduction to fractions  
 arith665 Understanding equivalent fractions  
 arith212 Equivalent fractions  
 arith666 Introduction to simplifying a fraction  
 arith067 Simplifying a fraction  
 alge660 Identifying equivalent signed fractions  
 arith687 Fractional position on a number line  
 arith667 Plotting fractions on a number line  
 arith044 Ordering fractions with the same denominator  
 arith091 Ordering fractions with the same numerator  
 arith092 Using a common denominator to order fractions  
 arith079 Product of a unit fraction and a whole number  
 arith086 Product of a fraction and a whole number: Problem type 1  
 arith119 Introduction to fraction multiplication  
 arith053 Fraction multiplication  
 arith812 Product of a fraction and a whole number: Problem type 2  
 arith905 Determining if a quantity is increased or decreased when multiplied by a fraction  
 arith509 Modeling multiplication of proper fractions  
 arith813 Multiplication of 3 fractions  
 arith822 Signed fraction multiplication: Basic  
 arith105 Signed fraction multiplication: Advanced  
 arith818 Word problem involving fractions and multiplication  
 arith095 Multi-step word problem involving fractions and multiplication  
 arith088 The reciprocal of a number  
 arith694 Division involving a whole number and a fraction  
 arith022 Fraction division  
 arith507 Fact families for multiplication and division of fractions  
 arith508 Modeling division of a whole number by a fraction  
 arith814 Signed fraction division  
 arith819 Word problem involving fractions and division  
 arith618 Addition or subtraction of fractions with the same denominator  
 arith802 Addition or subtraction of fractions with the same denominator and simplification  
 alge432 Introduction to adding fractions with variables and common denominators  
 arith801 Finding the LCD of two fractions  
 arith109 Addition or subtraction of unit fractions  
 arith664 Introduction to addition or subtraction of fractions with different denominators  
 arith230 Addition or subtraction of fractions with different denominators

arith803 Addition and subtraction of 3 fractions with different denominators  
 arith116 Signed fraction addition or subtraction: Basic  
 arith864 Signed fraction subtraction involving double negation  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith811 Addition and subtraction of 3 fractions involving signs  
 arith805 Word problem involving addition or subtraction of fractions with different denominators  
 arith100 Fractional part of a circle  
 arith662 Writing a mixed number and an improper fraction for a shaded region  
 arith015 Writing an improper fraction as a mixed number  
 arith619 Writing a mixed number as an improper fraction  
 arith605 Plotting rational numbers on a number line  
 arith215 Addition or subtraction of mixed numbers with the same denominator  
 arith084 Addition of mixed numbers with the same denominator and carry  
 arith216 Subtraction of mixed numbers with the same denominator and borrowing  
 arith806 Addition or subtraction of mixed numbers with different denominators and no carry or borrow  
 arith808 Addition of mixed numbers with different denominators and carry  
 arith809 Subtraction of mixed numbers with different denominators and borrowing  
 arith807 Addition and subtraction of 3 mixed numbers with different denominators  
 arith810 Word problem involving addition or subtraction of mixed numbers with different denominators  
 arith815 Mixed number multiplication  
 arith816 Multiplication of a mixed number and a whole number  
 arith817 Division with a mixed number and a whole number  
 arith068 Mixed number division  
 arith820 Word problem involving multiplication or division with mixed numbers  
 arith821 Exponents and fractions  
 alge790 Evaluating expressions with exponents of zero  
 arith704 Exponents and signed fractions  
 arith859 Order of operations with fractions: Problem type 1  
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 arith695 Complex fraction without variables: Problem type 1  
 alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
 alge801 Additive property of equality with fractions and mixed numbers  
 alge836 Additive property of equality with signed fractions  
 alge646 Multiplicative property of equality with whole numbers: Fractional answers  
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arith127 Writing a decimal and a fraction for a shaded region  
 arith110 Decimal place value: Tenths and hundredths  
 arith220 Decimal place value: Hundreds to ten thousandths  
 arith714 Writing a decimal number less than 1 given its name  
 arith715 Writing a decimal number greater than 1 given its name  
 arith716 Writing a decimal number given its name: Advanced  
 arith829 Reading decimal position on a number line: Tenths  
 arith830 Reading decimal position on a number line: Hundredths  
 arith831 Understanding decimal position on a number line using zoom: Hundredths  
 arith832 Understanding decimal position on a number line using zoom: Thousandths  
 arith129 Introduction to ordering decimals  
 arith608 Ordering decimals  
 arith221 Rounding decimals  
 arith717 Converting a decimal to a proper fraction without simplifying: Basic  
 arith719 Converting a decimal to a proper fraction without simplifying: Advanced  
 arith718 Converting a decimal to a proper fraction in simplest form: Basic  
 arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
 arith721 Converting a decimal to a mixed number and an improper fraction without simplifying  
 arith722 Converting a decimal to a mixed number and an improper fraction in simplest form: Basic  
 arith724 Converting a decimal to a mixed number and an improper fraction in simplest form: Advanced

arith624 Addition of aligned decimals  
arith013 Decimal addition with 3 numbers  
arith734 Subtraction of aligned decimals  
arith735 Decimal subtraction: Basic  
arith736 Decimal subtraction: Advanced  
arith737 Decimal addition and subtraction with 3 or more numbers  
arith131 Estimating a decimal sum or difference  
arith117 Signed decimal addition and subtraction  
arith234 Signed decimal addition and subtraction with 3 numbers  
geom525 Computing distances between decimals on the number line  
arith132 Word problem with addition or subtraction of 2 decimals  
arith133 Word problem with addition of 3 or 4 decimals and whole numbers  
arith134 Word problem with subtraction of a whole number and a decimal: Regrouping with zeros  
arith739 Introduction to decimal multiplication  
arith017 Multiplication of a decimal by a whole number  
arith055 Decimal multiplication: Problem type 1  
arith046 Decimal multiplication: Problem type 2  
arith082 Multiplication of a decimal by a power of ten  
arith738 Multiplication of a decimal by a power of 0.1  
arith740 Multiplication of decimals that have a product less than 0.1  
arith752 Estimating a product of decimals  
arith750 Signed decimal multiplication  
arith135 Word problem with multiplication of a decimal and a whole number  
arith137 Word problem with multiplication of two decimals  
arith628 Word problem with multiple decimal operations: Problem type 1  
arith744 Whole number division with decimal answers  
arith081 Division of a decimal by a whole number  
arith743 Division of a decimal by a 1-digit decimal  
arith019 Division of a decimal by a 2-digit decimal  
arith083 Division of a decimal by a power of ten  
arith742 Division of a decimal by a power of 0.1  
arith745 Decimal division with rounding  
arith751 Signed decimal division  
arith136 Word problem with division of a decimal and a whole number  
arith138 Word problem with division of two decimals  
arith629 Word problem with multiple decimal operations: Problem type 2  
arith103 Average of two numbers  
arith725 Converting a fraction with a denominator of 10 or 100 to a decimal  
arith726 Converting a fraction with a denominator of 100 or 1000 to a decimal  
arith113 Converting a proper fraction with a denominator of 2, 4, or 5 to a decimal  
arith114 Converting a mixed number with a denominator of 2, 4, or 5 to a decimal  
arith727 Converting a fraction to a terminating decimal: Basic  
arith728 Converting a fraction to a terminating decimal: Advanced  
arith730 Converting a fraction to a repeating decimal: Basic  
arith731 Converting a fraction to a repeating decimal: Advanced  
arith733 Using a calculator to convert a fraction to a rounded decimal  
arith111 Converting a mixed number to a terminating decimal: Basic  
arith112 Converting a mixed number to a terminating decimal: Advanced  
arith732 Converting a fraction or mixed number to a rounded decimal  
arith609 Ordering fractions and decimals  
alge001 Identifying numbers as integers or non-integers  
arith513 Identifying rational decimal numbers  
arith753 Squaring decimal bases: Products greater than 0.1  
arith741 Exponents and decimals: Products less than 0.1  
arith720 Order of operations with decimals: Problem type 1  
arith746 Order of operations with decimals: Problem type 2  
arith747 Order of operations with decimals: Problem type 3  
arith748 Addition or subtraction with a decimal and a mixed number  
arith749 Multiplication with a decimal and a fraction  
alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
alge800 Additive property of equality with decimals



alge825 Multiplicative property of equality with decimals

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arith823 Writing ratios using different notations  
 arith663 Writing ratios for real-world situations  
 arith450 Identifying statements that describe a ratio  
 arith824 Simplifying a ratio of whole numbers: Problem type 1  
 arith825 Simplifying a ratio of decimals  
 arith827 Finding a unit price  
 arith455 Using tables to compare ratios  
 arith828 Computing unit prices to find the better buy  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 arith505 Word problem on unit rates associated with ratios of fractions  
 arith506 Word problem on unit rates associated with ratios of mixed numbers  
 arith064 Solving a word problem on proportions using a unit rate  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 arith452 Finding missing values in a table of equivalent ratios  
 arith453 Using a table of equivalent ratios to find a missing quantity in a ratio  
 arith504 Writing an equation to represent a proportional relationship  
 alge819 Solving a proportion of the form  $x/a=b/c$ : Basic  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 arith045 Word problem with powers of ten  
 arith500 Identifying proportional relationships in tables by calculating unit rates: Whole numbers  
 arith510 Identifying proportional relationships in tables by calculating unit rates: Fractions  
 geom359 Identifying congruent shapes on a grid  
 geom360 Identifying similar or congruent shapes on a grid  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom538 Finding lengths using scale models  
 geom539 Finding a scale factor: Same units  
 geom541 Using a scale drawing to find actual area  
 geom542 Reproducing a scale drawing at a different scale  
 mstat058 Choosing a measuring tool  
 mstat059 Choosing U.S. Customary measurement units  
 mstat033 Measuring length to the nearest inch  
 mstat034 Measuring length to the nearest quarter or half inch  
 unit005 U.S. Customary unit conversion with whole number values  
 mstat035 Conversions involving measurements in feet and inches  
 mstat036 Adding measurements in feet and inches  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 unit007 U.S. Customary unit conversion with mixed number values: One-step conversion  
 unit008 U.S. Customary unit conversion with mixed number values: Two-step conversion  
 unit009 U.S. Customary area unit conversion with whole number values  
 mstat060 Choosing metric measurement units  
 mstat063 Measuring length to the nearest centimeter  
 mstat064 Measuring length to the nearest millimeter  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit012 Time unit conversion with whole number values  
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mstat062 Reading a positive temperature from a thermometer  
 mstat038 Reading the temperature from a thermometer  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 arith826 Simplifying a ratio of whole numbers: Problem type 2  
 alge218 Solving a word problem involving rates and time conversion  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
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arith836 Converting a fraction with a denominator of 100 to a percentage  
 arith837 Converting a percentage to a fraction with a denominator of 100  
 arith674 Finding the percentage of a grid that is shaded  
 arith903 Representing benchmark percentages on a grid  
 arith723 Introduction to converting a percentage to a decimal  
 arith833 Introduction to converting a decimal to a percentage  
 arith834 Converting between percentages and decimals  
 arith841 Converting a mixed number percentage to a decimal  
 arith835 Converting between percentages and decimals in a real-world situation  
 arith090 Converting a percentage to a fraction in simplest form  
 arith839 Converting a decimal percentage to a fraction  
 arith838 Converting a fraction to a percentage: Denominator of 4, 5, or 10  
 arith904 Finding benchmark fractions and percentages for a figure  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith843 Using a calculator to convert a fraction to a rounded percentage  
 arith842 Converting a fraction to a percentage in a real-world situation  
 arith840 Finding a percentage of a whole number  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith844 Finding a percentage of a whole number without a calculator: Advanced  
 arith862 Applying the percent equation: Problem type 1  
 arith863 Applying the percent equation: Problem type 2  
 arith845 Finding a percentage of a total amount: Real-world situations  
 arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount  
 arith857 Estimating a tip without a calculator  
 arith069 Writing a ratio as a percentage without a calculator  
 arith850 Finding the rate of a tax or commission  
 arith849 Finding the total amount given the percentage of a partial amount  
 stat805 Making a reasonable inference based on proportion statistics  
 stat804 Interpreting a circle graph or pie chart  
 arith856 Finding a percentage of a total amount in a circle graph  
 stat801 Computations from a circle graph  
 arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
 arith851 Finding the final amount given the original amount and a percentage increase or decrease  
 arith847 Finding the sale price given the original price and percent discount  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith848 Finding the total cost including tax or markup  
 arith855 Finding the original amount given the result of a percentage increase or decrease  
 arith031 Finding the original price given the sale price and percent discount  
 arith858 Finding the percentage increase or decrease: Basic  
 arith225 Finding the percentage increase or decrease: Advanced  
 unit052 Finding the absolute error and percent error of a measurement  
 arith232 Finding simple interest without a calculator  
 arith853 Introduction to compound interest  
 arith915 Calculating income tax  
 arith918 Comparing discounts  
 arith909 Examining a savings plan for college  
 arith914 Calculations involving paying for college  
 arith920 Comparing total costs for attending different colleges  
 arith922 Distinguishing between fixed and variable expenses

arith916 Computing percentages for categories of a budget  
 arith919 Computations involving cost of living and hourly wage  
 arith921 Comparing annual salaries of different occupations  
 arith911 Calculations involving purchases with debit and credit cards  
 arith950 Comparing costs of checking accounts  
 arith951 Balancing a check register  
 arith912 Reading a credit report  
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 arith917 Computing a person's net worth  
 arith906 Calculating and comparing monthly payments using the ALEKS loan calculator  
 arith907 Calculating monthly payment, total payment, and interest using the ALEKS loan calculator  
 arith908 Calculating and comparing total loan payments using the ALEKS loan calculator  
 arith910 Calculating and comparing simple interest and compound interest

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 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 arith655 Introduction to properties of addition  
 alge187 Properties of addition  
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 alge665 Combining like terms: Decimal coefficients  
 alge310 Multiplying a constant and a linear monomial  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge610 Distributive property: Fractional coefficients  
 alge605 Factoring a linear binomial  
 alge612 Identifying parts in an algebraic expression  
 alge613 Identifying equivalent algebraic expressions  
 arith656 Introduction to properties of multiplication  
 alge188 Properties of real numbers  
 alge608 Using distribution and combining like terms to simplify: Univariate  
 alge667 Identifying properties used to simplify an algebraic expression  
 alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
 alge293 Combining like terms in a quadratic expression  
 alge436 Adding rational expressions with different denominators and a single occurrence of a variable  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge803 Using two steps to solve an equation with whole numbers  
 alge266 Additive property of equality with a negative coefficient  
 alge006 Solving a two-step equation with integers  
 alge200 Solving an equation to find the value of an expression  
 alge920 Introduction to solving an equation with parentheses  
 alge837 Solving a multi-step equation given in fractional form  
 alge986 Identifying properties used to solve a linear equation  
 alge824 Solving a two-step equation with signed decimals  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge611 Introduction to solving a linear equation with a variable on each side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge614 Clearing fractions in an equation  
 alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
 alge208 Solving a two-step equation with signed fractions

alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge840 Solving a proportion of the form  $(x+a)\div b = c\div d$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 alge658 Introduction to solving a rational equation  
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge603 Introduction to solving an absolute value equation  
 alge864 Solving an absolute value equation: Problem type 1  
 alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
 alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
 alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
 alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
 alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
 alge518 Solving for a variable inside parentheses in terms of other variables  
 alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge016 Translating a sentence into a one-step equation  
 alge671 Choosing stories that can be represented by given one-step equations  
 alge841 Translating a sentence into a multi-step equation  
 alge628 Writing an equation of the form  $Ax + B = C$  to solve a word problem  
 alge618 Comparing arithmetic and algebraic solutions to a word problem  
 alge672 Choosing stories that can be represented by given two-step equations  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge629 Writing an equation of the form  $A(x + B) = C$  to solve a word problem  
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge673 Writing an equation to represent a real-world problem: Variable on both sides  
 alge674 Writing and solving a real-world problem given an equation with the variable on both sides  
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge792 Solving a word problem with three unknowns using a linear equation  
 alge842 Solving a word problem involving consecutive integers  
 alge794 Solving a value mixture problem using a linear equation  
 alge795 Solving a percent mixture problem using a linear equation  
 alge796 Solving a distance, rate, time problem using a linear equation  
 alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge653 Introduction to identifying solutions to an inequality  
 alge748 Writing an inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line  
 alge652 Identifying solutions to a one-step linear inequality  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge809 Multiplicative property of inequality with whole numbers  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge621 Solving a word problem using a one-step linear inequality  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge636 Solving a two-step linear inequality with whole numbers  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge846 Translating a sentence into a multi-step inequality

alge619 Solving a word problem using a two-step linear inequality and describing the solution  
 alge623 Solving a word problem using a two-step linear inequality  
 alge749 Solving a decimal word problem using a two-step linear inequality

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alge278 Reading a point in quadrant 1  
 alge279 Plotting a point in quadrant 1  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge692 Plotting a point in quadrant 1: Mixed number coordinates  
 alge693 Plotting a point in the coordinate plane: Mixed number coordinates  
 arith404 Naming the quadrant or axis of a point given its graph  
 arith405 Naming the quadrant or axis of a point given its coordinates  
 arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
 alge695 Finding distances between points that share a common coordinate given the graph  
 alge696 Finding distances between points that share a common coordinate given their coordinates  
 alge191 Midpoint of a line segment in the plane  
 alge282 Function tables with two-step rules  
 alge850 Table for a linear equation  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 alge280 Graphing a line in quadrant 1  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
 alge924 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Basic  
 alge210 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Advanced  
 alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
 alge881 Graphing a line by first finding its  $x$ - and  $y$ -intercepts  
 alge874 Identifying linear functions given ordered pairs  
 geom358 Identifying parallel and perpendicular lines  
 mstat007 Interpreting a line graph  
 arith454 Making a table and plotting points given a unit rate  
 arith501 Identifying proportional relationships in graphs: Basic  
 arith502 Identifying proportional relationships in graphs: Advanced  
 arith512 Finding outputs and rate of increase given the graph of a line that models a real-world situation  
 alge699 Comparing proportional relationships given in different forms  
 alge575 Finding slope given the graph of a line in quadrant 1 that models a real-world situation  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines  
 alge814 Using right triangles to find the slope of a line  
 alge888 Finding the coordinate that yields a given slope  
 alge259 Graphing a line given its slope and  $y$ -intercept  
 alge196 Graphing a line through a given point with a given slope  
 alge982 Identifying direct variation equations  
 alge938 Identifying direct variation from ordered pairs and writing equations  
 alge904 Writing a direct variation equation  
 alge175 Word problem on direct variation  
 alge828 Interpreting direct variation from a graph  
 alge905 Writing an inverse variation equation  
 alge903 Identifying direct and inverse variation equations  
 alge902 Identifying direct and inverse variation from ordered pairs and writing equations

alge176 Word problem on inverse variation  
 alge220 Word problem on inverse proportions  
 alge625 Identifying linear equations: Basic  
 alge891 Rewriting a linear equation in the form  $Ax + By = C$   
 alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
 alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
 alge882 Graphing a line by first finding its slope and y-intercept  
 alge258 Writing an equation of a line given its slope and y-intercept  
 alge892 Writing an equation and graphing a line given its slope and y-intercept  
 alge893 Writing an equation in slope-intercept form given the slope and a point  
 alge883 Graphing a line given its equation in point-slope form  
 alge894 Writing an equation in point-slope form given the slope and a point  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 alge895 Identifying parallel and perpendicular lines from equations  
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 alge630 Finding outputs of a one-step function that models a real-world situation: Two variable equation  
 alge632 Finding outputs of a two-step function with decimals that models a real-world situation: Two variable equation  
 alge633 Finding inputs and outputs of a two-step function that models a real-world situation: Two variable equation  
 alge655 Writing and evaluating a function that models a real-world situation: Basic  
 alge897 Writing and evaluating a function that models a real-world situation: Advanced  
 alge654 Graphing ordered pairs and writing an equation from a table of values in context  
 alge656 Writing an equation and drawing its graph to model a real-world situation: Basic  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge817 Finding the initial amount and rate of change given a table for a linear function  
 alge818 Finding the initial amount and rate of change given a graph of a linear function  
 alge987 Comparing properties of linear functions given in different forms  
 alge989 Interpreting the parameters of a linear function that models a real-world situation  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 alge670 Identifying independent and dependent quantities from tables and graphs  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun016 Domain and range from ordered pairs  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 alge294 Finding outputs of a one-step function that models a real-world situation: Function notation  
 alge295 Finding outputs of a two-step function with decimals that models a real-world situation: Function notation  
 alge296 Finding inputs and outputs of a two-step function that models a real-world situation: Function notation  
 alge990 Domain and range of a linear function that models a real-world situation  
 fun026 Finding an output of a function from its graph  
 pcalc761 Finding inputs and outputs of a function from its graph  
 fun007 Domain and range from the graph of a discrete relation  
 alge896 Graphing an integer function and finding its range for a given domain  
 alge570 Graphing a function of the form  $f(x) = ax + b$ : Integer slope  
 alge571 Graphing a function of the form  $f(x) = ax + b$ : Fractional slope  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 mstat018 Choosing a graph to fit a narrative: Basic  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge913 Graphing an absolute value equation of the form  $y = A - x -$   
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge954 Graphing a parabola of the form  $y = ax^2$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge262 Graphing a cubic function of the form  $y = ax^3$



alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge732 Finding patterns in shapes  
 alge644 Finding the first terms of an arithmetic sequence using an explicit rule  
 alge645 Finding the first terms of a geometric sequence using an explicit rule  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge914 Identifying solutions to a system of linear equations  
 alge725 Graphically solving a system of linear equations  
 alge815 Introduction to using substitution to solve a linear equation  
 alge816 Solving a system of linear equations of the form  $y = mx + b$   
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge634 Solving systems of linear equations with 0, 1, or infinitely many solutions  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 pcalc038 Addition or subtraction of matrices  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced

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alge686 Introduction to the product rule with positive exponents: Whole number base  
 alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge311 Product rule with positive exponents: Univariate  
 alge030 Product rule with positive exponents: Multivariate  
 alge690 Introduction to the power of a power rule with positive exponents: Whole number base  
 alge826 Understanding the power rules of exponents  
 alge306 Introduction to the power of a power rule of exponents  
 alge305 Introduction to the power of a product rule of exponents  
 alge307 Power rules with positive exponents: Multivariate products  
 alge308 Power rules with positive exponents: Multivariate quotients  
 alge451 Simplifying a ratio of multivariate monomials: Basic  
 alge688 Introduction to the quotient rule with positive exponents: Whole number base  
 alge827 Introduction to the quotient rule of exponents  
 alge452 Simplifying a ratio of univariate monomials  
 alge026 Quotient of expressions involving exponents  
 arith029 Ordering numbers with positive exponents  
 arith684 Power of 10: Negative exponent  
 arith729 Evaluating an expression with a negative exponent: Whole number base  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base



arith024 Ordering numbers with negative exponents  
alge791 Rewriting an algebraic expression without a negative exponent  
alge687 Introduction to the product rule with negative exponents: Whole number base  
alge961 Introduction to the product rule with negative exponents  
alge689 Introduction to the quotient rule with negative exponents: Whole number base  
alge755 Quotient rule with negative exponents: Problem type 1  
alge691 Introduction to the power of a power rule with negative exponents: Whole number base  
alge025 Power of a power rule with negative exponents  
scinot023 Introduction to scientific notation with positive exponents  
arith036 Scientific notation with positive exponent  
scinot024 Introduction to scientific notation with negative exponents  
arith037 Scientific notation with negative exponent  
scinot012 Converting between scientific notation and standard form in a real-world situation  
scinot025 Estimating numbers using scientific notation  
scinot020 Choosing metric units and converting to the base unit in scientific notation  
scinot021 Expressing calculator notation as scientific notation  
scinot008 Multiplying numbers written in scientific notation: Basic  
scinot009 Multiplying numbers written in scientific notation: Advanced  
scinot019 Multiplying numbers written in decimal form or scientific notation in a real-world situation  
scinot010 Dividing numbers written in scientific notation: Basic  
scinot011 Dividing numbers written in scientific notation: Advanced  
scinot013 Finding the scale factor between numbers given in scientific notation in a real-world situation  
scinot015 Adding or subtracting numbers written in scientific notation: Same exponents, basic  
scinot022 Adding or subtracting numbers written in scientific notation: Same exponents, advanced  
scinot016 Adding or subtracting numbers written in scientific notation: Different exponents  
scinot017 Estimating the sum or difference of two numbers written in scientific notation  
alge758 Degree and leading coefficient of a univariate polynomial  
alge031 Degree of a multivariate polynomial  
alge798 Simplifying a sum or difference of two univariate polynomials  
alge029 Simplifying a sum or difference of three univariate polynomials  
alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
alge033 Multiplying binomials with leading coefficients of 1  
alge983 Multiplying binomials with leading coefficients greater than 1  
alge765 Multiplying binomials in two variables  
alge764 Multiplying conjugate binomials: Univariate  
alge032 Squaring a binomial: Univariate  
alge935 Multiplication involving binomials and trinomials in one variable  
alge180 Multiplication involving binomials and trinomials in two variables  
alge737 Introduction to the LCM of two monomials  
alge055 Least common multiple of two monomials  
alge736 Introduction to the GCF of two monomials  
alge037 Greatest common factor of two multivariate monomials  
alge738 Factoring out a monomial from a polynomial: Univariate  
alge039 Factoring a quadratic with leading coefficient 1  
alge944 Factoring a perfect square trinomial with leading coefficient 1  
alge290 Factoring a difference of squares in one variable: Basic  
alge947 Factoring a difference of squares in one variable: Advanced  
alge045 Finding the roots of a quadratic equation with leading coefficient 1  
arith601 Square root of a rational perfect square  
alge413 Finding all square roots of a number  
arith760 Square roots of perfect squares with signs  
arith763 Using a calculator to approximate a square root  
arith602 Estimating a square root  
alge567 Using numerical methods to approximate a square root to the nearest tenth  
alge568 Using numerical methods to approximate a square root to the nearest hundredth  
arith515 Approximating the location of irrational numbers on a number line  
arith712 Ordering real numbers  
arith514 Converting a repeating decimal to a fraction  
arith432 Identifying true statements about rational and irrational numbers  
alge002 Identifying numbers as rational or irrational  
alge415 Introduction to simplifying a radical expression with an even exponent  
alge264 Square root of a perfect square monomial

arith093 Simplifying the square root of a whole number less than 100  
 arith762 Simplifying the square root of a whole number greater than 100  
 alge080 Simplifying a radical expression with an even exponent  
 arith767 Introduction to square root addition or subtraction  
 arith032 Square root addition or subtraction  
 arith764 Introduction to square root multiplication  
 arith765 Square root multiplication: Basic  
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 geom564 Finding side lengths of squares given an area and a perimeter  
 alge400 Introduction to solving a radical equation  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge542 Word problem involving radical equations: Basic  
 arith094 Cube root of an integer  
 alge698 Solving an equation of the form  $x^3 = a$  using integers  
 alge093 Solving an equation using the odd-root property: Problem type 1  
 geom565 Finding the side length of a cube given its volume  
 alge560 Rational exponents: Unit fraction exponents and whole number bases  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem  
 geom862 Using the Pythagorean Theorem repeatedly  
 alge675 Using the Pythagorean Theorem to find distance on a grid  
 alge132 Distance between two points in the plane: Exact answers

### Angles, Lines, and Polygons

geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom551 Finding the complement or supplement of an angle given a figure  
 geom552 Solving an equation involving complementary or supplementary angles  
 geom305 Identifying supplementary and vertical angles  
 geom553 Finding angle measures given two intersecting lines  
 geom530 Solving equations involving vertical angles  
 geom304 Identifying corresponding and alternate angles  
 geom349 Naming segments, rays, and lines  
 geom554 Finding angle measures given two parallel lines cut by a transversal  
 geom531 Solving equations involving angles and a pair of parallel lines  
 geom584 Establishing facts about the angles created when parallel lines are cut by a transversal  
 geom154 Constructing the perpendicular bisector of a line segment  
 geom158 Constructing an angle bisector  
 geom159 Constructing congruent angles  
 geom150 Constructing a pair of perpendicular lines  
 geom157 Constructing a pair of parallel lines  
 geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom860 Special right triangles: Decimal answers  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom623 Finding angle measures of a triangle given angles with variables  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 geom309 Finding an angle measure for a triangle sharing a side with another triangle  
 geom586 Establishing facts about the interior angles of a triangle  
 geom587 Establishing facts about the interior and exterior angles of a triangle  
 geom543 Drawing a circle with a given radius or diameter  
 geom544 Creating triangles from given side lengths: Problem type 1

geom634 Creating triangles from given side lengths: Problem type 2  
 geom844 Using triangle inequality to determine if side lengths form a triangle  
 geom548 Determining if a triangle is possible based on given angle measures  
 geom549 Determining if given measurements define a unique triangle, more than one triangle, or no triangle  
 geom546 Drawing triangles with given conditions: Angle measures  
 geom547 Drawing triangles with given conditions: Side lengths and angle measures  
 geom545 Drawing triangles with given side lengths using a compass  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 geom361 Naming polygons  
 mstat042 Interpreting a Venn diagram of 2 sets  
 geom536 Drawing and identifying a polygon in the coordinate plane  
 geom867 Identifying parallelograms, rectangles, and squares  
 geom310 Properties of quadrilaterals  
 geom532 Classifying parallelograms  
 geom818 Finding the coordinates of a point to make a parallelogram  
 geom870 Sum of the angle measures of a quadrilateral  
 geom852 The sum of interior angle measures in a convex polygon

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geom519 Identifying and naming congruent parts of congruent triangles  
 geom520 Identifying and naming congruent triangles  
 geom583 Finding angle measures of a triangle given two angles of a similar triangle  
 geom585 Finding angle measures and side ratios to determine if two triangles are similar  
 geom357 Identifying transformations  
 geom596 Translating a point and giving its coordinates: One step  
 geom909 Translating a point and giving its coordinates: Two steps  
 geom597 Properties of translated figures  
 geom598 Determining if figures are related by a translation  
 geom330 Translating a polygon  
 geom331 Using a translated point to find coordinates of other translated points  
 arith408 Reflecting a point across an axis  
 geom533 Reflecting a point across both coordinate axes  
 geom590 Reflecting a point across an axis and giving its coordinates  
 arith407 Finding the coordinates of a point reflected across an axis  
 geom560 Finding the coordinates of a point reflected across both axes  
 geom534 Reflecting a polygon across the x-axis or y-axis  
 geom591 Properties of reflected figures  
 geom592 Determining if figures are related by a reflection  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom333 Finding the coordinates of three points reflected over an axis  
 geom334 Drawing lines of symmetry  
 geom602 Finding the coordinates of a point reflected across an axis and translated  
 geom815 Finding an angle of rotation  
 geom624 Identifying rotational symmetry and angles of rotation  
 geom593 Rotating a point and giving its coordinates  
 geom594 Properties of rotated figures  
 geom595 Determining if figures are related by a rotation  
 geom335 Rotating a figure about the origin  
 geom580 Determining if figures are congruent and related by a transformation  
 geom581 Determining if figures are congruent and related by a sequence of transformations  
 geom606 Dilating a segment and giving the coordinates of its endpoints  
 geom607 The effect of dilation on side length

geom608 Determining if figures are related by a dilation  
 geom636 The effect of dilation on area  
 geom336 Dilating a figure  
 geom582 Determining if figures are similar and related by a sequence of transformations

### Perimeters, Areas, and Volumes

geom618 Perimeter of a polygon involving mixed numbers and fractions  
 geom078 Sides of polygons having the same perimeter  
 geom221 Finding the missing length in a figure  
 geom353 Perimeter of a piecewise rectangular figure  
 alge615 Writing algebraic expressions for the perimeter of a figure  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom561 Finding the dimensions of a rectangle given its perimeter and a relationship between sides  
 geom620 Area of a rectangle involving fractions  
 geom619 Area of a rectangle involving mixed numbers and fractions  
 geom350 Distinguishing between the area and perimeter of a rectangle  
 geom351 Areas of rectangles with the same perimeter  
 geom869 Estimates and exact answers  
 alge616 Writing algebraic expressions for the area of a figure  
 geom410 Word problem involving the area of a square or a rectangle  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom340 Area of a piecewise rectangular figure  
 geom562 Area between two rectangles  
 geom142 Word problem involving the area between two rectangles  
 geom501 Finding the area of a right triangle on a grid  
 geom509 Finding the area of a right triangle or its corresponding rectangle  
 geom801 Area of a triangle  
 geom517 Finding the area of a trapezoid on a grid by using triangles and rectangles  
 geom344 Area involving rectangles and triangles  
 alge724 Finding an area in terms of variables  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom537 Finding the perimeter or area of a rectangle in the coordinate plane  
 geom832 Area of quadrilaterals in the coordinate plane  
 geom603 Identifying side lengths that give right triangles  
 geom589 Demonstrating the converse of the Pythagorean Theorem  
 geom588 Informal proof of the Pythagorean Theorem  
 geom347 Introduction to a circle: Diameter, radius, and chord  
 geom343 Identifying central angles, inscribed angles, arcs, chords, and tangents of a circle  
 geom016 Circumference of a circle  
 geom218 Finding the radius or the diameter of a circle given its circumference  
 geom838 Circumference ratios  
 geom301 Perimeter involving rectangles and circles  
 geom026 Area of a circle  
 geom802 Circumference and area of a circle  
 geom570 Distinguishing between the area and circumference of a circle  
 geom302 Area involving rectangles and circles  
 geom563 Area between two concentric circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom126 Area of a sector of a circle: Exact answer in terms of pi  
 geom868 Classifying solids  
 geom348 Vertices, edges, and faces of a solid  
 geom830 Counting the cubes in a solid made of cubes  
 geom816 Side views of a solid made of cubes  
 geom550 Identifying horizontal and vertical cross sections of solids  
 geom354 Volume of a rectangular prism made of unit cubes  
 geom518 Volume of a solid made of cubes with unit fraction edge lengths

geom535 Volume of a rectangular prism with fractional edge lengths  
 alge617 Writing equivalent expressions for the volume of a rectangular prism  
 geom571 Word problem involving the volume of a rectangular prism  
 geom558 Word problem involving the rate of filling or emptying a rectangular prism  
 geom505 Volume of a piecewise rectangular prism  
 geom090 Volume of a triangular prism  
 geom572 Word problem involving the volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom637 Relating the volumes of a rectangular prism and a rectangular pyramid  
 geom638 Relating the volumes of a triangular prism and a triangular pyramid  
 geom035 Volume of a cylinder  
 geom573 Word problem involving the volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom622 Volume of a cone  
 geom086 Volume of a cone: Exact answers in terms of  $\pi$   
 geom639 Relating the volumes of a cylinder and a cone  
 geom575 Word problem involving the volume of a cone  
 geom841 Volume of a sphere  
 geom574 Word problem involving the volume of a sphere  
 geom133 Ratio of volumes  
 geom219 Nets of solids  
 geom031 Surface area of a cube or a rectangular prism  
 geom632 Surface area of a rectangular prism made of unit cubes  
 geom555 Distinguishing between surface area and volume  
 geom556 Using a net to find the surface area of a rectangular prism  
 geom576 Word problem involving the surface area of a rectangular prism  
 geom345 Surface area of a piecewise rectangular prism made of unit cubes  
 geom091 Surface area of a triangular prism  
 geom557 Using a net to find the surface area of a triangular prism  
 geom621 Surface area of a cylinder  
 geom034 Surface area of a cylinder: Exact answers in terms of  $\pi$   
 geom578 Word problem involving the surface area of a cylinder  
 geom842 Surface area of a sphere  
 geom338 Surface area involving prisms or cylinders  
 geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids  
 geom847 Similar solids: Problem type 2

### Data Analysis and Probability

mstat088 Identifying statistical questions  
 mstat080 Choosing an appropriate method for gathering data: Problem type 1  
 mstat081 Choosing an appropriate method for gathering data: Problem type 2  
 mstat056 Interpreting a tally table  
 mstat097 Constructing a two-way frequency table: Basic  
 mstat098 Constructing a two-way frequency table: Advanced  
 mstat049 Computing a percentage from a table of values  
 mstat087 Making an inference using a two-way frequency table  
 stat020 Calculating relative frequencies in a contingency table  
 mstat025 Finding if a question can be answered by the data  
 mstat037 Constructing a line plot  
 mstat005 Constructing a bar graph for non-numerical data  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat057 Interpreting a pictograph table  
 mstat031 Interpreting a stem-and-leaf plot  
 geom814 Angle measure in a circle graph  
 mstat094 Constructing a scatter plot  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation

mstat068 Predictions from the line of best fit  
 mstat067 Approximating the equation of a line of best fit and making predictions  
 mstat093 Classifying linear and nonlinear relationships from scatter plots  
 mstat071 Linear relationship and the correlation coefficient  
 mstat096 Identifying outliers and clustering in scatter plots  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat092 Finding the mode and range from a line plot  
 mstat001 Mean of a data set  
 mstat077 Using a model to find the mean  
 mstat075 Understanding the mean graphically: Two bars  
 mstat076 Understanding the mean graphically: Four or more bars  
 mstat091 Finding the mean of a symmetric distribution  
 mstat079 Finding sample size and comparing samples for estimating the mean  
 mstat089 Computations involving the mean, sample size, and sum of a data set  
 stat803 Finding the value for a new score that will yield a given mean  
 stat802 Rejecting unreasonable claims based on average statistics  
 mstat066 Weighted mean  
 mstat028 Mean and median of a data set  
 mstat029 How changing a value affects the mean and median  
 mstat095 Finding outliers in a data set  
 mstat053 Choosing the best measure to describe data  
 mstat078 Comparing measures of center and variation  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat072 Five-number summary and interquartile range  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 mstat090 Comparing sample means  
 mstat082 Computing mean absolute deviation from a list of numerical values  
 mstat083 Computing mean absolute deviation from a bar graph  
 mstat084 Assessing the degree of overlap of two distributions  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 mstat099 Determining a sample space and outcomes for a simple event  
 mstat100 Determining a sample space and outcomes for a compound event  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 mstat054 Classifying likelihood  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat039 Understanding likelihood  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat085 Identifying outcomes in a random number table used to simulate a compound event  
 mstat086 Using a random number table to simulate a compound event

## B.88 CC Math 8

### Whole Numbers and Integers

arith124 Whole number place value: Problem type 1  
arith125 Whole number place value: Problem type 2  
arith066 Expanded form  
arith643 Expanded form with zeros  
arith028 Numeral translation: Problem type 1  
arith060 Numeral translation: Problem type 2  
arith630 Addition with carry to the hundreds place  
arith012 Addition of large numbers  
arith006 Subtraction with borrowing  
arith682 Subtraction with multiple regrouping steps  
arith637 Subtraction and regrouping with zeros  
arith613 Word problem with addition or subtraction of whole numbers  
mstat061 Describing an increasing or decreasing pattern from a table of values  
arith126 Multiplication as repeated addition  
arith004 Multiplication with carry  
arith615 Introduction to multiplication of large numbers  
arith675 Understanding multiplication of a one-digit number with a larger number  
arith014 Multiplication of large numbers  
arith641 Multiples: Problem type 1  
arith642 Multiples: Problem type 2  
arith614 Word problem with multiplication or division of whole numbers  
arith130 Word problem with multiplication and addition or subtraction of whole numbers  
arith451 Word problem on unit rates associated with ratios of whole numbers: Whole number answers  
arith243 Division of whole numbers given in fractional form  
arith711 Division involving zero  
arith005 Division with carry  
arith901 Whole number division: 2-digit by 2-digit, no remainder  
arith902 Whole number division: 3-digit by 2-digit, no remainder  
arith616 Quotient and remainder: Problem type 1  
arith617 Quotient and remainder: Problem type 2  
arith631 Quotient and remainder: Problem type 3  
arith650 Division involving quotients with intermediate zeros  
arith023 Word problem with division of whole numbers and rounding  
arith651 Introduction to inequalities  
arith652 Comparing a numerical expression with a number  
arith077 Ordering large numbers  
arith078 Rounding to tens or hundreds  
arith123 Rounding to hundreds or thousands  
arith061 Rounding to thousands, ten thousands, or hundred thousands  
arith101 Estimating a sum of whole numbers  
arith102 Estimating a difference of whole numbers  
arith677 Estimating a product  
arith678 Estimating a quotient  
arith692 Writing expressions using exponents  
arith233 Introduction to exponents  
arith683 Power of 10: Positive exponent  
arith645 Introduction to parentheses  
arith865 Comparing numerical expressions with parentheses  
arith681 Introduction to order of operations  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
arith646 Even and odd numbers  
arith647 Divisibility rules for 2, 5, and 10  
arith648 Divisibility rules for 3 and 9  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith516 Greatest common factor of 3 numbers  
arith409 Introduction to the distributive property



arith657 Understanding the distributive property  
arith410 Introduction to factoring with numbers  
arith411 Factoring a sum or difference of whole numbers  
arith070 Least common multiple of 2 numbers  
arith804 Least common multiple of 3 numbers  
arith418 Word problem involving the least common multiple of 2 numbers  
arith240 Word problem with common multiples  
alge286 Plotting integers on a number line  
arith691 Ordering integers  
arith415 Using a number line to compare integers  
arith699 Writing a signed number for a real-world situation  
arith400 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 1  
arith511 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 2  
arith416 Comparing signed numbers relating to a real-world situation  
arith402 Plotting opposite integers on a number line  
arith403 Finding opposites of integers  
arith071 Absolute value of a number  
arith412 Finding all numbers with a given absolute value  
arith200 Integer addition: Problem type 1  
arith108 Integer addition: Problem type 2  
arith431 Identifying a sum as a point located a given distance from another point  
arith430 Identifying relative change when combining two quantities  
arith688 Integer subtraction: Problem type 1  
arith689 Integer subtraction: Problem type 2  
arith690 Integer subtraction: Problem type 3  
arith754 Addition and subtraction with 3 integers  
arith755 Addition and subtraction with 4 or 5 integers  
arith440 Operations with absolute value: Problem type 1  
arith104 Operations with absolute value: Problem type 2  
alge694 Computing the distance between two integers on a number line  
arith433 Computing and understanding distances between integers on a number line  
arith701 Word problem with addition or subtraction of integers  
arith231 Integer multiplication and division  
arith800 Multiplication of 3 or 4 integers  
arith952 Word problem with multiplication or division of integers  
arith702 Exponents and integers: Problem type 1  
arith703 Exponents and integers: Problem type 2  
arith118 Order of operations with integers  
arith600 Order of operations with integers and exponents  
alge284 Evaluating an algebraic expression: Whole number addition or subtraction  
alge683 Evaluating an algebraic expression: Whole number multiplication or division  
alge285 Evaluating an algebraic expression: Whole numbers with two operations  
alge649 Evaluating a formula  
alge648 Evaluating an algebraic expression: Whole numbers with one operation and an exponent  
alge832 Evaluating an algebraic expression: Whole number operations and exponents  
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
alge004 Evaluating a quadratic expression: Integers  
alge733 Writing a one-step expression for a real-world situation  
alge831 Translating a phrase into a one-step expression  
alge291 Translating a phrase into a two-step expression  
geom339 Perimeter of a polygon  
geom300 Perimeter of a square or a rectangle  
geom019 Area of a square or a rectangle  
geom866 Perimeter and area on a grid  
geom311 Volume of a rectangular prism  
alge650 Identifying solutions to a one-step linear equation: Problem type 1  
alge651 Identifying solutions to a one-step linear equation: Problem type 2  
alge009 Additive property of equality with whole numbers  
alge010 Additive property of equality with integers  
alge008 Multiplicative property of equality with whole numbers  
alge797 Multiplicative property of equality with integers

**Fractions**

arith623 Introduction to fractions  
arith665 Understanding equivalent fractions  
arith212 Equivalent fractions  
arith666 Introduction to simplifying a fraction  
arith067 Simplifying a fraction  
alge660 Identifying equivalent signed fractions  
arith687 Fractional position on a number line  
arith667 Plotting fractions on a number line  
arith044 Ordering fractions with the same denominator  
arith091 Ordering fractions with the same numerator  
arith092 Using a common denominator to order fractions  
arith079 Product of a unit fraction and a whole number  
arith086 Product of a fraction and a whole number: Problem type 1  
arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith812 Product of a fraction and a whole number: Problem type 2  
arith905 Determining if a quantity is increased or decreased when multiplied by a fraction  
arith509 Modeling multiplication of proper fractions  
arith813 Multiplication of 3 fractions  
arith822 Signed fraction multiplication: Basic  
arith105 Signed fraction multiplication: Advanced  
arith818 Word problem involving fractions and multiplication  
arith095 Multi-step word problem involving fractions and multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith507 Fact families for multiplication and division of fractions  
arith508 Modeling division of a whole number by a fraction  
arith814 Signed fraction division  
arith819 Word problem involving fractions and division  
arith618 Addition or subtraction of fractions with the same denominator  
arith802 Addition or subtraction of fractions with the same denominator and simplification  
alge432 Introduction to adding fractions with variables and common denominators  
arith801 Finding the LCD of two fractions  
arith109 Addition or subtraction of unit fractions  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
arith803 Addition and subtraction of 3 fractions with different denominators  
arith116 Signed fraction addition or subtraction: Basic  
arith864 Signed fraction subtraction involving double negation  
arith106 Signed fraction addition or subtraction: Advanced  
arith811 Addition and subtraction of 3 fractions involving signs  
arith805 Word problem involving addition or subtraction of fractions with different denominators  
arith100 Fractional part of a circle  
arith662 Writing a mixed number and an improper fraction for a shaded region  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith605 Plotting rational numbers on a number line  
arith215 Addition or subtraction of mixed numbers with the same denominator  
arith084 Addition of mixed numbers with the same denominator and carry  
arith216 Subtraction of mixed numbers with the same denominator and borrowing  
arith806 Addition or subtraction of mixed numbers with different denominators and no carry or borrow  
arith808 Addition of mixed numbers with different denominators and carry  
arith809 Subtraction of mixed numbers with different denominators and borrowing  
arith807 Addition and subtraction of 3 mixed numbers with different denominators  
arith810 Word problem involving addition or subtraction of mixed numbers with different denominators  
arith815 Mixed number multiplication  
arith816 Multiplication of a mixed number and a whole number  
arith817 Division with a mixed number and a whole number  
arith068 Mixed number division

arith820 Word problem involving multiplication or division with mixed numbers  
 arith821 Exponents and fractions  
 alge790 Evaluating expressions with exponents of zero  
 arith704 Exponents and signed fractions  
 arith859 Order of operations with fractions: Problem type 1  
 arith860 Order of operations with fractions: Problem type 2  
 arith861 Order of operations with fractions: Problem type 3  
 arith695 Complex fraction without variables: Problem type 1  
 alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
 alge801 Additive property of equality with fractions and mixed numbers  
 alge836 Additive property of equality with signed fractions  
 alge646 Multiplicative property of equality with whole numbers: Fractional answers  
 alge820 Multiplicative property of equality with fractions  
 alge012 Multiplicative property of equality with signed fractions

### Decimals

arith127 Writing a decimal and a fraction for a shaded region  
 arith110 Decimal place value: Tenths and hundredths  
 arith220 Decimal place value: Hundreds to ten thousandths  
 arith714 Writing a decimal number less than 1 given its name  
 arith715 Writing a decimal number greater than 1 given its name  
 arith716 Writing a decimal number given its name: Advanced  
 arith829 Reading decimal position on a number line: Tenths  
 arith830 Reading decimal position on a number line: Hundredths  
 arith831 Understanding decimal position on a number line using zoom: Hundredths  
 arith832 Understanding decimal position on a number line using zoom: Thousandths  
 arith129 Introduction to ordering decimals  
 arith608 Ordering decimals  
 arith221 Rounding decimals  
 arith717 Converting a decimal to a proper fraction without simplifying: Basic  
 arith719 Converting a decimal to a proper fraction without simplifying: Advanced  
 arith718 Converting a decimal to a proper fraction in simplest form: Basic  
 arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
 arith721 Converting a decimal to a mixed number and an improper fraction without simplifying  
 arith722 Converting a decimal to a mixed number and an improper fraction in simplest form: Basic  
 arith724 Converting a decimal to a mixed number and an improper fraction in simplest form: Advanced  
 arith624 Addition of aligned decimals  
 arith013 Decimal addition with 3 numbers  
 arith734 Subtraction of aligned decimals  
 arith735 Decimal subtraction: Basic  
 arith736 Decimal subtraction: Advanced  
 arith737 Decimal addition and subtraction with 3 or more numbers  
 arith131 Estimating a decimal sum or difference  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 geom525 Computing distances between decimals on the number line  
 arith132 Word problem with addition or subtraction of 2 decimals  
 arith133 Word problem with addition of 3 or 4 decimals and whole numbers  
 arith134 Word problem with subtraction of a whole number and a decimal: Regrouping with zeros  
 arith739 Introduction to decimal multiplication  
 arith017 Multiplication of a decimal by a whole number  
 arith055 Decimal multiplication: Problem type 1  
 arith046 Decimal multiplication: Problem type 2  
 arith082 Multiplication of a decimal by a power of ten  
 arith738 Multiplication of a decimal by a power of 0.1  
 arith740 Multiplication of decimals that have a product less than 0.1  
 arith752 Estimating a product of decimals  
 arith750 Signed decimal multiplication  
 arith135 Word problem with multiplication of a decimal and a whole number

arith137 Word problem with multiplication of two decimals  
 arith628 Word problem with multiple decimal operations: Problem type 1  
 arith744 Whole number division with decimal answers  
 arith081 Division of a decimal by a whole number  
 arith743 Division of a decimal by a 1-digit decimal  
 arith019 Division of a decimal by a 2-digit decimal  
 arith083 Division of a decimal by a power of ten  
 arith742 Division of a decimal by a power of 0.1  
 arith745 Decimal division with rounding  
 arith751 Signed decimal division  
 arith136 Word problem with division of a decimal and a whole number  
 arith138 Word problem with division of two decimals  
 arith629 Word problem with multiple decimal operations: Problem type 2  
 arith103 Average of two numbers  
 arith725 Converting a fraction with a denominator of 10 or 100 to a decimal  
 arith726 Converting a fraction with a denominator of 100 or 1000 to a decimal  
 arith113 Converting a proper fraction with a denominator of 2, 4, or 5 to a decimal  
 arith114 Converting a mixed number with a denominator of 2, 4, or 5 to a decimal  
 arith727 Converting a fraction to a terminating decimal: Basic  
 arith728 Converting a fraction to a terminating decimal: Advanced  
 arith730 Converting a fraction to a repeating decimal: Basic  
 arith731 Converting a fraction to a repeating decimal: Advanced  
 arith733 Using a calculator to convert a fraction to a rounded decimal  
 arith111 Converting a mixed number to a terminating decimal: Basic  
 arith112 Converting a mixed number to a terminating decimal: Advanced  
 arith732 Converting a fraction or mixed number to a rounded decimal  
 arith609 Ordering fractions and decimals  
 arith753 Squaring decimal bases: Products greater than 0.1  
 arith741 Exponents and decimals: Products less than 0.1  
 arith720 Order of operations with decimals: Problem type 1  
 arith746 Order of operations with decimals: Problem type 2  
 arith747 Order of operations with decimals: Problem type 3  
 arith748 Addition or subtraction with a decimal and a mixed number  
 arith749 Multiplication with a decimal and a fraction  
 alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
 alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
 alge800 Additive property of equality with decimals  
 alge825 Multiplicative property of equality with decimals

### Ratios, Proportions, and Measurement

arith823 Writing ratios using different notations  
 arith663 Writing ratios for real-world situations  
 arith450 Identifying statements that describe a ratio  
 arith824 Simplifying a ratio of whole numbers: Problem type 1  
 arith825 Simplifying a ratio of decimals  
 arith827 Finding a unit price  
 arith455 Using tables to compare ratios  
 arith828 Computing unit prices to find the better buy  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 arith505 Word problem on unit rates associated with ratios of fractions  
 arith506 Word problem on unit rates associated with ratios of mixed numbers  
 arith064 Solving a word problem on proportions using a unit rate  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 arith452 Finding missing values in a table of equivalent ratios  
 arith453 Using a table of equivalent ratios to find a missing quantity in a ratio  
 arith504 Writing an equation to represent a proportional relationship  
 alge819 Solving a proportion of the form  $x/a=b/c$ : Basic  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 arith610 Word problem on proportions: Problem type 1

arith611 Word problem on proportions: Problem type 2  
 arith045 Word problem with powers of ten  
 arith500 Identifying proportional relationships in tables by calculating unit rates: Whole numbers  
 arith510 Identifying proportional relationships in tables by calculating unit rates: Fractions  
 geom359 Identifying congruent shapes on a grid  
 geom360 Identifying similar or congruent shapes on a grid  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom538 Finding lengths using scale models  
 geom539 Finding a scale factor: Same units  
 geom541 Using a scale drawing to find actual area  
 geom542 Reproducing a scale drawing at a different scale  
 mstat058 Choosing a measuring tool  
 mstat059 Choosing U.S. Customary measurement units  
 mstat033 Measuring length to the nearest inch  
 mstat034 Measuring length to the nearest quarter or half inch  
 unit005 U.S. Customary unit conversion with whole number values  
 mstat035 Conversions involving measurements in feet and inches  
 mstat036 Adding measurements in feet and inches  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 unit007 U.S. Customary unit conversion with mixed number values: One-step conversion  
 unit008 U.S. Customary unit conversion with mixed number values: Two-step conversion  
 unit009 U.S. Customary area unit conversion with whole number values  
 mstat060 Choosing metric measurement units  
 mstat063 Measuring length to the nearest centimeter  
 mstat064 Measuring length to the nearest millimeter  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit012 Time unit conversion with whole number values  
 time009 Introduction to adding time  
 time006 Adding time  
 time011 Introduction to elapsed time  
 time007 Elapsed time  
 mstat062 Reading a positive temperature from a thermometer  
 mstat038 Reading the temperature from a thermometer  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 arith826 Simplifying a ratio of whole numbers: Problem type 2  
 alge218 Solving a word problem involving rates and time conversion  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced

### Percents

arith836 Converting a fraction with a denominator of 100 to a percentage  
 arith837 Converting a percentage to a fraction with a denominator of 100  
 arith674 Finding the percentage of a grid that is shaded  
 arith903 Representing benchmark percentages on a grid  
 arith723 Introduction to converting a percentage to a decimal  
 arith833 Introduction to converting a decimal to a percentage  
 arith834 Converting between percentages and decimals  
 arith841 Converting a mixed number percentage to a decimal  
 arith835 Converting between percentages and decimals in a real-world situation  
 arith090 Converting a percentage to a fraction in simplest form  
 arith839 Converting a decimal percentage to a fraction  
 arith838 Converting a fraction to a percentage: Denominator of 4, 5, or 10

arith904 Finding benchmark fractions and percentages for a figure  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith843 Using a calculator to convert a fraction to a rounded percentage  
 arith842 Converting a fraction to a percentage in a real-world situation  
 arith840 Finding a percentage of a whole number  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith844 Finding a percentage of a whole number without a calculator: Advanced  
 arith862 Applying the percent equation: Problem type 1  
 arith863 Applying the percent equation: Problem type 2  
 arith845 Finding a percentage of a total amount: Real-world situations  
 arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount  
 arith857 Estimating a tip without a calculator  
 arith069 Writing a ratio as a percentage without a calculator  
 arith850 Finding the rate of a tax or commission  
 arith849 Finding the total amount given the percentage of a partial amount  
 stat805 Making a reasonable inference based on proportion statistics  
 stat804 Interpreting a circle graph or pie chart  
 arith856 Finding a percentage of a total amount in a circle graph  
 stat801 Computations from a circle graph  
 arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
 arith851 Finding the final amount given the original amount and a percentage increase or decrease  
 arith847 Finding the sale price given the original price and percent discount  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith848 Finding the total cost including tax or markup  
 arith855 Finding the original amount given the result of a percentage increase or decrease  
 arith031 Finding the original price given the sale price and percent discount  
 arith858 Finding the percentage increase or decrease: Basic  
 arith225 Finding the percentage increase or decrease: Advanced  
 unit052 Finding the absolute error and percent error of a measurement  
 arith232 Finding simple interest without a calculator  
 arith853 Introduction to compound interest  
 arith915 Calculating income tax  
 arith918 Comparing discounts  
 arith909 Examining a savings plan for college  
 arith914 Calculations involving paying for college  
 arith920 Comparing total costs for attending different colleges  
 arith922 Distinguishing between fixed and variable expenses  
 arith916 Computing percentages for categories of a budget  
 arith919 Computations involving cost of living and hourly wage  
 arith921 Comparing annual salaries of different occupations  
 arith911 Calculations involving purchases with debit and credit cards  
 arith950 Comparing costs of checking accounts  
 arith951 Balancing a check register  
 arith912 Reading a credit report  
 arith913 Understanding the impact of a credit score  
 arith917 Computing a person's net worth  
 arith906 Calculating and comparing monthly payments using the ALEKS loan calculator  
 arith907 Calculating monthly payment, total payment, and interest using the ALEKS loan calculator  
 arith908 Calculating and comparing total loan payments using the ALEKS loan calculator  
 arith910 Calculating and comparing simple interest and compound interest

### Equations and Inequalities

alge647 Identifying like terms  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 arith655 Introduction to properties of addition  
 alge187 Properties of addition  
 alge666 Combining like terms: Fractional coefficients  
 alge665 Combining like terms: Decimal coefficients

alge310 Multiplying a constant and a linear monomial  
alge606 Distributive property: Whole number coefficients  
alge604 Distributive property: Integer coefficients  
alge610 Distributive property: Fractional coefficients  
alge605 Factoring a linear binomial  
alge612 Identifying parts in an algebraic expression  
alge613 Identifying equivalent algebraic expressions  
arith656 Introduction to properties of multiplication  
alge188 Properties of real numbers  
alge608 Using distribution and combining like terms to simplify: Univariate  
alge667 Identifying properties used to simplify an algebraic expression  
alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
alge293 Combining like terms in a quadratic expression  
alge436 Adding rational expressions with different denominators and a single occurrence of a variable  
alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
alge803 Using two steps to solve an equation with whole numbers  
alge266 Additive property of equality with a negative coefficient  
alge006 Solving a two-step equation with integers  
alge200 Solving an equation to find the value of an expression  
alge920 Introduction to solving an equation with parentheses  
alge837 Solving a multi-step equation given in fractional form  
alge986 Identifying properties used to solve a linear equation  
alge824 Solving a two-step equation with signed decimals  
alge838 Introduction to solving an equation with variables on the same side  
alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
alge611 Introduction to solving a linear equation with a variable on each side  
alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
alge614 Clearing fractions in an equation  
alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
alge208 Solving a two-step equation with signed fractions  
alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
alge742 Solving equations with zero, one, or infinitely many solutions  
alge840 Solving a proportion of the form  $(x+a)\div b = c\div d$   
alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
alge658 Introduction to solving a rational equation  
alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
alge603 Introduction to solving an absolute value equation  
alge864 Solving an absolute value equation: Problem type 1  
alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
alge518 Solving for a variable inside parentheses in terms of other variables  
alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
alge016 Translating a sentence into a one-step equation  
alge671 Choosing stories that can be represented by given one-step equations  
alge841 Translating a sentence into a multi-step equation  
alge628 Writing an equation of the form  $Ax + B = C$  to solve a word problem  
alge618 Comparing arithmetic and algebraic solutions to a word problem  
alge672 Choosing stories that can be represented by given two-step equations  
alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
alge629 Writing an equation of the form  $A(x + B) = C$  to solve a word problem



alge014 Solving a word problem with two unknowns using a linear equation  
 alge673 Writing an equation to represent a real-world problem: Variable on both sides  
 alge674 Writing and solving a real-world problem given an equation with the variable on both sides  
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge792 Solving a word problem with three unknowns using a linear equation  
 alge842 Solving a word problem involving consecutive integers  
 alge794 Solving a value mixture problem using a linear equation  
 alge795 Solving a percent mixture problem using a linear equation  
 alge796 Solving a distance, rate, time problem using a linear equation  
 alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge653 Introduction to identifying solutions to an inequality  
 alge748 Writing an inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line  
 alge652 Identifying solutions to a one-step linear inequality  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge809 Multiplicative property of inequality with whole numbers  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge621 Solving a word problem using a one-step linear inequality  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge636 Solving a two-step linear inequality with whole numbers  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge846 Translating a sentence into a multi-step inequality  
 alge619 Solving a word problem using a two-step linear inequality and describing the solution  
 alge623 Solving a word problem using a two-step linear inequality  
 alge749 Solving a decimal word problem using a two-step linear inequality

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alge278 Reading a point in quadrant 1  
 alge279 Plotting a point in quadrant 1  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge692 Plotting a point in quadrant 1: Mixed number coordinates  
 alge693 Plotting a point in the coordinate plane: Mixed number coordinates  
 arith404 Naming the quadrant or axis of a point given its graph  
 arith405 Naming the quadrant or axis of a point given its coordinates  
 arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
 alge695 Finding distances between points that share a common coordinate given the graph  
 alge696 Finding distances between points that share a common coordinate given their coordinates  
 alge191 Midpoint of a line segment in the plane  
 alge282 Function tables with two-step rules  
 alge850 Table for a linear equation  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 alge873 Identifying solutions to a linear equation in two variables

alge066 Finding a solution to a linear equation in two variables  
alge280 Graphing a line in quadrant 1  
alge877 Graphing a linear equation of the form  $y = mx$   
alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
alge880 Graphing a line given its equation in standard form  
alge198 Graphing a vertical or horizontal line  
alge884 Finding x- and y-intercepts given the graph of a line on a grid  
alge924 Finding x- and y-intercepts of a line given the equation: Basic  
alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
alge197 Graphing a line given its x- and y-intercepts  
alge881 Graphing a line by first finding its x- and y-intercepts  
alge874 Identifying linear functions given ordered pairs  
geom358 Identifying parallel and perpendicular lines  
mstat007 Interpreting a line graph  
arith454 Making a table and plotting points given a unit rate  
arith501 Identifying proportional relationships in graphs: Basic  
arith502 Identifying proportional relationships in graphs: Advanced  
arith512 Finding outputs and rate of increase given the graph of a line that models a real-world situation  
alge699 Comparing proportional relationships given in different forms  
alge575 Finding slope given the graph of a line in quadrant 1 that models a real-world situation  
alge875 Classifying slopes given graphs of lines  
alge886 Finding slope given the graph of a line on a grid  
alge887 Finding slope given two points on the line  
alge885 Finding the slope of horizontal and vertical lines  
alge814 Using right triangles to find the slope of a line  
alge888 Finding the coordinate that yields a given slope  
alge259 Graphing a line given its slope and y-intercept  
alge196 Graphing a line through a given point with a given slope  
alge982 Identifying direct variation equations  
alge938 Identifying direct variation from ordered pairs and writing equations  
alge904 Writing a direct variation equation  
alge175 Word problem on direct variation  
alge828 Interpreting direct variation from a graph  
alge905 Writing an inverse variation equation  
alge903 Identifying direct and inverse variation equations  
alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
alge176 Word problem on inverse variation  
alge220 Word problem on inverse proportions  
alge625 Identifying linear equations: Basic  
alge891 Rewriting a linear equation in the form  $Ax + By = C$   
alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
alge882 Graphing a line by first finding its slope and y-intercept  
alge258 Writing an equation of a line given its slope and y-intercept  
alge892 Writing an equation and graphing a line given its slope and y-intercept  
alge893 Writing an equation in slope-intercept form given the slope and a point  
alge883 Graphing a line given its equation in point-slope form  
alge894 Writing an equation in point-slope form given the slope and a point  
alge070 Writing an equation of a line given the y-intercept and another point  
alge072 Writing the equation of the line through two given points  
alge073 Writing the equations of vertical and horizontal lines through a given point  
geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
alge895 Identifying parallel and perpendicular lines from equations  
geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
alge630 Finding outputs of a one-step function that models a real-world situation: Two variable equation  
alge632 Finding outputs of a two-step function with decimals that models a real-world situation: Two variable equation  
alge633 Finding inputs and outputs of a two-step function that models a real-world situation: Two variable equation  
alge655 Writing and evaluating a function that models a real-world situation: Basic

alge897 Writing and evaluating a function that models a real-world situation: Advanced  
 alge654 Graphing ordered pairs and writing an equation from a table of values in context  
 alge656 Writing an equation and drawing its graph to model a real-world situation: Basic  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge817 Finding the initial amount and rate of change given a table for a linear function  
 alge818 Finding the initial amount and rate of change given a graph of a linear function  
 alge987 Comparing properties of linear functions given in different forms  
 alge989 Interpreting the parameters of a linear function that models a real-world situation  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 alge670 Identifying independent and dependent quantities from tables and graphs  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun016 Domain and range from ordered pairs  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 alge294 Finding outputs of a one-step function that models a real-world situation: Function notation  
 alge295 Finding outputs of a two-step function with decimals that models a real-world situation: Function notation  
 alge296 Finding inputs and outputs of a two-step function that models a real-world situation: Function notation  
 alge990 Domain and range of a linear function that models a real-world situation  
 fun026 Finding an output of a function from its graph  
 pcalc761 Finding inputs and outputs of a function from its graph  
 fun007 Domain and range from the graph of a discrete relation  
 alge896 Graphing an integer function and finding its range for a given domain  
 alge570 Graphing a function of the form  $f(x) = ax + b$ : Integer slope  
 alge571 Graphing a function of the form  $f(x) = ax + b$ : Fractional slope  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 mstat018 Choosing a graph to fit a narrative: Basic  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge913 Graphing an absolute value equation of the form  $y = A|x - h| + k$   
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge954 Graphing a parabola of the form  $y = ax^2$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge732 Finding patterns in shapes  
 alge644 Finding the first terms of an arithmetic sequence using an explicit rule  
 alge645 Finding the first terms of a geometric sequence using an explicit rule  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge914 Identifying solutions to a system of linear equations  
 alge725 Graphically solving a system of linear equations  
 alge815 Introduction to using substitution to solve a linear equation  
 alge816 Solving a system of linear equations of the form  $y = mx + b$   
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge634 Solving systems of linear equations with 0, 1, or infinitely many solutions  
 alge263 Interpreting the graphs of two functions

alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 pcalc038 Addition or subtraction of matrices  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced

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alge686 Introduction to the product rule with positive exponents: Whole number base  
 alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge311 Product rule with positive exponents: Univariate  
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 alge690 Introduction to the power of a power rule with positive exponents: Whole number base  
 alge826 Understanding the power rules of exponents  
 alge306 Introduction to the power of a power rule of exponents  
 alge305 Introduction to the power of a product rule of exponents  
 alge307 Power rules with positive exponents: Multivariate products  
 alge308 Power rules with positive exponents: Multivariate quotients  
 alge451 Simplifying a ratio of multivariate monomials: Basic  
 alge688 Introduction to the quotient rule with positive exponents: Whole number base  
 alge827 Introduction to the quotient rule of exponents  
 alge452 Simplifying a ratio of univariate monomials  
 alge026 Quotient of expressions involving exponents  
 arith029 Ordering numbers with positive exponents  
 arith684 Power of 10: Negative exponent  
 arith729 Evaluating an expression with a negative exponent: Whole number base  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge687 Introduction to the product rule with negative exponents: Whole number base  
 alge961 Introduction to the product rule with negative exponents  
 alge689 Introduction to the quotient rule with negative exponents: Whole number base  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge691 Introduction to the power of a power rule with negative exponents: Whole number base  
 alge025 Power of a power rule with negative exponents  
 scinot023 Introduction to scientific notation with positive exponents  
 arith036 Scientific notation with positive exponent  
 scinot024 Introduction to scientific notation with negative exponents  
 arith037 Scientific notation with negative exponent  
 scinot012 Converting between scientific notation and standard form in a real-world situation  
 scinot025 Estimating numbers using scientific notation  
 scinot020 Choosing metric units and converting to the base unit in scientific notation  
 scinot021 Expressing calculator notation as scientific notation  
 scinot008 Multiplying numbers written in scientific notation: Basic  
 scinot009 Multiplying numbers written in scientific notation: Advanced  
 scinot019 Multiplying numbers written in decimal form or scientific notation in a real-world situation  
 scinot010 Dividing numbers written in scientific notation: Basic  
 scinot011 Dividing numbers written in scientific notation: Advanced  
 scinot013 Finding the scale factor between numbers given in scientific notation in a real-world situation  
 scinot015 Adding or subtracting numbers written in scientific notation: Same exponents, basic  
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 scinot016 Adding or subtracting numbers written in scientific notation: Different exponents

scinot017 Estimating the sum or difference of two numbers written in scientific notation  
 alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge032 Squaring a binomial: Univariate  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge736 Introduction to the GCF of two monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 arith016 Square root of a perfect square  
 arith601 Square root of a rational perfect square  
 alge413 Finding all square roots of a number  
 arith760 Square roots of perfect squares with signs  
 arith763 Using a calculator to approximate a square root  
 arith602 Estimating a square root  
 alge567 Using numerical methods to approximate a square root to the nearest tenth  
 alge568 Using numerical methods to approximate a square root to the nearest hundredth  
 arith515 Approximating the location of irrational numbers on a number line  
 arith712 Ordering real numbers  
 alge001 Identifying numbers as integers or non-integers  
 arith513 Identifying rational decimal numbers  
 arith514 Converting a repeating decimal to a fraction  
 arith432 Identifying true statements about rational and irrational numbers  
 alge002 Identifying numbers as rational or irrational  
 alge415 Introduction to simplifying a radical expression with an even exponent  
 alge264 Square root of a perfect square monomial  
 arith093 Simplifying the square root of a whole number less than 100  
 arith762 Simplifying the square root of a whole number greater than 100  
 alge080 Simplifying a radical expression with an even exponent  
 arith767 Introduction to square root addition or subtraction  
 arith032 Square root addition or subtraction  
 arith764 Introduction to square root multiplication  
 arith765 Square root multiplication: Basic  
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 geom564 Finding side lengths of squares given an area and a perimeter  
 alge400 Introduction to solving a radical equation  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge542 Word problem involving radical equations: Basic  
 arith094 Cube root of an integer  
 alge698 Solving an equation of the form  $x^3 = a$  using integers  
 alge093 Solving an equation using the odd-root property: Problem type 1  
 geom565 Finding the side length of a cube given its volume  
 alge560 Rational exponents: Unit fraction exponents and whole number bases  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem  
 geom862 Using the Pythagorean Theorem repeatedly

alge675 Using the Pythagorean Theorem to find distance on a grid  
 alge132 Distance between two points in the plane: Exact answers

### Angles, Lines, and Polygons

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 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom551 Finding the complement or supplement of an angle given a figure  
 geom552 Solving an equation involving complementary or supplementary angles  
 geom305 Identifying supplementary and vertical angles  
 geom553 Finding angle measures given two intersecting lines  
 geom530 Solving equations involving vertical angles  
 geom304 Identifying corresponding and alternate angles  
 geom349 Naming segments, rays, and lines  
 geom554 Finding angle measures given two parallel lines cut by a transversal  
 geom531 Solving equations involving angles and a pair of parallel lines  
 geom584 Establishing facts about the angles created when parallel lines are cut by a transversal  
 geom154 Constructing the perpendicular bisector of a line segment  
 geom158 Constructing an angle bisector  
 geom159 Constructing congruent angles  
 geom150 Constructing a pair of perpendicular lines  
 geom157 Constructing a pair of parallel lines  
 geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom860 Special right triangles: Decimal answers  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom623 Finding angle measures of a triangle given angles with variables  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 geom309 Finding an angle measure for a triangle sharing a side with another triangle  
 geom586 Establishing facts about the interior angles of a triangle  
 geom587 Establishing facts about the interior and exterior angles of a triangle  
 geom543 Drawing a circle with a given radius or diameter  
 geom544 Creating triangles from given side lengths: Problem type 1  
 geom634 Creating triangles from given side lengths: Problem type 2  
 geom844 Using triangle inequality to determine if side lengths form a triangle  
 geom548 Determining if a triangle is possible based on given angle measures  
 geom549 Determining if given measurements define a unique triangle, more than one triangle, or no triangle  
 geom546 Drawing triangles with given conditions: Angle measures  
 geom547 Drawing triangles with given conditions: Side lengths and angle measures  
 geom545 Drawing triangles with given side lengths using a compass  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 geom361 Naming polygons  
 mstat042 Interpreting a Venn diagram of 2 sets  
 geom536 Drawing and identifying a polygon in the coordinate plane  
 geom867 Identifying parallelograms, rectangles, and squares  
 geom310 Properties of quadrilaterals  
 geom532 Classifying parallelograms  
 geom818 Finding the coordinates of a point to make a parallelogram



geom870 Sum of the angle measures of a quadrilateral  
 geom852 The sum of interior angle measures in a convex polygon

### Transformations

geom519 Identifying and naming congruent parts of congruent triangles  
 geom520 Identifying and naming congruent triangles  
 geom583 Finding angle measures of a triangle given two angles of a similar triangle  
 geom585 Finding angle measures and side ratios to determine if two triangles are similar  
 geom357 Identifying transformations  
 geom596 Translating a point and giving its coordinates: One step  
 geom909 Translating a point and giving its coordinates: Two steps  
 geom597 Properties of translated figures  
 geom598 Determining if figures are related by a translation  
 geom330 Translating a polygon  
 geom331 Using a translated point to find coordinates of other translated points  
 arith408 Reflecting a point across an axis  
 geom533 Reflecting a point across both coordinate axes  
 geom590 Reflecting a point across an axis and giving its coordinates  
 arith407 Finding the coordinates of a point reflected across an axis  
 geom560 Finding the coordinates of a point reflected across both axes  
 geom534 Reflecting a polygon across the x-axis or y-axis  
 geom591 Properties of reflected figures  
 geom592 Determining if figures are related by a reflection  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom333 Finding the coordinates of three points reflected over an axis  
 geom334 Drawing lines of symmetry  
 geom602 Finding the coordinates of a point reflected across an axis and translated  
 geom815 Finding an angle of rotation  
 geom624 Identifying rotational symmetry and angles of rotation  
 geom593 Rotating a point and giving its coordinates  
 geom594 Properties of rotated figures  
 geom595 Determining if figures are related by a rotation  
 geom335 Rotating a figure about the origin  
 geom580 Determining if figures are congruent and related by a transformation  
 geom581 Determining if figures are congruent and related by a sequence of transformations  
 geom606 Dilating a segment and giving the coordinates of its endpoints  
 geom607 The effect of dilation on side length  
 geom608 Determining if figures are related by a dilation  
 geom636 The effect of dilation on area  
 geom336 Dilating a figure  
 geom582 Determining if figures are similar and related by a sequence of transformations

### Perimeters, Areas, and Volumes

geom618 Perimeter of a polygon involving mixed numbers and fractions  
 geom078 Sides of polygons having the same perimeter  
 geom221 Finding the missing length in a figure  
 geom353 Perimeter of a piecewise rectangular figure  
 alge615 Writing algebraic expressions for the perimeter of a figure  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom561 Finding the dimensions of a rectangle given its perimeter and a relationship between sides  
 geom620 Area of a rectangle involving fractions  
 geom619 Area of a rectangle involving mixed numbers and fractions  
 geom350 Distinguishing between the area and perimeter of a rectangle  
 geom351 Areas of rectangles with the same perimeter  
 geom869 Estimates and exact answers



alge616 Writing algebraic expressions for the area of a figure  
geom410 Word problem involving the area of a square or a rectangle  
geom143 Finding the perimeter or area of a rectangle given one of these values  
geom340 Area of a piecewise rectangular figure  
geom562 Area between two rectangles  
geom142 Word problem involving the area between two rectangles  
geom501 Finding the area of a right triangle on a grid  
geom509 Finding the area of a right triangle or its corresponding rectangle  
geom801 Area of a triangle  
geom517 Finding the area of a trapezoid on a grid by using triangles and rectangles  
geom344 Area involving rectangles and triangles  
alge724 Finding an area in terms of variables  
geom022 Area of a parallelogram  
geom023 Area of a trapezoid  
geom537 Finding the perimeter or area of a rectangle in the coordinate plane  
geom832 Area of quadrilaterals in the coordinate plane  
geom603 Identifying side lengths that give right triangles  
geom589 Demonstrating the converse of the Pythagorean Theorem  
geom588 Informal proof of the Pythagorean Theorem  
geom347 Introduction to a circle: Diameter, radius, and chord  
geom343 Identifying central angles, inscribed angles, arcs, chords, and tangents of a circle  
geom016 Circumference of a circle  
geom218 Finding the radius or the diameter of a circle given its circumference  
geom838 Circumference ratios  
geom301 Perimeter involving rectangles and circles  
geom026 Area of a circle  
geom802 Circumference and area of a circle  
geom570 Distinguishing between the area and circumference of a circle  
geom302 Area involving rectangles and circles  
geom563 Area between two concentric circles  
geom036 Word problem involving the area between two concentric circles  
geom214 Area involving inscribed figures  
geom126 Area of a sector of a circle: Exact answer in terms of  $\pi$   
geom868 Classifying solids  
geom348 Vertices, edges, and faces of a solid  
geom830 Counting the cubes in a solid made of cubes  
geom816 Side views of a solid made of cubes  
geom550 Identifying horizontal and vertical cross sections of solids  
geom354 Volume of a rectangular prism made of unit cubes  
geom518 Volume of a solid made of cubes with unit fraction edge lengths  
geom535 Volume of a rectangular prism with fractional edge lengths  
alge617 Writing equivalent expressions for the volume of a rectangular prism  
geom571 Word problem involving the volume of a rectangular prism  
geom558 Word problem involving the rate of filling or emptying a rectangular prism  
geom505 Volume of a piecewise rectangular prism  
geom090 Volume of a triangular prism  
geom572 Word problem involving the volume of a triangular prism  
geom033 Volume of a pyramid  
geom637 Relating the volumes of a rectangular prism and a rectangular pyramid  
geom638 Relating the volumes of a triangular prism and a triangular pyramid  
geom035 Volume of a cylinder  
geom573 Word problem involving the volume of a cylinder  
geom092 Word problem involving the rate of filling or emptying a cylinder  
geom622 Volume of a cone  
geom086 Volume of a cone: Exact answers in terms of  $\pi$   
geom639 Relating the volumes of a cylinder and a cone  
geom575 Word problem involving the volume of a cone  
geom841 Volume of a sphere  
geom574 Word problem involving the volume of a sphere  
geom133 Ratio of volumes  
geom219 Nets of solids  
geom031 Surface area of a cube or a rectangular prism

geom632 Surface area of a rectangular prism made of unit cubes  
 geom555 Distinguishing between surface area and volume  
 geom556 Using a net to find the surface area of a rectangular prism  
 geom576 Word problem involving the surface area of a rectangular prism  
 geom345 Surface area of a piecewise rectangular prism made of unit cubes  
 geom091 Surface area of a triangular prism  
 geom557 Using a net to find the surface area of a triangular prism  
 geom621 Surface area of a cylinder  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom578 Word problem involving the surface area of a cylinder  
 geom842 Surface area of a sphere  
 geom338 Surface area involving prisms or cylinders  
 geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids  
 geom847 Similar solids: Problem type 2

### Data Analysis and Probability

mstat088 Identifying statistical questions  
 mstat080 Choosing an appropriate method for gathering data: Problem type 1  
 mstat081 Choosing an appropriate method for gathering data: Problem type 2  
 mstat056 Interpreting a tally table  
 mstat097 Constructing a two-way frequency table: Basic  
 mstat098 Constructing a two-way frequency table: Advanced  
 mstat049 Computing a percentage from a table of values  
 mstat087 Making an inference using a two-way frequency table  
 stat020 Calculating relative frequencies in a contingency table  
 mstat025 Finding if a question can be answered by the data  
 mstat037 Constructing a line plot  
 mstat005 Constructing a bar graph for non-numerical data  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat057 Interpreting a pictograph table  
 mstat031 Interpreting a stem-and-leaf plot  
 geom814 Angle measure in a circle graph  
 mstat094 Constructing a scatter plot  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 mstat068 Predictions from the line of best fit  
 mstat067 Approximating the equation of a line of best fit and making predictions  
 mstat093 Classifying linear and nonlinear relationships from scatter plots  
 mstat071 Linear relationship and the correlation coefficient  
 mstat096 Identifying outliers and clustering in scatter plots  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat092 Finding the mode and range from a line plot  
 mstat001 Mean of a data set  
 mstat077 Using a model to find the mean  
 mstat075 Understanding the mean graphically: Two bars  
 mstat076 Understanding the mean graphically: Four or more bars  
 mstat091 Finding the mean of a symmetric distribution  
 mstat079 Finding sample size and comparing samples for estimating the mean  
 mstat089 Computations involving the mean, sample size, and sum of a data set  
 stat803 Finding the value for a new score that will yield a given mean  
 stat802 Rejecting unreasonable claims based on average statistics  
 mstat066 Weighted mean  
 mstat028 Mean and median of a data set  
 mstat029 How changing a value affects the mean and median  
 mstat095 Finding outliers in a data set  
 mstat053 Choosing the best measure to describe data

mstat078 Comparing measures of center and variation  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat072 Five-number summary and interquartile range  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 mstat090 Comparing sample means  
 mstat082 Computing mean absolute deviation from a list of numerical values  
 mstat083 Computing mean absolute deviation from a bar graph  
 mstat084 Assessing the degree of overlap of two distributions  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 mstat099 Determining a sample space and outcomes for a simple event  
 mstat100 Determining a sample space and outcomes for a compound event  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 mstat054 Classifying likelihood  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat039 Understanding likelihood  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat085 Identifying outcomes in a random number table used to simulate a compound event  
 mstat086 Using a random number table to simulate a compound event

## B.89 CC Algebra 1

### Arithmetic Readiness

arith067 Simplifying a fraction  
 arith212 Equivalent fractions  
 arith711 Division involving zero  
 arith070 Least common multiple of 2 numbers  
 arith804 Least common multiple of 3 numbers  
 arith418 Word problem involving the least common multiple of 2 numbers  
 arith240 Word problem with common multiples  
 arith801 Finding the LCD of two fractions  
 arith664 Introduction to addition or subtraction of fractions with different denominators  
 arith230 Addition or subtraction of fractions with different denominators  
 arith803 Addition and subtraction of 3 fractions with different denominators  
 arith805 Word problem involving addition or subtraction of fractions with different denominators  
 arith100 Fractional part of a circle  
 arith079 Product of a unit fraction and a whole number  
 arith086 Product of a fraction and a whole number: Problem type 1  
 arith119 Introduction to fraction multiplication  
 arith053 Fraction multiplication  
 arith812 Product of a fraction and a whole number: Problem type 2  
 arith905 Determining if a quantity is increased or decreased when multiplied by a fraction  
 arith813 Multiplication of 3 fractions

arith818 Word problem involving fractions and multiplication  
arith095 Multi-step word problem involving fractions and multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith695 Complex fraction without variables: Problem type 1  
arith819 Word problem involving fractions and division  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith084 Addition of mixed numbers with the same denominator and carry  
arith216 Subtraction of mixed numbers with the same denominator and borrowing  
arith806 Addition or subtraction of mixed numbers with different denominators and no carry or borrow  
arith808 Addition of mixed numbers with different denominators and carry  
arith809 Subtraction of mixed numbers with different denominators and borrowing  
arith807 Addition and subtraction of 3 mixed numbers with different denominators  
arith810 Word problem involving addition or subtraction of mixed numbers with different denominators  
arith815 Mixed number multiplication  
arith816 Multiplication of a mixed number and a whole number  
arith817 Division with a mixed number and a whole number  
arith068 Mixed number division  
arith820 Word problem involving multiplication or division with mixed numbers  
arith110 Decimal place value: Tenths and hundredths  
arith078 Rounding to tens or hundreds  
arith123 Rounding to hundreds or thousands  
arith221 Rounding decimals  
arith687 Fractional position on a number line  
arith092 Using a common denominator to order fractions  
arith829 Reading decimal position on a number line: Tenths  
arith830 Reading decimal position on a number line: Hundredths  
arith129 Introduction to ordering decimals  
arith608 Ordering decimals  
arith733 Using a calculator to convert a fraction to a rounded decimal  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith724 Converting a decimal to a mixed number and an improper fraction in simplest form: Advanced  
arith609 Ordering fractions and decimals  
arith624 Addition of aligned decimals  
arith013 Decimal addition with 3 numbers  
arith735 Decimal subtraction: Basic  
arith736 Decimal subtraction: Advanced  
arith737 Decimal addition and subtraction with 3 or more numbers  
arith101 Estimating a sum of whole numbers  
arith131 Estimating a decimal sum or difference  
arith133 Word problem with addition of 3 or 4 decimals and whole numbers  
arith134 Word problem with subtraction of a whole number and a decimal: Regrouping with zeros  
arith017 Multiplication of a decimal by a whole number  
arith055 Decimal multiplication: Problem type 1  
arith082 Multiplication of a decimal by a power of ten  
arith752 Estimating a product of decimals  
arith135 Word problem with multiplication of a decimal and a whole number  
arith137 Word problem with multiplication of two decimals  
arith628 Word problem with multiple decimal operations: Problem type 1  
arith081 Division of a decimal by a whole number  
arith743 Division of a decimal by a 1-digit decimal  
arith019 Division of a decimal by a 2-digit decimal  
arith083 Division of a decimal by a power of ten  
arith138 Word problem with division of two decimals  
arith727 Converting a fraction to a terminating decimal: Basic  
arith728 Converting a fraction to a terminating decimal: Advanced  
arith730 Converting a fraction to a repeating decimal: Basic  
arith731 Converting a fraction to a repeating decimal: Advanced  
arith823 Writing ratios using different notations  
arith663 Writing ratios for real-world situations

arith450 Identifying statements that describe a ratio  
 arith824 Simplifying a ratio of whole numbers: Problem type 1  
 arith825 Simplifying a ratio of decimals  
 arith827 Finding a unit price  
 arith455 Using tables to compare ratios  
 arith828 Computing unit prices to find the better buy  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 arith064 Solving a word problem on proportions using a unit rate  
 arith452 Finding missing values in a table of equivalent ratios  
 arith453 Using a table of equivalent ratios to find a missing quantity in a ratio  
 arith834 Converting between percentages and decimals  
 arith090 Converting a percentage to a fraction in simplest form  
 arith839 Converting a decimal percentage to a fraction  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith843 Using a calculator to convert a fraction to a rounded percentage  
 arith840 Finding a percentage of a whole number  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith844 Finding a percentage of a whole number without a calculator: Advanced  
 arith845 Finding a percentage of a total amount: Real-world situations  
 arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount  
 arith857 Estimating a tip without a calculator  
 arith686 Writing a ratio as a percentage  
 arith069 Writing a ratio as a percentage without a calculator  
 arith850 Finding the rate of a tax or commission  
 unit005 U.S. Customary unit conversion with whole number values  
 unit001 Metric distance conversion with whole number values  
 unit012 Time unit conversion with whole number values  
 arith826 Simplifying a ratio of whole numbers: Problem type 2  
 unit034 Converting between metric and U.S. Customary unit systems

## Real Numbers

alge286 Plotting integers on a number line  
 arith691 Ordering integers  
 arith415 Using a number line to compare integers  
 mstat038 Reading the temperature from a thermometer  
 arith699 Writing a signed number for a real-world situation  
 arith400 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 1  
 arith511 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 2  
 arith416 Comparing signed numbers relating to a real-world situation  
 arith402 Plotting opposite integers on a number line  
 arith403 Finding opposites of integers  
 arith667 Plotting fractions on a number line  
 arith605 Plotting rational numbers on a number line  
 arith016 Square root of a perfect square  
 arith763 Using a calculator to approximate a square root  
 arith515 Approximating the location of irrational numbers on a number line  
 arith712 Ordering real numbers  
 arith071 Absolute value of a number  
 arith412 Finding all numbers with a given absolute value  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith430 Identifying relative change when combining two quantities  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith754 Addition and subtraction with 3 integers  
 arith755 Addition and subtraction with 4 or 5 integers  
 arith701 Word problem with addition or subtraction of integers  
 arith231 Integer multiplication and division

arith800 Multiplication of 3 or 4 integers  
arith952 Word problem with multiplication or division of integers  
alge660 Identifying equivalent signed fractions  
arith116 Signed fraction addition or subtraction: Basic  
arith864 Signed fraction subtraction involving double negation  
arith106 Signed fraction addition or subtraction: Advanced  
arith811 Addition and subtraction of 3 fractions involving signs  
arith822 Signed fraction multiplication: Basic  
arith105 Signed fraction multiplication: Advanced  
arith814 Signed fraction division  
arith117 Signed decimal addition and subtraction  
arith234 Signed decimal addition and subtraction with 3 numbers  
arith750 Signed decimal multiplication  
arith751 Signed decimal division  
arith440 Operations with absolute value: Problem type 1  
arith104 Operations with absolute value: Problem type 2  
alge694 Computing the distance between two integers on a number line  
arith692 Writing expressions using exponents  
arith233 Introduction to exponents  
arith683 Power of 10: Positive exponent  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
arith821 Exponents and fractions  
arith859 Order of operations with fractions: Problem type 1  
arith860 Order of operations with fractions: Problem type 2  
arith861 Order of operations with fractions: Problem type 3  
arith753 Squaring decimal bases: Products greater than 0.1  
arith741 Exponents and decimals: Products less than 0.1  
arith720 Order of operations with decimals: Problem type 1  
arith746 Order of operations with decimals: Problem type 2  
arith747 Order of operations with decimals: Problem type 3  
arith702 Exponents and integers: Problem type 1  
arith703 Exponents and integers: Problem type 2  
arith704 Exponents and signed fractions  
arith118 Order of operations with integers  
arith600 Order of operations with integers and exponents  
alge284 Evaluating an algebraic expression: Whole number addition or subtraction  
alge683 Evaluating an algebraic expression: Whole number multiplication or division  
alge285 Evaluating an algebraic expression: Whole numbers with two operations  
alge649 Evaluating a formula  
alge648 Evaluating an algebraic expression: Whole numbers with one operation and an exponent  
alge832 Evaluating an algebraic expression: Whole number operations and exponents  
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
alge004 Evaluating a quadratic expression: Integers  
mstat065 Converting between temperatures in Fahrenheit and Celsius  
alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
alge001 Identifying numbers as integers or non-integers  
arith513 Identifying rational decimal numbers  
arith432 Identifying true statements about rational and irrational numbers  
alge002 Identifying numbers as rational or irrational  
alge700 Combining like terms: Whole number coefficients  
alge432 Introduction to adding fractions with variables and common denominators  
alge607 Combining like terms: Integer coefficients  
alge187 Properties of addition  
alge666 Combining like terms: Fractional coefficients  
alge665 Combining like terms: Decimal coefficients  
arith409 Introduction to the distributive property  
arith657 Understanding the distributive property

alge310 Multiplying a constant and a linear monomial  
alge606 Distributive property: Whole number coefficients  
alge604 Distributive property: Integer coefficients  
alge610 Distributive property: Fractional coefficients  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith516 Greatest common factor of 3 numbers  
alge605 Factoring a linear binomial  
alge612 Identifying parts in an algebraic expression  
alge613 Identifying equivalent algebraic expressions  
alge188 Properties of real numbers  
alge608 Using distribution and combining like terms to simplify: Univariate  
alge667 Identifying properties used to simplify an algebraic expression  
alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
alge293 Combining like terms in a quadratic expression  
alge650 Identifying solutions to a one-step linear equation: Problem type 1  
alge651 Identifying solutions to a one-step linear equation: Problem type 2  
alge009 Additive property of equality with whole numbers  
alge801 Additive property of equality with fractions and mixed numbers  
alge800 Additive property of equality with decimals  
alge010 Additive property of equality with integers  
alge836 Additive property of equality with signed fractions  
alge008 Multiplicative property of equality with whole numbers  
alge646 Multiplicative property of equality with whole numbers: Fractional answers  
alge820 Multiplicative property of equality with fractions  
alge825 Multiplicative property of equality with decimals  
alge797 Multiplicative property of equality with integers  
alge012 Multiplicative property of equality with signed fractions  
geom300 Perimeter of a square or a rectangle  
geom221 Finding the missing length in a figure  
alge615 Writing algebraic expressions for the perimeter of a figure  
geom019 Area of a square or a rectangle  
geom340 Area of a piecewise rectangular figure  
geom562 Area between two rectangles  
alge616 Writing algebraic expressions for the area of a figure  
geom410 Word problem involving the area of a square or a rectangle  
geom142 Word problem involving the area between two rectangles  
geom022 Area of a parallelogram  
geom801 Area of a triangle  
geom023 Area of a trapezoid  
geom016 Circumference of a circle  
geom301 Perimeter involving rectangles and circles  
geom026 Area of a circle  
geom802 Circumference and area of a circle  
geom477 Circumference and area of a circle: Exact answers in terms of pi  
geom302 Area involving rectangles and circles  
geom563 Area between two concentric circles  
geom036 Word problem involving the area between two concentric circles  
geom214 Area involving inscribed figures  
geom311 Volume of a rectangular prism  
geom571 Word problem involving the volume of a rectangular prism  
geom558 Word problem involving the rate of filling or emptying a rectangular prism  
geom090 Volume of a triangular prism  
geom035 Volume of a cylinder  
geom573 Word problem involving the volume of a cylinder  
geom092 Word problem involving the rate of filling or emptying a cylinder  
geom033 Volume of a pyramid  
geom622 Volume of a cone  
geom086 Volume of a cone: Exact answers in terms of pi  
geom841 Volume of a sphere



geom031 Surface area of a cube or a rectangular prism  
 geom091 Surface area of a triangular prism  
 geom621 Surface area of a cylinder  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom842 Surface area of a sphere

## Linear Equations

alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge803 Using two steps to solve an equation with whole numbers  
 alge266 Additive property of equality with a negative coefficient  
 alge006 Solving a two-step equation with integers  
 alge815 Introduction to using substitution to solve a linear equation  
 alge200 Solving an equation to find the value of an expression  
 alge920 Introduction to solving an equation with parentheses  
 alge837 Solving a multi-step equation given in fractional form  
 alge986 Identifying properties used to solve a linear equation  
 alge824 Solving a two-step equation with signed decimals  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge611 Introduction to solving a linear equation with a variable on each side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge614 Clearing fractions in an equation  
 alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
 alge208 Solving a two-step equation with signed fractions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
 alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
 alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
 alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
 alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
 alge518 Solving for a variable inside parentheses in terms of other variables  
 alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
 alge603 Introduction to solving an absolute value equation  
 alge864 Solving an absolute value equation: Problem type 1  
 alge865 Solving an absolute value equation: Problem type 2  
 alge866 Solving an absolute value equation: Problem type 3  
 alge867 Solving an absolute value equation: Problem type 4  
 alge733 Writing a one-step expression for a real-world situation  
 alge831 Translating a phrase into a one-step expression  
 alge291 Translating a phrase into a two-step expression  
 alge016 Translating a sentence into a one-step equation  
 alge841 Translating a sentence into a multi-step equation  
 arith504 Writing an equation to represent a proportional relationship  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge671 Choosing stories that can be represented by given one-step equations  
 alge628 Writing an equation of the form  $Ax + B = C$  to solve a word problem  
 alge618 Comparing arithmetic and algebraic solutions to a word problem  
 alge672 Choosing stories that can be represented by given two-step equations

alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
alge629 Writing an equation of the form  $A(x + B) = C$  to solve a word problem  
alge014 Solving a word problem with two unknowns using a linear equation  
alge673 Writing an equation to represent a real-world problem: Variable on both sides  
alge674 Writing and solving a real-world problem given an equation with the variable on both sides  
alge730 Writing a multi-step equation for a real-world situation  
alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
alge792 Solving a word problem with three unknowns using a linear equation  
alge842 Solving a word problem involving consecutive integers  
alge794 Solving a value mixture problem using a linear equation  
alge218 Solving a word problem involving rates and time conversion  
alge823 Solving a one-step word problem using the formula  $d = rt$   
alge796 Solving a distance, rate, time problem using a linear equation  
unit035 Converting between compound units: Basic  
unit036 Converting between compound units: Advanced  
arith514 Converting a repeating decimal to a fraction  
alge819 Solving a proportion of the form  $x/a=b/c$ : Basic  
alge272 Solving a proportion of the form  $x/a = b/c$   
alge840 Solving a proportion of the form  $(x+a)\div b = c\div d$   
alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
alge658 Introduction to solving a rational equation  
alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
arith610 Word problem on proportions: Problem type 1  
arith611 Word problem on proportions: Problem type 2  
arith862 Applying the percent equation: Problem type 1  
arith863 Applying the percent equation: Problem type 2  
arith849 Finding the total amount given the percentage of a partial amount  
arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
arith851 Finding the final amount given the original amount and a percentage increase or decrease  
arith847 Finding the sale price given the original price and percent discount  
arith074 Finding the sale price without a calculator given the original price and percent discount  
arith848 Finding the total cost including tax or markup  
arith855 Finding the original amount given the result of a percentage increase or decrease  
arith031 Finding the original price given the sale price and percent discount  
arith858 Finding the percentage increase or decrease: Basic  
arith225 Finding the percentage increase or decrease: Advanced  
unit052 Finding the absolute error and percent error of a measurement  
arith854 Computing a percent mixture  
alge795 Solving a percent mixture problem using a linear equation  
arith232 Finding simple interest without a calculator  
arith853 Introduction to compound interest  
geom564 Finding side lengths of squares given an area and a perimeter  
geom648 Finding side lengths of rectangles given one dimension and an area or a perimeter  
geom444 Word problem on optimizing an area or perimeter  
geom561 Finding the dimensions of a rectangle given its perimeter and a relationship between sides  
geom143 Finding the perimeter or area of a rectangle given one of these values  
geom817 Finding a side length given the perimeter and side lengths with variables  
geom838 Circumference ratios  
geom039 Finding supplementary and complementary angles  
geom500 Solving equations involving vertical angles and linear pairs  
geom001 Finding an angle measure of a triangle given two angles  
geom628 Finding angle measures of a triangle given angles with variables  
geom037 Similar polygons  
geom038 Similar right triangles  
geom337 Indirect measurement  
geom538 Finding lengths using scale models  
geom539 Finding a scale factor: Same units  
geom541 Using a scale drawing to find actual area  
geom542 Reproducing a scale drawing at a different scale

**Linear Inequalities**

alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge653 Introduction to identifying solutions to an inequality  
 alge748 Writing an inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line  
 set001 Set builder notation  
 set002 Union and intersection of finite sets  
 alge652 Identifying solutions to a one-step linear inequality  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge809 Multiplicative property of inequality with whole numbers  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge636 Solving a two-step linear inequality with whole numbers  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge860 Solving inequalities with no solution or all real numbers as solutions  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge861 Solving a compound linear inequality: Graph solution, advanced  
 alge621 Solving a word problem using a one-step linear inequality  
 alge846 Translating a sentence into a multi-step inequality  
 alge619 Solving a word problem using a two-step linear inequality and describing the solution  
 alge623 Solving a word problem using a two-step linear inequality  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
 alge868 Solving an absolute value inequality: Problem type 1  
 alge943 Writing an absolute value inequality given a graph on the number line  
 alge869 Solving an absolute value inequality: Problem type 2  
 alge870 Solving an absolute value inequality: Problem type 3  
 alge871 Solving an absolute value inequality: Problem type 4  
 alge872 Solving an absolute value inequality: Problem type 5

**Functions and Lines**

alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge693 Plotting a point in the coordinate plane: Mixed number coordinates  
 arith404 Naming the quadrant or axis of a point given its graph  
 arith405 Naming the quadrant or axis of a point given its coordinates  
 arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
 alge695 Finding distances between points that share a common coordinate given the graph  
 alge696 Finding distances between points that share a common coordinate given their coordinates  
 alge282 Function tables with two-step rules  
 alge850 Table for a linear equation  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules

alge873 Identifying solutions to a linear equation in two variables  
alge066 Finding a solution to a linear equation in two variables  
alge877 Graphing a linear equation of the form  $y = mx$   
alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
alge880 Graphing a line given its equation in standard form  
alge198 Graphing a vertical or horizontal line  
alge884 Finding x- and y-intercepts given the graph of a line on a grid  
alge924 Finding x- and y-intercepts of a line given the equation: Basic  
alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
alge197 Graphing a line given its x- and y-intercepts  
alge881 Graphing a line by first finding its x- and y-intercepts  
mstat007 Interpreting a line graph  
alge575 Finding slope given the graph of a line in quadrant 1 that models a real-world situation  
alge875 Classifying slopes given graphs of lines  
alge886 Finding slope given the graph of a line on a grid  
alge887 Finding slope given two points on the line  
alge885 Finding the slope of horizontal and vertical lines  
alge888 Finding the coordinate that yields a given slope  
alge259 Graphing a line given its slope and y-intercept  
alge196 Graphing a line through a given point with a given slope  
alge625 Identifying linear equations: Basic  
alge876 Identifying linear equations: Advanced  
alge874 Identifying linear functions given ordered pairs  
alge891 Rewriting a linear equation in the form  $Ax + By = C$   
alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
alge882 Graphing a line by first finding its slope and y-intercept  
alge258 Writing an equation of a line given its slope and y-intercept  
alge892 Writing an equation and graphing a line given its slope and y-intercept  
alge314 Finding the slope, y-intercept, and equation for a linear function given a table of values  
alge893 Writing an equation in slope-intercept form given the slope and a point  
alge318 Finding the slope and a point on a line given its equation in point-slope form  
alge883 Graphing a line given its equation in point-slope form  
alge894 Writing an equation in point-slope form given the slope and a point  
alge313 Writing an equation in standard form given the slope and a point  
alge070 Writing an equation of a line given the y-intercept and another point  
alge072 Writing the equation of the line through two given points  
alge073 Writing the equations of vertical and horizontal lines through a given point  
alge322 Comparing linear functions to the parent function  $y=x$   
geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
alge895 Identifying parallel and perpendicular lines from equations  
geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
geom462 Identifying parallel and perpendicular lines from coordinates  
alge630 Finding outputs of a one-step function that models a real-world situation: Two variable equation  
alge632 Finding outputs of a two-step function with decimals that models a real-world situation: Two variable equation  
alge633 Finding inputs and outputs of a two-step function that models a real-world situation: Two variable equation  
alge655 Writing and evaluating a function that models a real-world situation: Basic  
alge897 Writing and evaluating a function that models a real-world situation: Advanced  
alge656 Writing an equation and drawing its graph to model a real-world situation: Basic  
alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
alge817 Finding the initial amount and rate of change given a table for a linear function  
alge818 Finding the initial amount and rate of change given a graph of a linear function  
alge992 Combining functions to write a new function that models a real-world situation  
alge987 Comparing properties of linear functions given in different forms  
alge989 Interpreting the parameters of a linear function that models a real-world situation  
alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
alge806 Application problem with a linear function: Finding a coordinate given two points  
alge670 Identifying independent and dependent quantities from tables and graphs

mstat052 Identifying independent and dependent variables from equations or real-world situations  
 alge991 Solving a linear equation by graphing  
 mstat094 Constructing a scatter plot  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 mstat068 Predictions from the line of best fit  
 mstat067 Approximating the equation of a line of best fit and making predictions  
 mstat069 Computing residuals  
 mstat070 Interpreting residual plots  
 mstat093 Classifying linear and nonlinear relationships from scatter plots  
 mstat071 Linear relationship and the correlation coefficient  
 mstat096 Identifying outliers and clustering in scatter plots  
 mstat074 Identifying correlation and causation  
 alge982 Identifying direct variation equations  
 alge938 Identifying direct variation from ordered pairs and writing equations  
 alge904 Writing a direct variation equation  
 alge175 Word problem on direct variation  
 alge828 Interpreting direct variation from a graph  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun016 Domain and range from ordered pairs  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 fun030 Evaluating a piecewise-defined function  
 alge294 Finding outputs of a one-step function that models a real-world situation: Function notation  
 alge295 Finding outputs of a two-step function with decimals that models a real-world situation: Function notation  
 alge296 Finding inputs and outputs of a two-step function that models a real-world situation: Function notation  
 alge990 Domain and range of a linear function that models a real-world situation  
 fun026 Finding an output of a function from its graph  
 pcalc761 Finding inputs and outputs of a function from its graph  
 fun007 Domain and range from the graph of a discrete relation  
 alge312 Finding domain and range from a linear graph in context  
 pcalc750 Finding intercepts of a nonlinear function given its graph  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 pcalc752 Finding local maxima and minima of a function given the graph  
 mstat018 Choosing a graph to fit a narrative: Basic  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge896 Graphing an integer function and finding its range for a given domain  
 alge570 Graphing a function of the form  $f(x) = ax + b$ : Integer slope  
 alge571 Graphing a function of the form  $f(x) = ax + b$ : Fractional slope  
 alge913 Graphing an absolute value equation of the form  $y = A - x -$   
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge954 Graphing a parabola of the form  $y = ax^2$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge572 Graphing a function of the form  $f(x) = ax^2$   
 alge573 Graphing a function of the form  $f(x) = ax^2 + c$   
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 fun031 Graphing a piecewise-defined function: Problem type 1  
 alge997 Finding the average rate of change of a function given its equation  
 alge998 Finding the average rate of change of a function given its graph  
 alge953 Translating the graph of a parabola: One step  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge898 Translating the graph of an absolute value function: One step  
 alge899 Translating the graph of an absolute value function: Two steps  
 alge901 How the leading coefficient affects the graph of an absolute value function  
 alge185 Writing an equation for a function after a vertical translation  
 pcalc769 Translating the graph of a function: One step  
 pcalc770 Translating the graph of a function: Two steps

pcalc771 Transforming the graph of a function by reflecting over an axis  
 pcalc772 Transforming the graph of a function by shrinking or stretching  
 pcalc773 Transforming the graph of a function using more than one transformation  
 fun020 Writing an equation for a function after a vertical and horizontal translation  
 alge644 Finding the first terms of an arithmetic sequence using an explicit rule  
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge908 Finding the first terms of a sequence using a recursive rule  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge910 Writing a recursive rule for an arithmetic sequence

### Linear Systems

alge914 Identifying solutions to a system of linear equations  
 alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations  
 pcalc820 Using a graphing calculator to solve a system of linear equations: Basic  
 pcalc821 Using a graphing calculator to solve a system of linear equations: Advanced  
 alge317 Writing a system of linear equations given its graph  
 alge816 Solving a system of linear equations of the form  $y = mx + b$   
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge916 Solving a system of linear equations with fractional coefficients  
 alge917 Solving a system of linear equations with decimal coefficients  
 alge634 Solving systems of linear equations with 0, 1, or infinitely many solutions  
 alge988 Identifying the operations used to create equivalent systems of equations  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 pcalc037 Scalar multiplication of a matrix  
 pcalc038 Addition or subtraction of matrices  
 pcalc740 Linear combination of matrices  
 pcalc712 Gauss-Jordan elimination with a 2x2 matrix  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge315 Writing an inequality given its graph in the plane: Horizontal or vertical boundary line  
 alge316 Writing an inequality given its graph in the plane: Slanted boundary line  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced  
 alge922 Graphing a system of three linear inequalities  
 alge729 Writing a multi-step inequality for a real-world situation  
 pcalc093 Solving a word problem using a system of linear inequalities: Problem type 1

### Exponents and Exponential Functions



alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge311 Product rule with positive exponents: Univariate  
 alge030 Product rule with positive exponents: Multivariate  
 arith029 Ordering numbers with positive exponents  
 alge826 Understanding the power rules of exponents  
 alge306 Introduction to the power of a power rule of exponents  
 alge305 Introduction to the power of a product rule of exponents  
 alge307 Power rules with positive exponents: Multivariate products  
 alge308 Power rules with positive exponents: Multivariate quotients  
 alge756 Power and product rules with positive exponents  
 alge451 Simplifying a ratio of multivariate monomials: Basic  
 alge827 Introduction to the quotient rule of exponents  
 alge452 Simplifying a ratio of univariate monomials  
 alge026 Quotient of expressions involving exponents  
 alge453 Simplifying a ratio of multivariate monomials: Advanced  
 alge927 Power and quotient rules with positive exponents  
 alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 arith729 Evaluating an expression with a negative exponent: Whole number base  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge961 Introduction to the product rule with negative exponents  
 alge028 Product rule with negative exponents  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge926 Quotient rule with negative exponents: Problem type 2  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge928 Power and quotient rules with negative exponents: Problem type 1  
 alge929 Power and quotient rules with negative exponents: Problem type 2  
 alge757 Power, product, and quotient rules with negative exponents  
 scinot023 Introduction to scientific notation with positive exponents  
 arith036 Scientific notation with positive exponent  
 scinot024 Introduction to scientific notation with negative exponents  
 arith037 Scientific notation with negative exponent  
 scinot012 Converting between scientific notation and standard form in a real-world situation  
 scinot021 Expressing calculator notation as scientific notation  
 scinot008 Multiplying numbers written in scientific notation: Basic  
 scinot009 Multiplying numbers written in scientific notation: Advanced  
 scinot019 Multiplying numbers written in decimal form or scientific notation in a real-world situation  
 scinot010 Dividing numbers written in scientific notation: Basic  
 scinot011 Dividing numbers written in scientific notation: Advanced  
 scinot013 Finding the scale factor between numbers given in scientific notation in a real-world situation  
 alge971 Table for an exponential function  
 alge969 Graphing an exponential function:  $f(x) = ax$   
 alge970 Graphing an exponential function:  $f(x) = a(b)x$   
 alge712 Graphing an exponential function and its asymptote:  $f(x) = a(b)x$   
 alge321 Finding domain and range from the graph of an exponential function  
 pcalc922 Translating the graph of an exponential function  
 alge830 Evaluating an exponential function that models a real-world situation  
 alge301 Solving an exponential equation by finding common bases: Linear exponents  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest  
 alge966 Finding the initial amount and rate of change given an exponential function  
 alge968 Writing an equation that models exponential growth or decay  
 alge967 Writing an exponential function rule given a table of ordered pairs  
 mstat103 Choosing an exponential model and using it to make a prediction  
 alge993 Comparing linear, polynomial, and exponential functions  
 alge645 Finding the first terms of a geometric sequence using an explicit rule  
 alge933 Finding the next terms of a geometric sequence with whole numbers



alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge911 Writing recursive rules for arithmetic and geometric sequences  
 alge965 Identifying linear, quadratic, and exponential functions given ordered pairs

### Polynomials and Factoring

alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge932 Simplifying a sum or difference of multivariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge081 Multiplying conjugate binomials: Multivariate  
 alge032 Squaring a binomial: Univariate  
 alge068 Squaring a binomial: Multivariate  
 alge973 Multiplying binomials with negative coefficients  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge759 Dividing a polynomial by a monomial: Univariate  
 alge760 Dividing a polynomial by a monomial: Multivariate  
 alge761 Polynomial long division: Problem type 1  
 alge762 Polynomial long division: Problem type 2  
 alge763 Polynomial long division: Problem type 3  
 alge985 Closure properties of integers and polynomials  
 alge736 Introduction to the GCF of two monomials  
 alge930 Greatest common factor of three univariate monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge949 Factoring out a binomial from a polynomial: GCF factoring, basic  
 alge923 Factoring a univariate polynomial by grouping: Problem type 1  
 alge950 Factoring a univariate polynomial by grouping: Problem type 2  
 alge951 Factoring a multivariate polynomial by grouping: Problem type 1  
 alge952 Factoring a multivariate polynomial by grouping: Problem type 2  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge942 Factoring a quadratic in two variables with leading coefficient 1  
 alge936 Factoring out a constant before factoring a quadratic  
 alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1  
 alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
 alge941 Factoring a quadratic with leading coefficient greater than 1: Problem type 3  
 alge978 Factoring a quadratic by the ac-method  
 alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
 alge937 Factoring a quadratic with a negative leading coefficient  
 alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge945 Factoring a perfect square trinomial with leading coefficient greater than 1  
 alge946 Factoring a perfect square trinomial in two variables  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge839 Factoring a difference of squares in two variables

alge948 Factoring a polynomial involving a GCF and a difference of squares: Univariate  
 alge833 Factoring a polynomial involving a GCF and a difference of squares: Multivariate  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge042 Factoring with repeated use of the difference of squares formula  
 alge044 Factoring a sum or difference of two cubes

### Quadratic Functions and Equations

alge681 Solving an equation written in factored form  
 alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge323 Finding the zeros of a quadratic function given its equation  
 alge163 Writing a quadratic equation given the roots and the leading coefficient  
 alge703 Solving a word problem using a quadratic equation with rational roots  
 arith601 Square root of a rational perfect square  
 arith760 Square roots of perfect squares with signs  
 arith093 Simplifying the square root of a whole number less than 100  
 arith762 Simplifying the square root of a whole number greater than 100  
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 alge958 Solving a quadratic equation using the square root property: Decimal answers, basic  
 alge959 Solving a quadratic equation using the square root property: Decimal answers, advanced  
 alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
 alge227 Solving a quadratic equation using the square root property: Exact answers, advanced  
 alge094 Completing the square  
 alge960 Solving a quadratic equation by completing the square: Decimal answers  
 alge780 Solving a quadratic equation by completing the square: Exact answers  
 alge095 Applying the quadratic formula: Exact answers  
 alge963 Applying the quadratic formula: Decimal answers  
 alge214 Discriminant of a quadratic equation  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge974 Finding the vertex, x-intercepts, and axis of symmetry from the graph of a parabola  
 alge569 Graphing a parabola of the form  $y = x^2 + bx + c$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients  
 alge320 Writing a quadratic function given its zeros  
 alge277 Finding the x-intercept(s) and the vertex of a parabola  
 pcalc714 Using a graphing calculator to find the zeros of a quadratic function  
 pcalc793 Using a graphing calculator to find the x-intercept(s) and vertex of a quadratic function  
 alge319 Rewriting a quadratic function in standard form  
 pcalc774 Rewriting a quadratic function to find the vertex of its graph  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge975 Domain and range from the graph of a parabola  
 alge976 Range of a quadratic function  
 pcalc680 Writing the equation of a quadratic function given its graph  
 alge957 Solving a quadratic equation by graphing  
 alge996 Comparing properties of quadratic functions given in different forms  
 alge702 Classifying the graph of a function  
 mstat102 Choosing a quadratic model and using it to make a prediction  
 pcalc748 Graphing a quadratic inequality: Problem type 1  
 pcalc749 Graphing a quadratic inequality: Problem type 2  
 alge994 Graphically solving a system of linear and quadratic equations  
 alge995 Solving a system of linear and quadratic equations  
 pcalc716 Using a graphing calculator to solve a system of linear and quadratic equations: Basic  
 fun019 Sum, difference, and product of two functions  
 alge716 Introduction to the composition of two functions  
 fun022 Composition of two functions: Basic  
 fun011 Horizontal line test

fun012 Inverse functions: Linear, discrete  
 pcalc114 Even and odd functions: Problem type 1

### Radicals

alge413 Finding all square roots of a number  
 arith602 Estimating a square root  
 arith761 Square roots of integers raised to even exponents  
 alge415 Introduction to simplifying a radical expression with an even exponent  
 alge264 Square root of a perfect square monomial  
 alge537 Using absolute value to simplify square roots of perfect square monomials  
 arith094 Cube root of an integer  
 alge549 Finding  $n$ th roots of perfect  $n$ th powers with signs  
 arith768 Finding the  $n$ th root of a perfect  $n$ th power fraction  
 alge550 Finding the  $n$ th root of a perfect  $n$ th power monomial  
 alge539 Table for a square root function  
 alge565 Domain of a square root function: Basic  
 alge566 Domain of a square root function: Advanced  
 alge543 Graphing a square root function: Problem type 1  
 alge544 Graphing a square root function: Problem type 2  
 alge545 Graphing a square root function: Problem type 3  
 alge812 Converting between radical form and exponent form  
 alge560 Rational exponents: Unit fraction exponents and whole number bases  
 alge561 Rational exponents: Unit fraction exponents and bases involving signs  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge558 Rational exponents: Product rule  
 alge559 Rational exponents: Quotient rule  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge562 Rational exponents: Power of a power rule  
 alge249 Rational exponents: Powers of powers with negative exponents  
 alge080 Simplifying a radical expression with an even exponent  
 alge520 Introduction to simplifying a radical expression with an odd exponent  
 alge521 Simplifying a radical expression with an odd exponent  
 alge275 Simplifying a radical expression with two variables  
 alge273 Simplifying a higher root of a whole number  
 alge551 Introduction to simplifying a higher radical expression  
 alge552 Simplifying a higher radical expression: Univariate  
 alge811 Simplifying a higher radical expression: Multivariate  
 arith767 Introduction to square root addition or subtraction  
 arith032 Square root addition or subtraction  
 alge533 Square root addition or subtraction with three terms  
 alge531 Introduction to simplifying a sum or difference of radical expressions: Univariate  
 alge532 Simplifying a sum or difference of radical expressions: Univariate  
 alge084 Simplifying a sum or difference of radical expressions: Multivariate  
 arith764 Introduction to square root multiplication  
 arith765 Square root multiplication: Basic  
 arith039 Square root multiplication: Advanced  
 alge522 Introduction to simplifying a product of radical expressions: Univariate  
 alge523 Simplifying a product of radical expressions: Univariate  
 alge640 Simplifying a product of radical expressions: Multivariate  
 alge556 Introduction to simplifying a product of higher roots  
 alge557 Simplifying a product of higher radical expressions  
 alge525 Introduction to simplifying a product involving square roots using the distributive property  
 alge526 Simplifying a product involving square roots using the distributive property: Basic  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge984 Classifying sums and products as rational or irrational  
 arith766 Simplifying a quotient of square roots  
 alge530 Simplifying a quotient involving a sum or difference with a square root

alge527 Rationalizing a denominator: Quotient involving square roots  
 alge528 Rationalizing a denominator: Square root of a fraction  
 alge529 Rationalizing a denominator: Quotient involving a monomial  
 alge534 Rationalizing a denominator using conjugates: Integer numerator  
 alge535 Rationalizing a denominator using conjugates: Square root in numerator  
 alge400 Introduction to solving a radical equation  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge402 Solving a radical equation that simplifies to a linear equation: One radical, advanced  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge403 Solving a radical equation that simplifies to a quadratic equation: One radical, basic  
 alge404 Solving a radical equation that simplifies to a quadratic equation: One radical, advanced  
 alge411 Solving a radical equation with a quadratic expression under the radical  
 alge405 Solving a radical equation with two radicals that simplifies to  $\sqrt{x} = a$   
 alge182 Solving a radical equation that simplifies to a quadratic equation: Two radicals  
 alge412 Algebraic symbol manipulation with radicals  
 alge542 Word problem involving radical equations: Basic  
 alge409 Word problem involving radical equations: Advanced  
 alge698 Solving an equation of the form  $x^3 = a$  using integers  
 geom565 Finding the side length of a cube given its volume  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem  
 geom862 Using the Pythagorean Theorem repeatedly  
 geom603 Identifying side lengths that give right triangles  
 geom588 Informal proof of the Pythagorean Theorem  
 alge713 Using the Pythagorean Theorem and a quadratic equation to find side lengths of a right triangle  
 alge132 Distance between two points in the plane: Exact answers  
 alge324 Distance between two points in the plane: Decimal answers  
 alge191 Midpoint of a line segment in the plane  
 alge414 Finding an endpoint of a line segment given the other endpoint and the midpoint  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc008 Finding trigonometric ratios given a right triangle  
 geom317 Understanding trigonometric ratios through similar right triangles  
 geom318 Using similar right triangles to find trigonometric ratios  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc642 Solving a right triangle

### Data Analysis and Probability

mstat088 Identifying statistical questions  
 mstat080 Choosing an appropriate method for gathering data: Problem type 1  
 mstat081 Choosing an appropriate method for gathering data: Problem type 2  
 mstat047 Introduction to expectation  
 mstat097 Constructing a two-way frequency table: Basic  
 mstat098 Constructing a two-way frequency table: Advanced  
 mstat049 Computing a percentage from a table of values  
 mstat087 Making an inference using a two-way frequency table  
 stat020 Calculating relative frequencies in a contingency table  
 mstat025 Finding if a question can be answered by the data  
 stat805 Making a reasonable inference based on proportion statistics  
 mstat037 Constructing a line plot  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph

mstat031 Interpreting a stem-and-leaf plot  
stat804 Interpreting a circle graph or pie chart  
arith856 Finding a percentage of a total amount in a circle graph  
stat801 Computations from a circle graph  
geom814 Angle measure in a circle graph  
mstat003 Mode of a data set  
mstat055 Finding the mode and range of a data set  
mstat092 Finding the mode and range from a line plot  
mstat001 Mean of a data set  
mstat077 Using a model to find the mean  
mstat091 Finding the mean of a symmetric distribution  
mstat079 Finding sample size and comparing samples for estimating the mean  
mstat089 Computations involving the mean, sample size, and sum of a data set  
stat803 Finding the value for a new score that will yield a given mean  
stat802 Rejecting unreasonable claims based on average statistics  
mstat066 Weighted mean  
mstat028 Mean and median of a data set  
mstat029 How changing a value affects the mean and median  
mstat095 Finding outliers in a data set  
mstat053 Choosing the best measure to describe data  
stat009 Percentiles  
mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
mstat072 Five-number summary and interquartile range  
mstat006 Constructing a box-and-whisker plot  
mstat073 Using box-and-whisker plots to compare data sets  
mstat082 Computing mean absolute deviation from a list of numerical values  
mstat042 Interpreting a Venn diagram of 2 sets  
mstat043 Interpreting a Venn diagram of 3 sets  
mstat041 Interpreting a tree diagram  
mstat040 Introduction to the counting principle  
mstat015 Counting principle  
pcalc082 Factorial expressions  
mstat017 Computing permutations and combinations  
mstat008 Word problem involving permutations  
mstat009 Word problem involving combinations  
stat790 Permutations, combinations, and the multiplication principle for counting  
mstat099 Determining a sample space and outcomes for a simple event  
mstat100 Determining a sample space and outcomes for a compound event  
mstat026 Introduction to the probability of an event  
mstat010 Probability of an event  
mstat046 Experimental and theoretical probability  
stat106 Outcomes and event probability  
stat112 Probabilities involving two dice  
mstat116 Probabilities of a permutation and a combination  
mstat048 Odds of an event  
mstat011 Area as probability  
mstat019 Identifying independent events given descriptions of experiments  
mstat012 Probability of independent events  
mstat013 Probability of dependent events  
stat117 Probabilities of draws with replacement  
stat118 Probabilities of draws without replacement  
mstat115 Determining outcomes for compound events and complements of events  
mstat110 Using a Venn diagram to understand the multiplication rule for probability  
mstat107 Outcomes and event probability: Conditional probability  
mstat104 Identifying independent events given values of probabilities  
mstat105 Computing conditional probability using a two-way frequency table  
mstat106 Computing conditional probability to make an inference using a two-way frequency table  
mstat118 Conditional probability: Basic  
mstat109 Using a Venn diagram to understand the addition rule for probability  
mstat108 Outcomes and event probability: Addition rule  
mstat032 Probability of the union of two events  
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 alge034 Simplifying a ratio of multivariate polynomials  
 alge053 Multiplying rational expressions involving multivariate monomials  
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 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
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 alge464 Dividing rational expressions involving quadratics with leading coefficients greater than 1  
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 alge440 Adding rational expressions with multivariate monomial denominators: Basic  
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 alge441 Adding rational expressions with linear denominators without common factors: Basic  
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 alge473 Complex fraction made of sums involving rational expressions: Problem type 1  
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 alge421 Solving a rational equation that simplifies to linear: Denominators  $ax$  and  $bx$   
 alge422 Solving a rational equation that simplifies to linear: Like binomial denominators  
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
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 alge450 Solving a distance, rate, time problem using a rational equation  
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 alge905 Writing an inverse variation equation  
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## B.90 CC Geometry

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arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
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arith739 Introduction to decimal multiplication  
arith017 Multiplication of a decimal by a whole number  
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arith754 Addition and subtraction with 3 integers  
arith231 Integer multiplication and division  
arith800 Multiplication of 3 or 4 integers  
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alge683 Evaluating an algebraic expression: Whole number multiplication or division  
alge285 Evaluating an algebraic expression: Whole numbers with two operations  
alge649 Evaluating a formula  
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alge004 Evaluating a quadratic expression: Integers  
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alge607 Combining like terms: Integer coefficients  
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alge608 Using distribution and combining like terms to simplify: Univariate  
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alge650 Identifying solutions to a one-step linear equation: Problem type 1  
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alge797 Multiplicative property of equality with integers  
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alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
alge518 Solving for a variable inside parentheses in terms of other variables  
alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
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arith030 Finding a percentage of a whole number without a calculator: Basic  
arith840 Finding a percentage of a whole number  
arith862 Applying the percent equation: Problem type 1  
arith686 Writing a ratio as a percentage  
arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
arith851 Finding the final amount given the original amount and a percentage increase or decrease

arith858 Finding the percentage increase or decrease: Basic  
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alge017 Graphing a linear inequality on the number line  
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alge166 Graphing a compound inequality on the number line  
alge652 Identifying solutions to a one-step linear inequality  
alge848 Additive property of inequality with whole numbers  
alge849 Additive property of inequality with integers  
alge809 Multiplicative property of inequality with whole numbers  
alge854 Multiplicative property of inequality with integers  
alge964 Multiplicative property of inequality with signed fractions  
alge844 Identifying solutions to a two-step linear inequality in one variable  
alge636 Solving a two-step linear inequality with whole numbers  
alge855 Solving a two-step linear inequality: Problem type 1  
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alge451 Simplifying a ratio of multivariate monomials: Basic  
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alge026 Quotient of expressions involving exponents  
alge798 Simplifying a sum or difference of two univariate polynomials  
alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
alge033 Multiplying binomials with leading coefficients of 1  
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alge764 Multiplying conjugate binomials: Univariate  
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alge605 Factoring a linear binomial  
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alge738 Factoring out a monomial from a polynomial: Univariate  
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arith601 Square root of a rational perfect square  
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arith761 Square roots of integers raised to even exponents  
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alge264 Square root of a perfect square monomial  
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arith094 Cube root of an integer  
arith093 Simplifying the square root of a whole number less than 100  
arith762 Simplifying the square root of a whole number greater than 100  
alge080 Simplifying a radical expression with an even exponent  
alge520 Introduction to simplifying a radical expression with an odd exponent  
alge521 Simplifying a radical expression with an odd exponent  
arith764 Introduction to square root multiplication  
arith765 Square root multiplication: Basic  
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alge528 Rationalizing a denominator: Square root of a fraction  
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 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
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 alge681 Solving an equation written in factored form  
 alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
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 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
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 alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
 alge095 Applying the quadratic formula: Exact answers  
 alge963 Applying the quadratic formula: Decimal answers  
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 geom300 Perimeter of a square or a rectangle  
 geom618 Perimeter of a polygon involving mixed numbers and fractions  
 geom221 Finding the missing length in a figure  
 geom353 Perimeter of a piecewise rectangular figure  
 alge615 Writing algebraic expressions for the perimeter of a figure  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom078 Sides of polygons having the same perimeter  
 geom019 Area of a square or a rectangle  
 geom866 Perimeter and area on a grid  
 geom620 Area of a rectangle involving fractions  
 geom619 Area of a rectangle involving mixed numbers and fractions  
 geom350 Distinguishing between the area and perimeter of a rectangle  
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 geom562 Area between two rectangles  
 geom869 Estimates and exact answers  
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 geom564 Finding side lengths of squares given an area and a perimeter  
 geom648 Finding side lengths of rectangles given one dimension and an area or a perimeter  
 geom561 Finding the dimensions of a rectangle given its perimeter and a relationship between sides  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom410 Word problem involving the area of a square or a rectangle  
 geom142 Word problem involving the area between two rectangles  
 geom444 Word problem on optimizing an area or perimeter  
 mstat033 Measuring length to the nearest inch  
 mstat034 Measuring length to the nearest quarter or half inch  
 unit005 U.S. Customary unit conversion with whole number values  
 mstat035 Conversions involving measurements in feet and inches  
 mstat036 Adding measurements in feet and inches  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 mstat063 Measuring length to the nearest centimeter  
 mstat064 Measuring length to the nearest millimeter  
 unit001 Metric distance conversion with whole number values  
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 unit004 Metric conversion with decimal values: Two-step problem  
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 unit009 U.S. Customary area unit conversion with whole number values  
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 geom459 Analyzing relationships between points, lines, and planes given a figure  
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geom358 Identifying parallel and perpendicular lines  
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 alge694 Computing the distance between two integers on a number line  
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 geom393 Finding a point on a number line given the length of a segment and another point  
 geom395 Midpoint of a number line segment: Integers  
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 geom397 Using a segment's midpoint and endpoint to locate the other endpoint  
 geom521 Segment addition and midpoints  
 geom399 Finding a point that partitions a number line segment in a given fractional relationship  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge693 Plotting a point in the coordinate plane: Mixed number coordinates  
 arith404 Naming the quadrant or axis of a point given its graph  
 arith405 Naming the quadrant or axis of a point given its coordinates  
 arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
 alge850 Table for a linear equation  
 alge695 Finding distances between points that share a common coordinate given the graph  
 alge696 Finding distances between points that share a common coordinate given their coordinates  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge675 Using the Pythagorean Theorem to find distance on a grid  
 alge132 Distance between two points in the plane: Exact answers  
 alge324 Distance between two points in the plane: Decimal answers  
 geom458 Identifying congruent segments in the plane  
 alge191 Midpoint of a line segment in the plane  
 alge414 Finding an endpoint of a line segment given the other endpoint and the midpoint  
 geom406 Finding a point that partitions a segment in the plane in a given fractional relationship  
 geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom460 Naming angles, sides of angles, and vertices  
 geom039 Finding supplementary and complementary angles  
 geom454 Introduction to angle addition  
 geom551 Finding the complement or supplement of an angle given a figure  
 geom552 Solving an equation involving complementary or supplementary angles  
 geom850 Angle addition with relationships between angles  
 geom851 Angle addition and angle bisectors  
 geom800 Identifying linear pairs and vertical angles  
 geom553 Finding angle measures given two intersecting lines  
 geom500 Solving equations involving vertical angles and linear pairs  
 geom389 Constructing congruent line segments  
 geom158 Constructing an angle bisector  
 geom159 Constructing congruent angles  
 geom154 Constructing the perpendicular bisector of a line segment  
 geom457 Making conjectures given a geometric construction

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 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge732 Finding patterns in shapes  
 mstat042 Interpreting a Venn diagram of 2 sets  
 glogic001 Conditional statements and negations  
 glogic005 The converse, inverse, and contrapositive of a conditional statement  
 glogic011 Writing the converse, inverse, and contrapositive of a conditional statement and determining their truth values

glogic012 Writing a biconditional statement as a conditional statement and its converse and determining truth values  
 glogic013 Finding counterexamples to conjectures  
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 geom665 Distinguishing between undefined terms, definitions, postulates, conjectures, and theorems  
 geom616 Introduction to proofs: Justifying statements  
 geom614 Proofs involving segment congruence  
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geom304 Identifying corresponding and alternate angles  
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 geom584 Establishing facts about the angles created when parallel lines are cut by a transversal  
 geom150 Constructing a pair of perpendicular lines  
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 geom835 Introduction to proofs involving parallel lines  
 geom836 Proofs involving parallel lines  
 fun001 Table for a linear function  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
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 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
 alge924 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Basic  
 alge210 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Advanced  
 alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
 alge881 Graphing a line by first finding its  $x$ - and  $y$ -intercepts  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines  
 alge814 Using right triangles to find the slope of a line  
 alge259 Graphing a line given its slope and  $y$ -intercept  
 alge196 Graphing a line through a given point with a given slope  
 alge891 Rewriting a linear equation in the form  $Ax + By = C$   
 alge889 Finding the slope and  $y$ -intercept of a line given its equation in the form  $y = mx + b$   
 alge890 Finding the slope and  $y$ -intercept of a line given its equation in the form  $Ax + By = C$   
 alge882 Graphing a line by first finding its slope and  $y$ -intercept  
 alge258 Writing an equation of a line given its slope and  $y$ -intercept  
 alge892 Writing an equation and graphing a line given its slope and  $y$ -intercept  
 alge893 Writing an equation in slope-intercept form given the slope and a point  
 alge318 Finding the slope and a point on a line given its equation in point-slope form  
 alge883 Graphing a line given its equation in point-slope form  
 alge894 Writing an equation in point-slope form given the slope and a point  
 alge313 Writing an equation in standard form given the slope and a point  
 alge070 Writing an equation of a line given the  $y$ -intercept and another point  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 alge895 Identifying parallel and perpendicular lines from equations  
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 geom462 Identifying parallel and perpendicular lines from coordinates  
 alge914 Identifying solutions to a system of linear equations



alge725 Graphically solving a system of linear equations  
 alge816 Solving a system of linear equations of the form  $y = mx + b$   
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
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 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom322 Identifying coordinates that give right triangles  
 geom323 Identifying scalene, isosceles, and equilateral triangles given coordinates of their vertices  
 geom001 Finding an angle measure of a triangle given two angles  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom628 Finding angle measures of a triangle given angles with variables  
 geom586 Establishing facts about the interior angles of a triangle  
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 geom357 Identifying transformations  
 geom519 Identifying and naming congruent parts of congruent triangles  
 geom325 Determining if figures are related by rigid motions  
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 geom329 Exploring the triangle congruence theorems  
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 geom839 Proofs involving congruent triangles, parallel or perpendicular segments, and CPCTC  
 geom843 Proofs involving congruent triangles that overlap: Advanced  
 geom645 Finding side lengths and angle measures of isosceles and equilateral triangles  
 geom309 Finding an angle measure for a triangle sharing a side with another triangle  
 geom629 Finding angle measures of an isosceles triangle given angles with variables  
 geom363 Proofs of theorems involving isosceles triangles  
 geom449 Classifying segments inside triangles  
 geom446 Using the circumcenter of a triangle to find segment lengths  
 geom447 Using the incenter of a triangle to find segment lengths and angle measures  
 geom448 Using the centroid of a triangle to find segment lengths  
 geom413 Introduction to the triangle midsegment theorem  
 geom324 Proving the triangle midsegment theorem in the coordinate plane  
 geom441 Proof involving points on the perpendicular bisector of a line segment  
 geom544 Creating triangles from given side lengths: Problem type 1  
 geom634 Creating triangles from given side lengths: Problem type 2  
 geom844 Using triangle inequality to determine if side lengths form a triangle  
 geom664 Using triangle inequality to determine possible lengths of a third side  
 geom548 Determining if a triangle is possible based on given angle measures  
 geom549 Determining if given measurements define a unique triangle, more than one triangle, or no triangle  
 geom546 Drawing triangles with given conditions: Angle measures  
 geom547 Drawing triangles with given conditions: Side lengths and angle measures  
 geom543 Drawing a circle with a given radius or diameter  
 geom545 Drawing triangles with given side lengths using a compass



geom854 Relationship between angle measures and side lengths in a triangle  
 geom855 Relationship between angle measures and side lengths in two triangles  
 geom451 Using the hinge theorem  
 geom650 Indirect proof (proof by contradiction)

### Polygons and Quadrilaterals

geom361 Naming polygons  
 geom870 Sum of the angle measures of a quadrilateral  
 geom656 Finding the sum of the interior angle measures of a convex polygon given the number of sides  
 geom655 Finding the number of sides of a convex polygon given the sum of the measures of the interior angles  
 geom657 Finding a missing interior angle measure in a convex polygon  
 geom658 Finding the measures of an interior angle and an exterior angle of a regular polygon  
 geom659 Finding the number of sides of a regular polygon given the measure of an interior angle  
 geom867 Identifying parallelograms, rectangles, and squares  
 geom310 Properties of quadrilaterals  
 geom532 Classifying parallelograms  
 geom528 Finding measures involving diagonals of parallelograms  
 geom527 Conditions for parallelograms  
 geom833 Finding measures involving diagonals of rectangles  
 geom436 Finding angle measures involving diagonals of a rhombus  
 geom523 Conditions for quadrilaterals  
 geom661 Completing proofs of theorems involving sides of a parallelogram  
 geom662 Completing proofs of theorems involving angles of a parallelogram  
 geom536 Drawing and identifying a polygon in the coordinate plane  
 geom818 Finding the coordinates of a point to make a parallelogram  
 geom819 Finding coordinates of vertices of polygons  
 geom321 Proving that a quadrilateral with given vertices is a parallelogram  
 geom408 Classifying parallelograms in the coordinate plane  
 geom863 Congruence in the coordinate plane

### Similarity

arith823 Writing ratios using different notations  
 arith663 Writing ratios for real-world situations  
 arith824 Simplifying a ratio of whole numbers: Problem type 1  
 arith825 Simplifying a ratio of decimals  
 alge819 Solving a proportion of the form  $x/a=b/c$ : Basic  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 alge840 Solving a proportion of the form  $(x+a)\div b = c\div d$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 arith064 Solving a word problem on proportions using a unit rate  
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 alge888 Finding the coordinate that yields a given slope  
 geom390 Finding a point that partitions a number line segment in a given ratio  
 geom391 Finding a point that partitions a segment in the plane in a given ratio  
 geom360 Identifying similar or congruent shapes on a grid  
 geom583 Finding angle measures of a triangle given two angles of a similar triangle  
 geom585 Finding angle measures and side ratios to determine if two triangles are similar  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom510 Triangles and parallel lines  
 geom475 Triangles and angle bisectors  
 geom326 Determining if figures are related by similarity transformations  
 geom328 Examining triangle similarity in terms of similarity transformations  
 geom364 Identifying and naming similar triangles

geom365 Proofs involving similar triangles  
 geom472 Completing proofs involving the triangle proportionality theorem  
 geom461 Proving the slope criterion for parallel or perpendicular lines  
 geom538 Finding lengths using scale models  
 geom539 Finding a scale factor: Same units  
 geom541 Using a scale drawing to find actual area  
 geom542 Reproducing a scale drawing at a different scale

### Right Triangles and Trigonometry

alge408 Word problem involving the Pythagorean Theorem  
 alge713 Using the Pythagorean Theorem and a quadratic equation to find side lengths of a right triangle  
 geom862 Using the Pythagorean Theorem repeatedly  
 geom603 Identifying side lengths that give right triangles  
 geom589 Demonstrating the converse of the Pythagorean Theorem  
 geom452 Identifying similar right triangles that overlap  
 geom507 Right triangles and geometric mean  
 geom473 Proving the Pythagorean Theorem using similar triangles  
 geom860 Special right triangles: Decimal answers  
 geom506 Special right triangles: Exact answers  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc008 Finding trigonometric ratios given a right triangle  
 geom317 Understanding trigonometric ratios through similar right triangles  
 geom316 Relationship between the sines and cosines of complementary angles  
 geom318 Using similar right triangles to find trigonometric ratios  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc642 Solving a right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc031 Solving a triangle with the law of sines: Problem type 1  
 pcalc032 Solving a triangle with the law of sines: Problem type 2  
 pcalc644 Solving a word problem using the law of sines  
 geom320 Proving the law of sines  
 pcalc033 Solving a triangle with the law of cosines  
 pcalc645 Solving a word problem using the law of cosines  
 geom409 Proving the law of cosines  
 pcalc063 Translation of a vector  
 pcalc739 Multiplication of a vector by a scalar: Geometric approach  
 pcalc060 Magnitude of a vector given in component form  
 geom856 Vector addition and scalar multiplication: Component form  
 vector008 Linear combination of vectors: Component form  
 geom857 Vector addition: Geometric approach  
 vector007 Vector subtraction: Geometric approach  
 vector002 Finding the magnitude and direction of a vector given its graph  
 vector005 Finding the components of a vector given its graph

### Transformations

geom596 Translating a point and giving its coordinates: One step  
 geom909 Translating a point and giving its coordinates: Two steps  
 geom597 Properties of translated figures  
 geom598 Determining if figures are related by a translation  
 geom330 Translating a polygon  
 geom331 Using a translated point to find coordinates of other translated points

geom375 Understanding the definition of a translation  
 pcalc038 Addition or subtraction of matrices  
 arith408 Reflecting a point across an axis  
 geom533 Reflecting a point across both coordinate axes  
 geom590 Reflecting a point across an axis and giving its coordinates  
 arith407 Finding the coordinates of a point reflected across an axis  
 geom560 Finding the coordinates of a point reflected across both axes  
 geom534 Reflecting a polygon across the x-axis or y-axis  
 geom591 Properties of reflected figures  
 geom592 Determining if figures are related by a reflection  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom333 Finding the coordinates of three points reflected over an axis  
 geom602 Finding the coordinates of a point reflected across an axis and translated  
 geom376 Understanding the definition of a reflection  
 geom593 Rotating a point and giving its coordinates  
 geom594 Properties of rotated figures  
 geom595 Determining if figures are related by a rotation  
 geom335 Rotating a figure about the origin  
 geom377 Understanding the definition of a rotation  
 geom334 Drawing lines of symmetry  
 geom815 Finding an angle of rotation  
 geom624 Identifying rotational symmetry and angles of rotation  
 geom831 Rotational and point symmetries  
 geom369 Writing a rule to describe a translation  
 geom370 Writing a rule to describe a reflection  
 geom371 Writing a rule to describe a rotation  
 geom373 Identifying transformations that map a quadrilateral onto itself  
 geom374 Identifying transformations that map a regular polygon onto itself  
 geom580 Determining if figures are congruent and related by a transformation  
 geom581 Determining if figures are congruent and related by a sequence of transformations  
 geom606 Dilating a segment and giving the coordinates of its endpoints  
 geom607 The effect of dilation on side length  
 geom608 Determining if figures are related by a dilation  
 geom636 The effect of dilation on area  
 geom336 Dilating a figure  
 geom372 Writing a rule to describe a dilation  
 geom582 Determining if figures are similar and related by a sequence of transformations  
 geom463 Exploring similarity of circles  
 geom379 Exploring the effect of dilation on lines  
 pcalc037 Scalar multiplication of a matrix

### Area and Volume

geom022 Area of a parallelogram  
 geom501 Finding the area of a right triangle on a grid  
 geom509 Finding the area of a right triangle or its corresponding rectangle  
 geom801 Area of a triangle  
 geom537 Finding the perimeter or area of a rectangle in the coordinate plane  
 geom430 Word problem on population density  
 geom426 Finding the perimeter of a triangle, trapezoid, or parallelogram in the coordinate plane  
 geom437 Finding the area of a triangle or parallelogram in the coordinate plane  
 geom440 Finding the area of a right triangle using the Pythagorean Theorem  
 geom068 Computing an area using the Pythagorean Theorem  
 geom588 Informal proof of the Pythagorean Theorem  
 geom344 Area involving rectangles and triangles  
 alge724 Finding an area in terms of variables  
 geom439 Using trigonometry to find the area of a right triangle  
 pcalc646 Finding the area of a triangle using trigonometry  
 geom319 Expressing the area of a triangle in terms of the sine of one of its angles  
 pcalc647 Heron's formula

geom517 Finding the area of a trapezoid on a grid by using triangles and rectangles  
geom023 Area of a trapezoid  
geom434 Area of a rhombus  
geom435 Finding the area of a rhombus using the Pythagorean Theorem  
geom438 Finding the area of a trapezoid, rhombus, or kite in the coordinate plane  
geom213 Area of a regular polygon  
geom479 Finding the area of a regular polygon using special right triangles  
geom481 Side lengths, perimeters, and areas of similar polygons  
geom347 Introduction to a circle: Diameter, radius, and chord  
geom016 Circumference of a circle  
geom218 Finding the radius or the diameter of a circle given its circumference  
geom427 Informal argument for the formula of the circumference of a circle  
geom838 Circumference ratios  
geom301 Perimeter involving rectangles and circles  
geom026 Area of a circle  
geom802 Circumference and area of a circle  
geom477 Circumference and area of a circle: Exact answers in terms of pi  
geom570 Distinguishing between the area and circumference of a circle  
geom428 Informal argument for the formula of the area of a circle  
geom302 Area involving rectangles and circles  
geom563 Area between two concentric circles  
geom036 Word problem involving the area between two concentric circles  
geom214 Area involving inscribed figures  
geom649 Area involving multiple inscribed figures  
geom212 Circles inscribed in and circumscribed about regular polygons  
geom126 Area of a sector of a circle: Exact answer in terms of pi  
geom429 Informal argument for the formula of the area of a sector  
geom868 Classifying solids  
geom348 Vertices, edges, and faces of a solid  
geom219 Nets of solids  
geom861 Nets of solids: Advanced  
geom830 Counting the cubes in a solid made of cubes  
geom816 Side views of a solid made of cubes  
geom550 Identifying horizontal and vertical cross sections of solids  
geom381 Identifying solids generated by rotations of two-dimensional regions  
geom443 Identifying geometric shapes that model real-world objects  
geom491 Identifying properties of Euclidean and spherical geometries  
geom031 Surface area of a cube or a rectangular prism  
geom632 Surface area of a rectangular prism made of unit cubes  
geom556 Using a net to find the surface area of a rectangular prism  
geom576 Word problem involving the surface area of a rectangular prism  
geom345 Surface area of a piecewise rectangular prism made of unit cubes  
geom091 Surface area of a triangular prism  
geom557 Using a net to find the surface area of a triangular prism  
geom621 Surface area of a cylinder  
geom034 Surface area of a cylinder: Exact answers in terms of pi  
geom578 Word problem involving the surface area of a cylinder  
geom484 Word problem involving the surface area of rectangular prisms and cylinders  
geom483 Word problem involving the surface area of rectangular prisms and pyramids  
geom354 Volume of a rectangular prism made of unit cubes  
geom311 Volume of a rectangular prism  
geom555 Distinguishing between surface area and volume  
geom518 Volume of a solid made of cubes with unit fraction edge lengths  
geom535 Volume of a rectangular prism with fractional edge lengths  
geom865 Measuring the net of a solid to find surface area or volume  
geom382 Volume of an oblique rectangular prism  
alge617 Writing equivalent expressions for the volume of a rectangular prism  
geom565 Finding the side length of a cube given its volume  
geom571 Word problem involving the volume of a rectangular prism  
geom558 Word problem involving the rate of filling or emptying a rectangular prism  
geom386 Computations involving density, mass, and volume  
geom387 Word problem on density involving the volume of a rectangular solid

geom505 Volume of a piecewise rectangular prism  
 geom090 Volume of a triangular prism  
 geom572 Word problem involving the volume of a triangular prism  
 geom035 Volume of a cylinder  
 geom385 Informal argument for the formula of the volume of a cylinder  
 geom383 Volume of an oblique cylinder  
 geom573 Word problem involving the volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom388 Word problem on density involving the volume of a cylindrical solid  
 geom384 Using cross sections to identify solids with the same volume  
 geom133 Ratio of volumes  
 geom033 Volume of a pyramid  
 geom637 Relating the volumes of a rectangular prism and a rectangular pyramid  
 geom638 Relating the volumes of a triangular prism and a triangular pyramid  
 geom622 Volume of a cone  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom654 Informal argument for the formula of the volume of a cone  
 geom639 Relating the volumes of a cylinder and a cone  
 geom575 Word problem involving the volume of a cone  
 geom842 Surface area of a sphere  
 geom841 Volume of a sphere  
 geom574 Word problem involving the volume of a sphere  
 geom488 Identifying similar solids  
 geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids  
 geom489 Computing side length, surface area, and volume for similar solids  
 geom490 Word problem involving volumes of similar solids

### Circles

geom464 Identifying chords, secants, and tangents of a circle  
 geom848 Tangents of a circle: Problem type 1  
 geom849 Tangents of a circle: Problem type 2  
 geom470 Constructing a tangent of a circle  
 geom465 Naming and finding measures of central angles, inscribed angles, and arcs of a circle  
 geom467 Applying properties of radii, diameters, and chords  
 geom814 Angle measure in a circle graph  
 geom466 Arc length  
 geom805 Arc length and area of a sector of a circle  
 geom653 Computing ratios of arc lengths to radii and describing the result  
 pcalc002 Converting between degree and radian measure: Problem type 1  
 geom468 Central angles and inscribed angles of a circle  
 geom469 Central angles and angles involving chords and tangents of a circle  
 geom666 Inscribed angles in relation to a diameter or a polygon inscribed in a circle  
 geom667 Inscribed angles and angles involving chords and tangents of a circle  
 geom492 Establishing facts about a quadrilateral inscribed in a circle  
 geom312 Inscribing an equilateral triangle or a regular hexagon in a circle  
 geom313 Inscribing a square in a circle  
 geom314 Inscribing a circle in a triangle  
 geom315 Circumscribing a circle about a triangle  
 geom567 Angles of intersecting secants and tangents  
 geom568 Lengths of chords, secants, and tangents  
 geom496 Identifying the center and radius to graph a circle given its equation in standard form  
 alge094 Completing the square  
 geom497 Identifying the center and radius to graph a circle given its equation in general form: Basic  
 geom668 Identifying the center and radius to graph a circle given its equation in general form: Advanced  
 geom499 Writing the equation of a circle centered at the origin given its radius or a point on the circle  
 geom495 Writing an equation of a circle and identifying points that lie on the circle  
 geom498 Writing an equation of a circle given its center and radius or diameter  
 geom493 Deriving the equation of a circle using the Pythagorean Theorem  
 pcalc065 Writing an equation of a circle given its center and a point on the circle

pcalc066 Writing an equation of a circle given the endpoints of a diameter  
 alge954 Graphing a parabola of the form  $y = ax^2$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 alge974 Finding the vertex, x-intercepts, and axis of symmetry from the graph of a parabola  
 pcalc566 Graphing a parabola of the form  $y^2 = ax$  or  $x^2 = ay$   
 geom494 Deriving the equation of a parabola given its focus and directrix

## Probability

mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 pcalc809 Introduction to permutations and combinations  
 pcalc810 Permutations and combinations: Problem type 1  
 pcalc089 Permutations and combinations: Problem type 2  
 stat790 Permutations, combinations, and the multiplication principle for counting  
 mstat099 Determining a sample space and outcomes for a simple event  
 mstat100 Determining a sample space and outcomes for a compound event  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat046 Experimental and theoretical probability  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat116 Probabilities of a permutation and a combination  
 mstat048 Odds of an event  
 mstat011 Area as probability  
 mstat085 Identifying outcomes in a random number table used to simulate a compound event  
 mstat086 Using a random number table to simulate a compound event  
 mstat047 Introduction to expectation  
 mstat114 Using a random number table to make a fair decision  
 mstat097 Constructing a two-way frequency table: Basic  
 mstat098 Constructing a two-way frequency table: Advanced  
 mstat049 Computing a percentage from a table of values  
 stat020 Calculating relative frequencies in a contingency table  
 mstat019 Identifying independent events given descriptions of experiments  
 stat850 Probability of independent events  
 stat851 Probability of dependent events  
 stat117 Probabilities of draws with replacement  
 stat118 Probabilities of draws without replacement  
 mstat115 Determining outcomes for compound events and complements of events  
 mstat110 Using a Venn diagram to understand the multiplication rule for probability  
 mstat107 Outcomes and event probability: Conditional probability  
 mstat104 Identifying independent events given values of probabilities  
 mstat105 Computing conditional probability using a two-way frequency table  
 mstat106 Computing conditional probability to make an inference using a two-way frequency table  
 mstat118 Conditional probability: Basic  
 mstat109 Using a Venn diagram to understand the addition rule for probability  
 mstat108 Outcomes and event probability: Addition rule  
 mstat032 Probability of the union of two events  
 mstat117 Probability of intersection or union: Word problems

## B.91 CC Algebra 2

### Real Numbers

arith687 Fractional position on a number line  
alge286 Plotting integers on a number line  
arith605 Plotting rational numbers on a number line  
arith691 Ordering integers  
arith016 Square root of a perfect square  
arith763 Using a calculator to approximate a square root  
arith712 Ordering real numbers  
arith071 Absolute value of a number  
arith412 Finding all numbers with a given absolute value  
arith200 Integer addition: Problem type 1  
arith108 Integer addition: Problem type 2  
arith688 Integer subtraction: Problem type 1  
arith689 Integer subtraction: Problem type 2  
arith690 Integer subtraction: Problem type 3  
arith754 Addition and subtraction with 3 integers  
arith231 Integer multiplication and division  
arith800 Multiplication of 3 or 4 integers  
arith070 Least common multiple of 2 numbers  
arith804 Least common multiple of 3 numbers  
arith116 Signed fraction addition or subtraction: Basic  
arith864 Signed fraction subtraction involving double negation  
arith106 Signed fraction addition or subtraction: Advanced  
arith811 Addition and subtraction of 3 fractions involving signs  
arith822 Signed fraction multiplication: Basic  
arith105 Signed fraction multiplication: Advanced  
arith814 Signed fraction division  
arith695 Complex fraction without variables: Problem type 1  
arith117 Signed decimal addition and subtraction  
arith234 Signed decimal addition and subtraction with 3 numbers  
arith750 Signed decimal multiplication  
arith751 Signed decimal division  
arith440 Operations with absolute value: Problem type 1  
arith104 Operations with absolute value: Problem type 2  
alge694 Computing the distance between two integers on a number line  
arith702 Exponents and integers: Problem type 1  
arith703 Exponents and integers: Problem type 2  
arith704 Exponents and signed fractions  
arith118 Order of operations with integers  
arith600 Order of operations with integers and exponents  
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
alge004 Evaluating a quadratic expression: Integers  
mstat065 Converting between temperatures in Fahrenheit and Celsius  
alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
alge001 Identifying numbers as integers or non-integers  
alge002 Identifying numbers as rational or irrational  
alge432 Introduction to adding fractions with variables and common denominators  
alge607 Combining like terms: Integer coefficients  
alge187 Properties of addition  
alge666 Combining like terms: Fractional coefficients  
alge606 Distributive property: Whole number coefficients  
alge604 Distributive property: Integer coefficients  
alge610 Distributive property: Fractional coefficients  
alge612 Identifying parts in an algebraic expression  
alge613 Identifying equivalent algebraic expressions  
alge188 Properties of real numbers



alge608 Using distribution and combining like terms to simplify: Univariate  
 alge667 Identifying properties used to simplify an algebraic expression  
 alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
 alge293 Combining like terms in a quadratic expression  
 geom300 Perimeter of a square or a rectangle  
 geom078 Sides of polygons having the same perimeter  
 geom019 Area of a square or a rectangle  
 geom340 Area of a piecewise rectangular figure  
 geom142 Word problem involving the area between two rectangles  
 geom022 Area of a parallelogram  
 geom801 Area of a triangle  
 geom023 Area of a trapezoid  
 geom016 Circumference of a circle  
 geom301 Perimeter involving rectangles and circles  
 geom802 Circumference and area of a circle  
 geom477 Circumference and area of a circle: Exact answers in terms of pi  
 geom302 Area involving rectangles and circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom311 Volume of a rectangular prism  
 geom090 Volume of a triangular prism  
 geom035 Volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom033 Volume of a pyramid  
 geom622 Volume of a cone  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom841 Volume of a sphere  
 geom031 Surface area of a cube or a rectangular prism  
 geom091 Surface area of a triangular prism  
 geom621 Surface area of a cylinder  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom842 Surface area of a sphere

### Linear Equations and Inequalities

alge010 Additive property of equality with integers  
 alge836 Additive property of equality with signed fractions  
 alge797 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge266 Additive property of equality with a negative coefficient  
 alge006 Solving a two-step equation with integers  
 alge200 Solving an equation to find the value of an expression  
 alge837 Solving a multi-step equation given in fractional form  
 alge986 Identifying properties used to solve a linear equation  
 alge824 Solving a two-step equation with signed decimals  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge614 Clearing fractions in an equation  
 alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
 alge208 Solving a two-step equation with signed fractions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients

alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
 alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
 alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
 alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
 alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
 alge518 Solving for a variable inside parentheses in terms of other variables  
 alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
 alge603 Introduction to solving an absolute value equation  
 alge864 Solving an absolute value equation: Problem type 1  
 alge865 Solving an absolute value equation: Problem type 2  
 alge866 Solving an absolute value equation: Problem type 3  
 alge867 Solving an absolute value equation: Problem type 4  
 alge167 Solving an absolute value equation of the form  $-ax+b = -cx+d$   
 alge733 Writing a one-step expression for a real-world situation  
 alge831 Translating a phrase into a one-step expression  
 alge291 Translating a phrase into a two-step expression  
 alge016 Translating a sentence into a one-step equation  
 alge841 Translating a sentence into a multi-step equation  
 arith504 Writing an equation to represent a proportional relationship  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge628 Writing an equation of the form  $Ax + B = C$  to solve a word problem  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge629 Writing an equation of the form  $A(x + B) = C$  to solve a word problem  
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge673 Writing an equation to represent a real-world problem: Variable on both sides  
 alge730 Writing a multi-step equation for a real-world situation  
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge792 Solving a word problem with three unknowns using a linear equation  
 alge842 Solving a word problem involving consecutive integers  
 alge794 Solving a value mixture problem using a linear equation  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 alge218 Solving a word problem involving rates and time conversion  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 alge796 Solving a distance, rate, time problem using a linear equation  
 geom648 Finding side lengths of rectangles given one dimension and an area or a perimeter  
 geom561 Finding the dimensions of a rectangle given its perimeter and a relationship between sides  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom500 Solving equations involving vertical angles and linear pairs  
 geom628 Finding angle measures of a triangle given angles with variables  
 geom838 Circumference ratios  
 arith514 Converting a repeating decimal to a fraction  
 alge840 Solving a proportion of the form  $(x+a) \div b = c \div d$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 arith849 Finding the total amount given the percentage of a partial amount  
 arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
 arith851 Finding the final amount given the original amount and a percentage increase or decrease  
 arith847 Finding the sale price given the original price and percent discount  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith848 Finding the total cost including tax or markup  
 arith855 Finding the original amount given the result of a percentage increase or decrease  
 arith031 Finding the original price given the sale price and percent discount  
 arith858 Finding the percentage increase or decrease: Basic

arith225 Finding the percentage increase or decrease: Advanced  
 arith854 Computing a percent mixture  
 alge795 Solving a percent mixture problem using a linear equation  
 arith232 Finding simple interest without a calculator  
 alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge748 Writing an inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line  
 set001 Set builder notation  
 set004 Set builder and interval notation  
 set002 Union and intersection of finite sets  
 set005 Union and intersection of intervals  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge860 Solving inequalities with no solution or all real numbers as solutions  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge861 Solving a compound linear inequality: Graph solution, advanced  
 alge747 Solving a compound linear inequality: Interval notation  
 alge846 Translating a sentence into a multi-step inequality  
 alge623 Solving a word problem using a two-step linear inequality  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
 alge868 Solving an absolute value inequality: Problem type 1  
 alge943 Writing an absolute value inequality given a graph on the number line  
 alge869 Solving an absolute value inequality: Problem type 2  
 alge870 Solving an absolute value inequality: Problem type 3  
 alge871 Solving an absolute value inequality: Problem type 4  
 alge872 Solving an absolute value inequality: Problem type 5

### Graphing and Functions

alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 arith404 Naming the quadrant or axis of a point given its graph  
 arith405 Naming the quadrant or axis of a point given its coordinates  
 arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
 alge696 Finding distances between points that share a common coordinate given their coordinates  
 alge850 Table for a linear equation  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding x- and y-intercepts given the graph of a line on a grid

alge924 Finding x- and y-intercepts of a line given the equation: Basic  
alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
alge197 Graphing a line given its x- and y-intercepts  
alge881 Graphing a line by first finding its x- and y-intercepts  
alge875 Classifying slopes given graphs of lines  
alge886 Finding slope given the graph of a line on a grid  
alge887 Finding slope given two points on the line  
alge885 Finding the slope of horizontal and vertical lines  
alge888 Finding the coordinate that yields a given slope  
alge259 Graphing a line given its slope and y-intercept  
alge196 Graphing a line through a given point with a given slope  
alge625 Identifying linear equations: Basic  
alge876 Identifying linear equations: Advanced  
alge874 Identifying linear functions given ordered pairs  
alge891 Rewriting a linear equation in the form  $Ax + By = C$   
alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
alge882 Graphing a line by first finding its slope and y-intercept  
alge258 Writing an equation of a line given its slope and y-intercept  
alge892 Writing an equation and graphing a line given its slope and y-intercept  
alge314 Finding the slope, y-intercept, and equation for a linear function given a table of values  
alge893 Writing an equation in slope-intercept form given the slope and a point  
alge318 Finding the slope and a point on a line given its equation in point-slope form  
alge883 Graphing a line given its equation in point-slope form  
alge894 Writing an equation in point-slope form given the slope and a point  
alge313 Writing an equation in standard form given the slope and a point  
alge070 Writing an equation of a line given the y-intercept and another point  
alge072 Writing the equation of the line through two given points  
alge073 Writing the equations of vertical and horizontal lines through a given point  
alge322 Comparing linear functions to the parent function  $y=x$   
geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
alge895 Identifying parallel and perpendicular lines from equations  
geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
geom462 Identifying parallel and perpendicular lines from coordinates  
geom322 Identifying coordinates that give right triangles  
alge897 Writing and evaluating a function that models a real-world situation: Advanced  
alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
alge817 Finding the initial amount and rate of change given a table for a linear function  
alge818 Finding the initial amount and rate of change given a graph of a linear function  
alge992 Combining functions to write a new function that models a real-world situation  
alge987 Comparing properties of linear functions given in different forms  
alge989 Interpreting the parameters of a linear function that models a real-world situation  
alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
alge806 Application problem with a linear function: Finding a coordinate given two points  
alge991 Solving a linear equation by graphing  
mstat094 Constructing a scatter plot  
mstat030 Sketching the line of best fit  
mstat023 Scatter plots and correlation  
mstat068 Predictions from the line of best fit  
mstat067 Approximating the equation of a line of best fit and making predictions  
mstat069 Computing residuals  
mstat070 Interpreting residual plots  
mstat093 Classifying linear and nonlinear relationships from scatter plots  
mstat071 Linear relationship and the correlation coefficient  
mstat096 Identifying outliers and clustering in scatter plots  
fun032 Identifying functions from relations  
fun010 Vertical line test  
fun016 Domain and range from ordered pairs  
fun001 Table for a linear function  
pcalc760 Evaluating functions: Linear and quadratic or cubic  
fun033 Variable expressions as inputs of functions: Problem type 1

fun030 Evaluating a piecewise-defined function  
 alge294 Finding outputs of a one-step function that models a real-world situation: Function notation  
 alge295 Finding outputs of a two-step function with decimals that models a real-world situation: Function notation  
 alge296 Finding inputs and outputs of a two-step function that models a real-world situation: Function notation  
 alge990 Domain and range of a linear function that models a real-world situation  
 fun026 Finding an output of a function from its graph  
 pcalc761 Finding inputs and outputs of a function from its graph  
 fun007 Domain and range from the graph of a discrete relation  
 alge312 Finding domain and range from a linear graph in context  
 fun024 Domain and range from the graph of a continuous function  
 fun025 Domain and range from the graph of a piecewise function  
 pcalc750 Finding intercepts of a nonlinear function given its graph  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 pcalc751 Finding where a function is increasing, decreasing, or constant given the graph: Interval notation  
 pcalc752 Finding local maxima and minima of a function given the graph  
 mstat018 Choosing a graph to fit a narrative: Basic  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge896 Graphing an integer function and finding its range for a given domain  
 alge570 Graphing a function of the form  $f(x) = ax + b$ : Integer slope  
 alge571 Graphing a function of the form  $f(x) = ax + b$ : Fractional slope  
 alge913 Graphing an absolute value equation of the form  $y = A - |x - h| + k$ : Basic  
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge954 Graphing a parabola of the form  $y = ax^2$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge572 Graphing a function of the form  $f(x) = ax^2$   
 alge573 Graphing a function of the form  $f(x) = ax^2 + c$   
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 fun031 Graphing a piecewise-defined function: Problem type 1  
 alge997 Finding the average rate of change of a function given its equation  
 alge998 Finding the average rate of change of a function given its graph  
 alge953 Translating the graph of a parabola: One step  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge898 Translating the graph of an absolute value function: One step  
 alge899 Translating the graph of an absolute value function: Two steps  
 alge901 How the leading coefficient affects the graph of an absolute value function  
 alge185 Writing an equation for a function after a vertical translation  
 pcalc769 Translating the graph of a function: One step  
 pcalc770 Translating the graph of a function: Two steps  
 pcalc771 Transforming the graph of a function by reflecting over an axis  
 pcalc772 Transforming the graph of a function by shrinking or stretching  
 pcalc773 Transforming the graph of a function using more than one transformation  
 fun020 Writing an equation for a function after a vertical and horizontal translation

### Systems of Linear Equations and Inequalities

alge914 Identifying solutions to a system of linear equations  
 alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations  
 pcalc820 Using a graphing calculator to solve a system of linear equations: Basic  
 pcalc821 Using a graphing calculator to solve a system of linear equations: Advanced  
 alge317 Writing a system of linear equations given its graph  
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge916 Solving a system of linear equations with fractional coefficients  
 alge917 Solving a system of linear equations with decimal coefficients  
 alge634 Solving systems of linear equations with 0, 1, or infinitely many solutions

alge077 Creating an inconsistent system of linear equations  
 alge988 Identifying the operations used to create equivalent systems of equations  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge315 Writing an inequality given its graph in the plane: Horizontal or vertical boundary line  
 alge316 Writing an inequality given its graph in the plane: Slanted boundary line  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced  
 alge922 Graphing a system of three linear inequalities  
 alge729 Writing a multi-step inequality for a real-world situation  
 pcalc093 Solving a word problem using a system of linear inequalities: Problem type 1  
 pcalc095 Linear programming  
 pcalc094 Solving a word problem using linear programming  
 pcalc037 Scalar multiplication of a matrix  
 pcalc038 Addition or subtraction of matrices  
 pcalc740 Linear combination of matrices  
 pcalc039 Multiplication of matrices: Basic  
 pcalc710 Multiplication of matrices: Advanced  
 pcalc712 Gauss-Jordan elimination with a 2x2 matrix  
 pcalc046 Solving a system of linear equations given its augmented matrix  
 pcalc040 Finding the inverse of a 2x2 matrix  
 pcalc041 Finding the inverse of a 3x3 matrix  
 pcalc042 Finding the determinant of a 2x2 matrix  
 pcalc711 Using the inverse of a matrix to solve a 3x3 system of linear equations  
 pcalc043 Finding the determinant of a 3x3 matrix  
 pcalc045 Using Cramer's rule to solve a 2x2 system of linear equations  
 pcalc047 Using Cramer's rule to solve a 3x3 system of linear equations

## Exponents and Polynomials

alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge311 Product rule with positive exponents: Univariate  
 alge030 Product rule with positive exponents: Multivariate  
 arith029 Ordering numbers with positive exponents  
 alge826 Understanding the power rules of exponents  
 alge306 Introduction to the power of a power rule of exponents  
 alge305 Introduction to the power of a product rule of exponents  
 alge307 Power rules with positive exponents: Multivariate products  
 alge308 Power rules with positive exponents: Multivariate quotients  
 alge756 Power and product rules with positive exponents  
 alge451 Simplifying a ratio of multivariate monomials: Basic  
 alge827 Introduction to the quotient rule of exponents  
 alge452 Simplifying a ratio of univariate monomials  
 alge026 Quotient of expressions involving exponents  
 alge453 Simplifying a ratio of multivariate monomials: Advanced  
 alge927 Power and quotient rules with positive exponents  
 alge790 Evaluating expressions with exponents of zero



arith729 Evaluating an expression with a negative exponent: Whole number base  
arith042 Evaluating an expression with a negative exponent: Positive fraction base  
arith043 Evaluating an expression with a negative exponent: Negative integer base  
arith024 Ordering numbers with negative exponents  
alge791 Rewriting an algebraic expression without a negative exponent  
alge961 Introduction to the product rule with negative exponents  
alge028 Product rule with negative exponents  
alge755 Quotient rule with negative exponents: Problem type 1  
alge926 Quotient rule with negative exponents: Problem type 2  
alge025 Power of a power rule with negative exponents  
alge799 Power rules with negative exponents  
alge928 Power and quotient rules with negative exponents: Problem type 1  
alge929 Power and quotient rules with negative exponents: Problem type 2  
alge757 Power, product, and quotient rules with negative exponents  
arith036 Scientific notation with positive exponent  
arith037 Scientific notation with negative exponent  
scinot012 Converting between scientific notation and standard form in a real-world situation  
scinot008 Multiplying numbers written in scientific notation: Basic  
scinot009 Multiplying numbers written in scientific notation: Advanced  
scinot019 Multiplying numbers written in decimal form or scientific notation in a real-world situation  
scinot010 Dividing numbers written in scientific notation: Basic  
scinot011 Dividing numbers written in scientific notation: Advanced  
alge758 Degree and leading coefficient of a univariate polynomial  
alge031 Degree of a multivariate polynomial  
alge798 Simplifying a sum or difference of two univariate polynomials  
alge029 Simplifying a sum or difference of three univariate polynomials  
alge932 Simplifying a sum or difference of multivariate polynomials  
alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
alge835 Multiplying a multivariate polynomial by a monomial  
alge033 Multiplying binomials with leading coefficients of 1  
alge983 Multiplying binomials with leading coefficients greater than 1  
alge765 Multiplying binomials in two variables  
alge764 Multiplying conjugate binomials: Univariate  
alge081 Multiplying conjugate binomials: Multivariate  
alge032 Squaring a binomial: Univariate  
alge068 Squaring a binomial: Multivariate  
alge973 Multiplying binomials with negative coefficients  
alge935 Multiplication involving binomials and trinomials in one variable  
alge180 Multiplication involving binomials and trinomials in two variables  
alge759 Dividing a polynomial by a monomial: Univariate  
alge760 Dividing a polynomial by a monomial: Multivariate  
alge761 Polynomial long division: Problem type 1  
alge762 Polynomial long division: Problem type 2  
alge763 Polynomial long division: Problem type 3  
pcalc117 Synthetic division  
alge985 Closure properties of integers and polynomials  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith516 Greatest common factor of 3 numbers  
alge605 Factoring a linear binomial  
alge736 Introduction to the GCF of two monomials  
alge930 Greatest common factor of three univariate monomials  
alge037 Greatest common factor of two multivariate monomials  
alge738 Factoring out a monomial from a polynomial: Univariate  
alge739 Factoring out a monomial from a polynomial: Multivariate  
alge949 Factoring out a binomial from a polynomial: GCF factoring, basic  
alge923 Factoring a univariate polynomial by grouping: Problem type 1  
alge950 Factoring a univariate polynomial by grouping: Problem type 2  
alge951 Factoring a multivariate polynomial by grouping: Problem type 1  
alge952 Factoring a multivariate polynomial by grouping: Problem type 2



alge039 Factoring a quadratic with leading coefficient 1  
 alge942 Factoring a quadratic in two variables with leading coefficient 1  
 alge936 Factoring out a constant before factoring a quadratic  
 alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1  
 alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
 alge941 Factoring a quadratic with leading coefficient greater than 1: Problem type 3  
 alge978 Factoring a quadratic by the ac-method  
 alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
 alge937 Factoring a quadratic with a negative leading coefficient  
 alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge945 Factoring a perfect square trinomial with leading coefficient greater than 1  
 alge946 Factoring a perfect square trinomial in two variables  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge839 Factoring a difference of squares in two variables  
 alge948 Factoring a polynomial involving a GCF and a difference of squares: Univariate  
 alge833 Factoring a polynomial involving a GCF and a difference of squares: Multivariate  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge042 Factoring with repeated use of the difference of squares formula  
 alge044 Factoring a sum or difference of two cubes

### Quadratic and Polynomial Functions

alge681 Solving an equation written in factored form  
 alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge046 Roots of a product of polynomials  
 alge323 Finding the zeros of a quadratic function given its equation  
 alge163 Writing a quadratic equation given the roots and the leading coefficient  
 alge703 Solving a word problem using a quadratic equation with rational roots  
 arith601 Square root of a rational perfect square  
 arith760 Square roots of perfect squares with signs  
 arith094 Cube root of an integer  
 arith093 Simplifying the square root of a whole number less than 100  
 arith762 Simplifying the square root of a whole number greater than 100  
 arith767 Introduction to square root addition or subtraction  
 arith764 Introduction to square root multiplication  
 arith765 Square root multiplication: Basic  
 arith039 Square root multiplication: Advanced  
 alge525 Introduction to simplifying a product involving square roots using the distributive property  
 arith766 Simplifying a quotient of square roots  
 alge530 Simplifying a quotient involving a sum or difference with a square root  
 alge698 Solving an equation of the form  $x^3 = a$  using integers  
 alge778 Using  $i$  to rewrite square roots of negative numbers  
 alge779 Simplifying a product and quotient involving square roots of negative numbers  
 pcalc048 Adding or subtracting complex numbers  
 pcalc049 Multiplying complex numbers  
 pcalc050 Dividing complex numbers  
 pcalc053 Simplifying a power of  $i$   
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 alge958 Solving a quadratic equation using the square root property: Decimal answers, basic  
 alge959 Solving a quadratic equation using the square root property: Decimal answers, advanced  
 alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
 alge227 Solving a quadratic equation using the square root property: Exact answers, advanced  
 alge094 Completing the square  
 alge960 Solving a quadratic equation by completing the square: Decimal answers  
 alge780 Solving a quadratic equation by completing the square: Exact answers  
 alge095 Applying the quadratic formula: Exact answers

alge963 Applying the quadratic formula: Decimal answers  
 pcalc051 Solving a quadratic equation with complex roots  
 alge214 Discriminant of a quadratic equation  
 alge193 Discriminant of a quadratic equation with parameter  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge974 Finding the vertex, x-intercepts, and axis of symmetry from the graph of a parabola  
 alge569 Graphing a parabola of the form  $y = x^2 + bx + c$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients  
 alge320 Writing a quadratic function given its zeros  
 alge277 Finding the x-intercept(s) and the vertex of a parabola  
 pcalc714 Using a graphing calculator to find the zeros of a quadratic function  
 pcalc793 Using a graphing calculator to find the x-intercept(s) and vertex of a quadratic function  
 alge319 Rewriting a quadratic function in standard form  
 pcalc774 Rewriting a quadratic function to find the vertex of its graph  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge975 Domain and range from the graph of a parabola  
 alge976 Range of a quadratic function  
 pcalc680 Writing the equation of a quadratic function given its graph  
 alge957 Solving a quadratic equation by graphing  
 alge996 Comparing properties of quadratic functions given in different forms  
 alge702 Classifying the graph of a function  
 mstat102 Choosing a quadratic model and using it to make a prediction  
 alge784 Solving a quadratic inequality written in factored form  
 alge771 Solving a quadratic inequality  
 pcalc748 Graphing a quadratic inequality: Problem type 1  
 pcalc749 Graphing a quadratic inequality: Problem type 2  
 pcalc114 Even and odd functions: Problem type 1  
 pcalc764 Finding zeros of a polynomial function written in factored form  
 pcalc766 Finding a polynomial of a given degree with given zeros: Real zeros  
 pcalc765 Finding x- and y-intercepts given a polynomial function  
 pcalc782 Determining the end behavior of the graph of a polynomial function  
 pcalc783 Matching graphs with polynomial functions  
 pcalc738 Inferring properties of a polynomial function from its graph  
 pcalc794 Using a graphing calculator to find local extrema of a polynomial function  
 pcalc115 Using a graphing calculator to solve a word problem involving a local extremum of a polynomial function  
 pcalc786 Using the remainder theorem to evaluate a polynomial  
 pcalc787 The Factor Theorem  
 pcalc758 Finding all possible rational zeros using the rational zeros theorem: Problem type 1  
 pcalc759 Finding all possible rational zeros using the rational zeros theorem: Problem type 2  
 pcalc788 Descartes' Rule of Signs  
 pcalc743 Using the rational zeros theorem to find all zeros of a polynomial: Rational zeros  
 pcalc744 Using the rational zeros theorem to find all zeros of a polynomial: Irrational zeros  
 pcalc795 Using a graphing calculator to find zeros of a polynomial function  
 pcalc704 Using a graphing calculator to solve a word problem involving a polynomial of degree 3  
 pcalc785 Multiplying expressions involving complex conjugates  
 pcalc767 Finding a polynomial of a given degree with given zeros: Complex zeros  
 pcalc745 Using the rational zeros theorem to find all zeros of a polynomial: Complex zeros  
 pcalc703 Using the conjugate zeros theorem to find all zeros of a polynomial  
 pcalc705 Linear factors theorem and conjugate zeros theorem

### Rational Expressions

alge049 Restriction on a variable in a denominator: Linear  
 alge467 Restriction on a variable in a denominator: Quadratic  
 alge468 Evaluating a rational function: Problem type 1  
 alge469 Evaluating a rational function: Problem type 2  
 alge715 Domain of a rational function: Excluded values

alge454 Simplifying a ratio of factored polynomials: Linear factors  
alge455 Simplifying a ratio of factored polynomials: Factors with exponents  
alge456 Simplifying a ratio of polynomials using GCF factoring  
alge457 Simplifying a ratio of linear polynomials: 1, -1, and no simplification  
alge458 Simplifying a ratio of polynomials by factoring a quadratic with leading coefficient 1  
alge710 Simplifying a ratio of polynomials: Problem type 1  
alge682 Simplifying a ratio of polynomials: Problem type 2  
alge459 Simplifying a ratio of polynomials: Problem type 3  
alge034 Simplifying a ratio of multivariate polynomials  
alge053 Multiplying rational expressions involving multivariate monomials  
alge460 Multiplying rational expressions made up of linear expressions  
alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
alge461 Multiplying rational expressions involving quadratics with leading coefficients greater than 1  
alge462 Multiplying rational expressions involving multivariate quadratics  
alge054 Dividing rational expressions involving multivariate monomials  
alge463 Dividing rational expressions involving linear expressions  
alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
alge464 Dividing rational expressions involving quadratics with leading coefficients greater than 1  
alge465 Dividing rational expressions involving multivariate quadratics  
alge466 Multiplication and division of 3 rational expressions  
alge737 Introduction to the LCM of two monomials  
alge055 Least common multiple of two monomials  
alge427 Finding the LCD of rational expressions with linear denominators: Relatively prime  
alge428 Finding the LCD of rational expressions with linear denominators: Common factors  
alge429 Finding the LCD of rational expressions with quadratic denominators  
alge430 Writing equivalent rational expressions with monomial denominators  
alge431 Writing equivalent rational expressions with polynomial denominators  
alge304 Writing equivalent rational expressions involving opposite factors  
alge433 Adding rational expressions with common denominators and monomial numerators  
alge056 Adding rational expressions with common denominators and binomial numerators  
alge434 Adding rational expressions with common denominators and GCF factoring  
alge435 Adding rational expressions with common denominators and quadratic factoring  
alge436 Adding rational expressions with different denominators and a single occurrence of a variable  
alge437 Adding rational expressions with denominators  $ax$  and  $bx$ : Basic  
alge438 Adding rational expressions with denominators  $ax$  and  $bx$ : Advanced  
alge439 Adding rational expressions with denominators  $axn$  and  $bxm$   
alge440 Adding rational expressions with multivariate monomial denominators: Basic  
alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
alge441 Adding rational expressions with linear denominators without common factors: Basic  
alge442 Adding rational expressions with linear denominators without common factors: Advanced  
alge443 Adding rational expressions with linear denominators with common factors: Basic  
alge444 Adding rational expressions with linear denominators with common factors: Advanced  
alge445 Adding rational expressions with denominators  $ax-b$  and  $b-ax$   
alge661 Adding rational expressions involving different quadratic denominators  
alge446 Adding 3 rational expressions with different quadratic denominators  
arith696 Complex fraction without variables: Problem type 2  
alge470 Complex fraction involving univariate monomials  
alge058 Complex fraction involving multivariate monomials  
alge471 Complex fraction: GCF factoring  
alge472 Complex fraction: Quadratic factoring  
alge473 Complex fraction made of sums involving rational expressions: Problem type 1  
alge474 Complex fraction made of sums involving rational expressions: Problem type 2  
alge475 Complex fraction made of sums involving rational expressions: Problem type 3  
alge476 Complex fraction made of sums involving rational expressions: Problem type 4  
alge477 Complex fraction made of sums involving rational expressions: Problem type 5  
alge478 Complex fraction made of sums involving rational expressions: Problem type 6  
alge479 Complex fraction made of sums involving rational expressions: Multivariate  
alge480 Complex fraction with negative exponents: Problem type 1  
alge481 Complex fraction with negative exponents: Problem type 2  
alge162 Complex fraction that contains a complex fraction  
alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$

alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge421 Solving a rational equation that simplifies to linear: Denominators  $ax$  and  $bx$   
 alge422 Solving a rational equation that simplifies to linear: Like binomial denominators  
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge423 Solving a rational equation that simplifies to linear: Factorable quadratic denominator  
 alge424 Solving a rational equation that simplifies to quadratic: Proportional form, basic  
 alge425 Solving a rational equation that simplifies to quadratic: Denominator  $x$   
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 alge426 Solving a rational equation that simplifies to quadratic: Factorable quadratic denominator  
 alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced  
 alge508 Solving for a variable in terms of other variables in a rational equation: Problem type 1  
 alge509 Solving for a variable in terms of other variables in a rational equation: Problem type 2  
 alge510 Solving for a variable in terms of other variables in a rational equation: Problem type 3  
 arith612 Word problem involving multiple rates  
 alge770 Solving a work problem using a rational equation  
 alge450 Solving a distance, rate, time problem using a rational equation  
 geom133 Ratio of volumes  
 alge059 Ordering fractions with variables  
 alge982 Identifying direct variation equations  
 alge938 Identifying direct variation from ordered pairs and writing equations  
 alge904 Writing a direct variation equation  
 alge175 Word problem on direct variation  
 alge828 Interpreting direct variation from a graph  
 alge905 Writing an inverse variation equation  
 alge903 Identifying direct and inverse variation equations  
 alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
 alge176 Word problem on inverse variation  
 alge220 Word problem on inverse proportions  
 pcalc681 Writing an equation that models variation  
 alge772 Word problem on combined variation  
 pcalc917 Finding the asymptotes of a rational function: Constant over linear  
 pcalc918 Finding the asymptotes of a rational function: Linear over linear  
 pcalc790 Finding horizontal and vertical asymptotes of a rational function: Quadratic numerator or denominator  
 alge515 Graphing a rational function: Constant over linear  
 alge516 Graphing a rational function: Linear over linear  
 pcalc109 Graphing a rational function: Quadratic over linear  
 pcalc792 Graphing rational functions with holes  
 pcalc791 Matching graphs with rational functions: Two vertical asymptotes  
 alge783 Solving a rational inequality: Problem type 1  
 pcalc677 Solving a rational inequality: Problem type 2

## Radicals

alge413 Finding all square roots of a number  
 arith602 Estimating a square root  
 arith761 Square roots of integers raised to even exponents  
 alge415 Introduction to simplifying a radical expression with an even exponent  
 alge264 Square root of a perfect square monomial  
 alge537 Using absolute value to simplify square roots of perfect square monomials  
 alge549 Finding  $n$ th roots of perfect  $n$ th powers with signs  
 arith768 Finding the  $n$ th root of a perfect  $n$ th power fraction  
 alge550 Finding the  $n$ th root of a perfect  $n$ th power monomial  
 alge538 Using absolute value to simplify higher radical expressions  
 alge539 Table for a square root function  
 alge546 Evaluating a cube root function  
 alge565 Domain of a square root function: Basic  
 alge566 Domain of a square root function: Advanced  
 alge547 Domains of higher root functions  
 alge543 Graphing a square root function: Problem type 1

alge544 Graphing a square root function: Problem type 2  
alge545 Graphing a square root function: Problem type 3  
alge548 Graphing a cube root function  
alge812 Converting between radical form and exponent form  
alge560 Rational exponents: Unit fraction exponents and whole number bases  
alge561 Rational exponents: Unit fraction exponents and bases involving signs  
alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
alge251 Rational exponents: Negative exponents and fractional bases  
alge558 Rational exponents: Product rule  
alge559 Rational exponents: Quotient rule  
alge773 Rational exponents: Products and quotients with negative exponents  
alge562 Rational exponents: Power of a power rule  
alge249 Rational exponents: Powers of powers with negative exponents  
pcalc682 Evaluating functions: Absolute value, rational, radical  
alge080 Simplifying a radical expression with an even exponent  
alge520 Introduction to simplifying a radical expression with an odd exponent  
alge521 Simplifying a radical expression with an odd exponent  
alge275 Simplifying a radical expression with two variables  
alge273 Simplifying a higher root of a whole number  
alge551 Introduction to simplifying a higher radical expression  
alge552 Simplifying a higher radical expression: Univariate  
alge811 Simplifying a higher radical expression: Multivariate  
arith032 Square root addition or subtraction  
alge533 Square root addition or subtraction with three terms  
alge531 Introduction to simplifying a sum or difference of radical expressions: Univariate  
alge532 Simplifying a sum or difference of radical expressions: Univariate  
alge084 Simplifying a sum or difference of radical expressions: Multivariate  
alge554 Simplifying a sum or difference of higher roots  
alge555 Simplifying a sum or difference of higher radical expressions  
alge522 Introduction to simplifying a product of radical expressions: Univariate  
alge523 Simplifying a product of radical expressions: Univariate  
alge640 Simplifying a product of radical expressions: Multivariate  
alge082 Simplifying a product of radical expressions: Multivariate, fractional expressions  
alge556 Introduction to simplifying a product of higher roots  
alge557 Simplifying a product of higher radical expressions  
alge526 Simplifying a product involving square roots using the distributive property: Basic  
alge276 Simplifying a product involving square roots using the distributive property: Advanced  
alge774 Special products of radical expressions: Conjugates and squaring  
alge984 Classifying sums and products as rational or irrational  
alge527 Rationalizing a denominator: Quotient involving square roots  
alge528 Rationalizing a denominator: Square root of a fraction  
alge529 Rationalizing a denominator: Quotient involving a monomial  
alge534 Rationalizing a denominator using conjugates: Integer numerator  
alge535 Rationalizing a denominator using conjugates: Square root in numerator  
alge536 Rationalizing a denominator using conjugates: Variable in denominator  
alge564 Rationalizing a denominator: Quotient involving a higher radical  
alge775 Rationalizing a denominator: Quotient involving higher radicals and monomials  
alge563 Simplifying products or quotients of higher radicals with different indices: Univariate  
alge776 Simplifying products or quotients of higher radicals with different indices: Multivariate  
alge400 Introduction to solving a radical equation  
alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
alge402 Solving a radical equation that simplifies to a linear equation: One radical, advanced  
alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
alge403 Solving a radical equation that simplifies to a quadratic equation: One radical, basic  
alge404 Solving a radical equation that simplifies to a quadratic equation: One radical, advanced  
alge411 Solving a radical equation with a quadratic expression under the radical  
alge405 Solving a radical equation with two radicals that simplifies to  $\sqrt{x} = a$   
alge182 Solving a radical equation that simplifies to a quadratic equation: Two radicals  
alge412 Algebraic symbol manipulation with radicals  
alge542 Word problem involving radical equations: Basic  
alge409 Word problem involving radical equations: Advanced  
alge410 Solving an equation with a root index greater than 2: Problem type 1

alge417 Solving an equation with a root index greater than 2: Problem type 2  
 alge093 Solving an equation using the odd-root property: Problem type 1  
 alge228 Solving an equation using the odd-root property: Problem type 2  
 alge416 Solving an equation with exponent  $1/a$ : Problem type 1  
 alge418 Solving an equation with exponent  $1/a$ : Problem type 2  
 alge230 Solving an equation with positive rational exponent  
 alge231 Solving an equation with negative rational exponent  
 alge781 Solving an equation that can be written in quadratic form: Problem type 1  
 alge782 Solving an equation that can be written in quadratic form: Problem type 2  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem  
 geom603 Identifying side lengths that give right triangles  
 alge713 Using the Pythagorean Theorem and a quadratic equation to find side lengths of a right triangle  
 fun019 Sum, difference, and product of two functions  
 alge786 Quotient of two functions: Basic  
 alge716 Introduction to the composition of two functions  
 fun022 Composition of two functions: Basic  
 pcalc776 Expressing a function as a composition of two functions  
 fun021 Composition of two functions: Domain and range  
 alge129 Composition of two functions: Advanced  
 pcalc924 Determining whether an equation defines a function: Basic  
 pcalc757 Determining whether an equation defines a function: Advanced  
 fun011 Horizontal line test  
 pcalc777 Determining whether two functions are inverses of each other  
 fun012 Inverse functions: Linear, discrete  
 alge130 Inverse functions: Rational  
 pcalc778 Inverse functions: Quadratic, cubic, radical

### Exponential and Logarithmic Functions

alge971 Table for an exponential function  
 alge969 Graphing an exponential function:  $f(x) = ax$   
 alge970 Graphing an exponential function:  $f(x) = a(b)^x$   
 alge712 Graphing an exponential function and its asymptote:  $f(x) = a(b)^x$   
 alge321 Finding domain and range from the graph of an exponential function  
 pcalc922 Translating the graph of an exponential function  
 pcalc797 The graph, domain, and range of an exponential function  
 pcalc103 Graphing an exponential function and its asymptote:  $f(x) = a(e)^x - b + c$   
 alge830 Evaluating an exponential function that models a real-world situation  
 pcalc919 Evaluating an exponential function with base  $e$  that models a real-world situation  
 arith853 Introduction to compound interest  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest  
 alge966 Finding the initial amount and rate of change given an exponential function  
 alge968 Writing an equation that models exponential growth or decay  
 alge967 Writing an exponential function rule given a table of ordered pairs  
 mstat103 Choosing an exponential model and using it to make a prediction  
 alge993 Comparing linear, polynomial, and exponential functions  
 alge108 Converting between logarithmic and exponential equations  
 pcalc799 Converting between natural logarithmic and exponential equations  
 alge232 Evaluating a logarithmic expression  
 alge233 Solving an equation of the form  $\log_b a = c$   
 pcalc923 Translating the graph of a logarithmic function  
 alge788 Graphing a logarithmic function: Basic  
 pcalc800 The graph, domain, and range of a logarithmic function  
 pcalc104 Graphing a logarithmic function: Advanced  
 pcalc708 Basic properties of logarithms  
 pcalc779 Expanding a logarithmic expression: Problem type 1  
 pcalc780 Expanding a logarithmic expression: Problem type 2



alge787 Writing an expression as a single logarithm  
 pcalc612 Change of base for logarithms: Problem type 1  
 pcalc613 Change of base for logarithms: Problem type 2  
 pcalc803 Solving a multi-step equation involving a single logarithm  
 pcalc804 Solving a multi-step equation involving natural logarithms  
 pcalc805 Solving an equation involving logarithms on both sides: Problem type 2  
 alge113 Solving an equation involving logarithms on both sides: Problem type 1  
 alge301 Solving an exponential equation by finding common bases: Linear exponents  
 alge482 Solving an exponential equation by finding common bases: Linear and quadratic exponents  
 pcalc920 Solving an exponential equation by using logarithms: Decimal answers, basic  
 pcalc921 Solving an exponential equation by using natural logarithms: Decimal answers  
 alge111 Solving an exponential equation by using logarithms: Exact answers in logarithmic form  
 pcalc806 Using a graphing calculator to solve an exponential or logarithmic equation  
 alge178 Finding the time to reach a limit in a word problem on exponential growth or decay  
 pcalc614 Finding the initial or final amount in a word problem on exponential growth or decay  
 pcalc615 Finding the rate or time in a word problem on continuous exponential growth or decay

### Sequences and Conics

alge644 Finding the first terms of an arithmetic sequence using an explicit rule  
 alge645 Finding the first terms of a geometric sequence using an explicit rule  
 pcalc080 Finding the first terms of a sequence using an explicit rule with multiple occurrences of  $n$   
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge908 Finding the first terms of a sequence using a recursive rule  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 pcalc715 Finding a specified term of an arithmetic sequence given two terms of the sequence  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge910 Writing a recursive rule for an arithmetic sequence  
 pcalc718 Sum of the first  $n$  terms of an arithmetic sequence  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc717 Finding a specified term of a geometric sequence given two terms of the sequence  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge911 Writing recursive rules for arithmetic and geometric sequences  
 pcalc719 Sum of the first  $n$  terms of a geometric sequence  
 pcalc720 Sum of an infinite geometric series  
 alge965 Identifying linear, quadratic, and exponential functions given ordered pairs  
 alge132 Distance between two points in the plane: Exact answers  
 alge324 Distance between two points in the plane: Decimal answers  
 geom323 Identifying scalene, isosceles, and equilateral triangles given coordinates of their vertices  
 alge191 Midpoint of a line segment in the plane  
 alge414 Finding an endpoint of a line segment given the other endpoint and the midpoint  
 pcalc566 Graphing a parabola of the form  $y^2 = ax$  or  $x^2 = ay$   
 pcalc067 Graphing a parabola of the form  $ay^2 + by + cx + d = 0$  or  $ax^2 + bx + cy + d = 0$   
 geom494 Deriving the equation of a parabola given its focus and directrix  
 pcalc068 Writing an equation of a parabola given the vertex and the focus  
 pcalc069 Finding the focus of a parabola of the form  $ay^2 + by + cx + d = 0$  or  $ax^2 + bx + cy + d = 0$   
 geom496 Identifying the center and radius to graph a circle given its equation in standard form  
 geom497 Identifying the center and radius to graph a circle given its equation in general form: Basic  
 geom668 Identifying the center and radius to graph a circle given its equation in general form: Advanced  
 geom499 Writing the equation of a circle centered at the origin given its radius or a point on the circle  
 geom495 Writing an equation of a circle and identifying points that lie on the circle  
 geom498 Writing an equation of a circle given its center and radius or diameter



geom493 Deriving the equation of a circle using the Pythagorean Theorem  
 pcalc065 Writing an equation of a circle given its center and a point on the circle  
 pcalc066 Writing an equation of a circle given the endpoints of a diameter  
 pcalc734 Graphing an ellipse given its equation in standard form  
 pcalc070 Graphing an ellipse centered at the origin:  $Ax^2 + By^2 = C$   
 pcalc071 Graphing an ellipse given its equation in general form  
 pcalc072 Finding the foci of an ellipse given its equation in general form  
 pcalc074 Writing an equation of an ellipse given the center, an endpoint of an axis, and the length of the other axis  
 pcalc735 Graphing a hyperbola given its equation in standard form  
 pcalc075 Graphing a hyperbola centered at the origin:  $Ax^2 - By^2 - C = 0$   
 pcalc076 Graphing a hyperbola given its equation in general form  
 pcalc077 Finding the foci of a hyperbola given its equation in general form  
 pcalc078 Writing an equation of a hyperbola given the foci and the vertices  
 pcalc736 Classifying conics given their equations  
 alge994 Graphically solving a system of linear and quadratic equations  
 alge995 Solving a system of linear and quadratic equations  
 pcalc716 Using a graphing calculator to solve a system of linear and quadratic equations: Basic  
 pcalc796 Using a graphing calculator to solve a system of equations  
 pcalc098 Solving a system of nonlinear equations: Problem type 1  
 pcalc096 Graphing a system of nonlinear inequalities: Problem type 1  
 pcalc097 Graphing a system of nonlinear inequalities: Problem type 2

### Statistics and Probability

mstat080 Choosing an appropriate method for gathering data: Problem type 1  
 mstat081 Choosing an appropriate method for gathering data: Problem type 2  
 mstat047 Introduction to expectation  
 mstat049 Computing a percentage from a table of values  
 mstat087 Making an inference using a two-way frequency table  
 stat020 Calculating relative frequencies in a contingency table  
 stat805 Making a reasonable inference based on proportion statistics  
 mstat037 Constructing a line plot  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 arith856 Finding a percentage of a total amount in a circle graph  
 stat801 Computations from a circle graph  
 geom814 Angle measure in a circle graph  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat089 Computations involving the mean, sample size, and sum of a data set  
 stat803 Finding the value for a new score that will yield a given mean  
 stat802 Rejecting unreasonable claims based on average statistics  
 mstat066 Weighted mean  
 mstat028 Mean and median of a data set  
 mstat029 How changing a value affects the mean and median  
 mstat095 Finding outliers in a data set  
 mstat053 Choosing the best measure to describe data  
 stat009 Percentiles  
 mstat042 Interpreting a Venn diagram of 2 sets  
 mstat043 Interpreting a Venn diagram of 3 sets  
 stat119 Venn diagrams: Two events  
 stat101 Venn diagrams: Word problems  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 pcalc809 Introduction to permutations and combinations

pcalc810 Permutations and combinations: Problem type 1  
 pcalc089 Permutations and combinations: Problem type 2  
 pcalc090 Permutations and combinations: Problem type 3  
 pcalc087 Binomial formula  
 mstat099 Determining a sample space and outcomes for a simple event  
 mstat100 Determining a sample space and outcomes for a compound event  
 mstat010 Probability of an event  
 mstat046 Experimental and theoretical probability  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat116 Probabilities of a permutation and a combination  
 mstat011 Area as probability  
 mstat019 Identifying independent events given descriptions of experiments  
 stat850 Probability of independent events  
 stat851 Probability of dependent events  
 stat117 Probabilities of draws with replacement  
 stat118 Probabilities of draws without replacement  
 mstat115 Determining outcomes for compound events and complements of events  
 mstat110 Using a Venn diagram to understand the multiplication rule for probability  
 mstat107 Outcomes and event probability: Conditional probability  
 mstat104 Identifying independent events given values of probabilities  
 mstat105 Computing conditional probability using a two-way frequency table  
 mstat106 Computing conditional probability to make an inference using a two-way frequency table  
 mstat118 Conditional probability: Basic  
 mstat109 Using a Venn diagram to understand the addition rule for probability  
 mstat108 Outcomes and event probability: Addition rule  
 mstat032 Probability of the union of two events  
 mstat117 Probability of intersection or union: Word problems  
 stat174 Binomial problems: Basic  
 stat155 Binomial problems: Advanced  
 mstat085 Identifying outcomes in a random number table used to simulate a compound event  
 mstat086 Using a random number table to simulate a compound event  
 mstat114 Using a random number table to make a fair decision  
 mstat072 Five-number summary and interquartile range  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 stat021 Population standard deviation  
 stat852 Word problem involving calculations from a normal distribution

## Trigonometry

pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc008 Finding trigonometric ratios given a right triangle  
 geom317 Understanding trigonometric ratios through similar right triangles  
 geom316 Relationship between the sines and cosines of complementary angles  
 geom318 Using similar right triangles to find trigonometric ratios  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc642 Solving a right triangle  
 geom860 Special right triangles: Decimal answers  
 geom506 Special right triangles: Exact answers  
 pcalc001 Converting degrees-minutes-seconds to decimal degrees  
 pcalc661 Converting a decimal degree to degrees-minutes-seconds  
 pcalc002 Converting between degree and radian measure: Problem type 1  
 pcalc621 Converting between degree and radian measure: Problem type 2

pcalc006 Sketching an angle in standard position  
 pcalc622 Coterminal angles  
 pcalc005 Arc length and central angle measure  
 pcalc623 Area of a sector of a circle  
 pcalc627 Finding coordinates on the unit circle for special angles  
 pcalc629 Trigonometric functions and special angles: Problem type 1  
 pcalc628 Finding trigonometric ratios from a point on the unit circle  
 pcalc630 Trigonometric functions and special angles: Problem type 2  
 pcalc631 Trigonometric functions and special angles: Problem type 3  
 pcalc626 Reference angles: Problem type 1  
 pcalc632 Reference angles: Problem type 2  
 pcalc671 Determining the location of a terminal point given the signs of trigonometric values  
 pcalc011 Finding values of trigonometric functions given information about an angle: Problem type 1  
 pcalc012 Finding values of trigonometric functions given information about an angle: Problem type 2  
 pcalc013 Finding values of trigonometric functions given information about an angle: Problem type 3  
 pcalc016 Values of inverse trigonometric functions  
 pcalc031 Solving a triangle with the law of sines: Problem type 1  
 pcalc032 Solving a triangle with the law of sines: Problem type 2  
 pcalc644 Solving a word problem using the law of sines  
 geom320 Proving the law of sines  
 pcalc033 Solving a triangle with the law of cosines  
 pcalc645 Solving a word problem using the law of cosines  
 geom409 Proving the law of cosines  
 geom439 Using trigonometry to find the area of a right triangle  
 pcalc646 Finding the area of a triangle using trigonometry  
 geom319 Expressing the area of a triangle in terms of the sine of one of its angles  
 pcalc647 Heron's formula  
 pcalc107 Sketching the graph of  $y = a \sin(x+c)$  or  $y = a \cos(x+c)$   
 pcalc106 Sketching the graph of  $y = a \sin(bx)$  or  $y = a \cos(bx)$   
 pcalc014 Sketching the graph of  $y = a \sin(bx+c)$  or  $y = a \cos(bx+c)$   
 pcalc633 Amplitude and period of sine and cosine functions  
 pcalc634 Amplitude, period, and phase shift of sine and cosine functions  
 pcalc635 Writing the equation of a sine or cosine function given its graph: Problem type 1  
 pcalc636 Writing the equation of a sine or cosine function given its graph: Problem type 2  
 pcalc640 Word problem involving a sine or cosine function: Problem type 1  
 pcalc641 Word problem involving a sine or cosine function: Problem type 2  
 pcalc637 Matching graphs and equations for secant, cosecant, tangent, and cotangent functions  
 pcalc017 Sketching the graph of a secant or cosecant function: Problem type 1  
 pcalc638 Sketching the graph of a secant or cosecant function: Problem type 2  
 pcalc105 Sketching the graph of a tangent or cotangent function: Problem type 1  
 pcalc015 Sketching the graph of a tangent or cotangent function: Problem type 2  
 pcalc648 Simplifying trigonometric expressions  
 pcalc666 Using cofunction identities  
 pcalc110 Verifying a trigonometric identity  
 pcalc034 Proving trigonometric identities: Problem type 1  
 pcalc404 Proving trigonometric identities: Problem type 2  
 pcalc405 Proving trigonometric identities: Problem type 3  
 pcalc406 Proving trigonometric identities using odd and even properties  
 pcalc029 Sum and difference identities: Problem type 1  
 pcalc663 Sum and difference identities: Problem type 2  
 pcalc664 Sum and difference identities: Problem type 3  
 pcalc403 Proving trigonometric identities using sum and difference properties  
 pcalc030 Double-angle identities: Problem type 1  
 pcalc667 Double-angle identities: Problem type 2  
 pcalc662 Half-angle identities: Problem type 1  
 pcalc665 Half-angle identities: Problem type 2  
 pcalc402 Proving trigonometric identities using double-angle properties  
 pcalc650 Finding solutions in an interval for a basic equation involving sine or cosine  
 pcalc651 Finding solutions in an interval for a basic tangent, cotangent, secant, or cosecant equation  
 pcalc660 Solving a basic trigonometric equation using a calculator  
 pcalc020 Solving a basic trigonometric equation involving sine or cosine  
 pcalc021 Solving a basic trigonometric equation involving tangent, cotangent, secant, or cosecant

pcalc670 Finding solutions in an interval for a trigonometric equation in factored form  
 pcalc652 Finding solutions in an interval for a trigonometric equation with a squared function: Problem type 1  
 pcalc653 Finding solutions in an interval for a trigonometric equation with a squared function: Problem type 2  
 pcalc654 Finding solutions in an interval for a trigonometric equation using Pythagorean identities: Problem type 1  
 pcalc657 Finding solutions in an interval for an equation with sine and cosine using double-angle identities  
 pcalc668 Solving a trigonometric equation modeling a real-world situation  
 pcalc811 Using a graphing calculator to solve a trigonometric equation  
 pcalc022 Solving a trigonometric equation involving a squared function: Problem type 1  
 pcalc023 Solving a trigonometric equation involving a squared function: Problem type 2  
 pcalc024 Solving a trigonometric equation involving more than one function  
 pcalc027 Solving a trigonometric equation using double-angle identities  
 pcalc060 Magnitude of a vector given in component form  
 pcalc739 Multiplication of a vector by a scalar: Geometric approach  
 pcalc063 Translation of a vector  
 geom856 Vector addition and scalar multiplication: Component form  
 vector008 Linear combination of vectors: Component form  
 geom857 Vector addition: Geometric approach  
 vector007 Vector subtraction: Geometric approach  
 vector002 Finding the magnitude and direction of a vector given its graph  
 vector005 Finding the components of a vector given its graph  
 vector009 Dot product of vectors given in component form  
 vector010 Using the dot product to find perpendicular vectors  
 pcalc730 Finding the angle between two vectors given in component form

## B.92 CC Math 6 Tutorial Lab (Intervention)

### Whole Numbers

arith124 Whole number place value: Problem type 1  
 arith125 Whole number place value: Problem type 2  
 arith066 Expanded form  
 arith643 Expanded form with zeros  
 arith028 Numeral translation: Problem type 1  
 arith060 Numeral translation: Problem type 2  
 arith633 One-digit addition with carry  
 arith634 Addition of 3 or 4 one-digit numbers  
 arith001 Addition without carry  
 arith635 Adding a 2-digit number and a 1-digit number with carry  
 arith050 Addition with carry  
 arith630 Addition with carry to the hundreds place  
 arith012 Addition of large numbers  
 arith636 Subtracting a 1-digit number from a 2-digit number  
 arith007 Subtraction without borrowing  
 arith006 Subtraction with borrowing  
 arith682 Subtraction with multiple regrouping steps  
 arith637 Subtraction and regrouping with zeros  
 arith653 Fact families for addition and subtraction  
 arith613 Word problem with addition or subtraction of whole numbers  
 mstat061 Describing an increasing or decreasing pattern from a table of values  
 arith126 Multiplication as repeated addition  
 arith008 One-digit multiplication  
 arith639 Using multiplication to find the number of squares  
 arith679 Multiplication by 10, 100, and 1000  
 arith003 Multiplication without carry  
 arith004 Multiplication with carry  
 arith632 Multiplication with trailing zeros: Problem type 1  
 arith615 Introduction to multiplication of large numbers

arith675 Understanding multiplication of a one-digit number with a larger number  
arith638 Multiplication with trailing zeros: Problem type 2  
arith014 Multiplication of large numbers  
arith641 Multiples: Problem type 1  
arith642 Multiples: Problem type 2  
arith075 Division facts  
arith654 Fact families for multiplication and division  
arith614 Word problem with multiplication or division of whole numbers  
arith130 Word problem with multiplication and addition or subtraction of whole numbers  
arith451 Word problem on unit rates associated with ratios of whole numbers: Whole number answers  
arith243 Division of whole numbers given in fractional form  
arith711 Division involving zero  
arith052 Division without carry  
arith005 Division with carry  
arith901 Whole number division: 2-digit by 2-digit, no remainder  
arith902 Whole number division: 3-digit by 2-digit, no remainder  
arith680 Division with trailing zeros: Problem type 1  
arith649 Division with trailing zeros: Problem type 2  
arith616 Quotient and remainder: Problem type 1  
arith644 Word problem on quotient and remainder  
arith617 Quotient and remainder: Problem type 2  
arith631 Quotient and remainder: Problem type 3  
arith650 Division involving quotients with intermediate zeros  
arith023 Word problem with division of whole numbers and rounding  
arith651 Introduction to inequalities  
arith652 Comparing a numerical expression with a number  
arith077 Ordering large numbers  
arith078 Rounding to tens or hundreds  
arith123 Rounding to hundreds or thousands  
arith061 Rounding to thousands, ten thousands, or hundred thousands  
arith101 Estimating a sum of whole numbers  
arith102 Estimating a difference of whole numbers  
arith677 Estimating a product  
arith678 Estimating a quotient  
arith692 Writing expressions using exponents  
arith233 Introduction to exponents  
arith683 Power of 10: Positive exponent  
arith645 Introduction to parentheses  
arith865 Comparing numerical expressions with parentheses  
arith681 Introduction to order of operations  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
arith646 Even and odd numbers  
arith647 Divisibility rules for 2, 5, and 10  
arith648 Divisibility rules for 3 and 9  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith516 Greatest common factor of 3 numbers  
arith409 Introduction to the distributive property  
arith657 Understanding the distributive property  
arith410 Introduction to factoring with numbers  
arith411 Factoring a sum or difference of whole numbers  
arith070 Least common multiple of 2 numbers  
arith804 Least common multiple of 3 numbers  
arith418 Word problem involving the least common multiple of 2 numbers  
arith240 Word problem with common multiples  
alge284 Evaluating an algebraic expression: Whole number addition or subtraction  
alge683 Evaluating an algebraic expression: Whole number multiplication or division

alge285 Evaluating an algebraic expression: Whole numbers with two operations  
 alge649 Evaluating a formula  
 alge648 Evaluating an algebraic expression: Whole numbers with one operation and an exponent  
 alge832 Evaluating an algebraic expression: Whole number operations and exponents  
 alge733 Writing a one-step expression for a real-world situation  
 alge831 Translating a phrase into a one-step expression  
 alge291 Translating a phrase into a two-step expression  
 alge650 Identifying solutions to a one-step linear equation: Problem type 1  
 alge651 Identifying solutions to a one-step linear equation: Problem type 2  
 alge009 Additive property of equality with whole numbers  
 alge813 Introduction to solving an equation with multiplication or division  
 alge008 Multiplicative property of equality with whole numbers  
 alge803 Using two steps to solve an equation with whole numbers  
 alge016 Translating a sentence into a one-step equation  
 geom339 Perimeter of a polygon  
 geom300 Perimeter of a square or a rectangle  
 geom019 Area of a square or a rectangle  
 geom866 Perimeter and area on a grid

## Decimals

arith110 Decimal place value: Tenths and hundredths  
 arith220 Decimal place value: Hundreds to ten thousandths  
 arith714 Writing a decimal number less than 1 given its name  
 arith715 Writing a decimal number greater than 1 given its name  
 arith716 Writing a decimal number given its name: Advanced  
 arith829 Reading decimal position on a number line: Tenths  
 arith830 Reading decimal position on a number line: Hundredths  
 arith831 Understanding decimal position on a number line using zoom: Hundredths  
 arith832 Understanding decimal position on a number line using zoom: Thousandths  
 arith129 Introduction to ordering decimals  
 arith608 Ordering decimals  
 arith221 Rounding decimals  
 arith624 Addition of aligned decimals  
 arith013 Decimal addition with 3 numbers  
 arith734 Subtraction of aligned decimals  
 arith735 Decimal subtraction: Basic  
 arith736 Decimal subtraction: Advanced  
 arith737 Decimal addition and subtraction with 3 or more numbers  
 arith131 Estimating a decimal sum or difference  
 arith668 Addition with money  
 arith669 Subtraction with money  
 arith132 Word problem with addition or subtraction of 2 decimals  
 arith133 Word problem with addition of 3 or 4 decimals and whole numbers  
 arith134 Word problem with subtraction of a whole number and a decimal: Regrouping with zeros  
 arith739 Introduction to decimal multiplication  
 arith017 Multiplication of a decimal by a whole number  
 arith055 Decimal multiplication: Problem type 1  
 arith046 Decimal multiplication: Problem type 2  
 arith082 Multiplication of a decimal by a power of ten  
 arith738 Multiplication of a decimal by a power of 0.1  
 arith740 Multiplication of decimals that have a product less than 0.1  
 arith752 Estimating a product of decimals  
 arith135 Word problem with multiplication of a decimal and a whole number  
 arith137 Word problem with multiplication of two decimals  
 arith628 Word problem with multiple decimal operations: Problem type 1  
 arith744 Whole number division with decimal answers  
 arith081 Division of a decimal by a whole number  
 arith743 Division of a decimal by a 1-digit decimal  
 arith019 Division of a decimal by a 2-digit decimal

arith083 Division of a decimal by a power of ten  
 arith742 Division of a decimal by a power of 0.1  
 arith745 Decimal division with rounding  
 arith136 Word problem with division of a decimal and a whole number  
 arith138 Word problem with division of two decimals  
 arith629 Word problem with multiple decimal operations: Problem type 2  
 arith103 Average of two numbers  
 arith753 Squaring decimal bases: Products greater than 0.1  
 arith741 Exponents and decimals: Products less than 0.1  
 arith720 Order of operations with decimals: Problem type 1  
 arith746 Order of operations with decimals: Problem type 2  
 arith747 Order of operations with decimals: Problem type 3  
 alge800 Additive property of equality with decimals  
 alge825 Multiplicative property of equality with decimals  
 scinot023 Introduction to scientific notation with positive exponents  
 arith036 Scientific notation with positive exponent

### Fractions

arith623 Introduction to fractions  
 arith665 Understanding equivalent fractions  
 arith212 Equivalent fractions  
 arith666 Introduction to simplifying a fraction  
 arith067 Simplifying a fraction  
 arith687 Fractional position on a number line  
 arith667 Plotting fractions on a number line  
 arith044 Ordering fractions with the same denominator  
 arith091 Ordering fractions with the same numerator  
 arith092 Using a common denominator to order fractions  
 arith079 Product of a unit fraction and a whole number  
 arith086 Product of a fraction and a whole number: Problem type 1  
 arith119 Introduction to fraction multiplication  
 arith053 Fraction multiplication  
 arith812 Product of a fraction and a whole number: Problem type 2  
 arith905 Determining if a quantity is increased or decreased when multiplied by a fraction  
 arith509 Modeling multiplication of proper fractions  
 arith813 Multiplication of 3 fractions  
 arith818 Word problem involving fractions and multiplication  
 arith095 Multi-step word problem involving fractions and multiplication  
 arith088 The reciprocal of a number  
 arith694 Division involving a whole number and a fraction  
 arith022 Fraction division  
 arith507 Fact families for multiplication and division of fractions  
 arith508 Modeling division of a whole number by a fraction  
 arith819 Word problem involving fractions and division  
 arith618 Addition or subtraction of fractions with the same denominator  
 arith802 Addition or subtraction of fractions with the same denominator and simplification  
 arith801 Finding the LCD of two fractions  
 arith109 Addition or subtraction of unit fractions  
 arith664 Introduction to addition or subtraction of fractions with different denominators  
 arith230 Addition or subtraction of fractions with different denominators  
 arith803 Addition and subtraction of 3 fractions with different denominators  
 arith805 Word problem involving addition or subtraction of fractions with different denominators  
 arith100 Fractional part of a circle  
 arith662 Writing a mixed number and an improper fraction for a shaded region  
 arith015 Writing an improper fraction as a mixed number  
 arith619 Writing a mixed number as an improper fraction  
 arith215 Addition or subtraction of mixed numbers with the same denominator  
 arith084 Addition of mixed numbers with the same denominator and carry  
 arith216 Subtraction of mixed numbers with the same denominator and borrowing



arith806 Addition or subtraction of mixed numbers with different denominators and no carry or borrow  
 arith808 Addition of mixed numbers with different denominators and carry  
 arith809 Subtraction of mixed numbers with different denominators and borrowing  
 arith807 Addition and subtraction of 3 mixed numbers with different denominators  
 arith810 Word problem involving addition or subtraction of mixed numbers with different denominators  
 arith815 Mixed number multiplication  
 arith816 Multiplication of a mixed number and a whole number  
 arith817 Division with a mixed number and a whole number  
 arith068 Mixed number division  
 arith820 Word problem involving multiplication or division with mixed numbers  
 arith127 Writing a decimal and a fraction for a shaded region  
 arith725 Converting a fraction with a denominator of 10 or 100 to a decimal  
 arith726 Converting a fraction with a denominator of 100 or 1000 to a decimal  
 arith113 Converting a proper fraction with a denominator of 2, 4, or 5 to a decimal  
 arith114 Converting a mixed number with a denominator of 2, 4, or 5 to a decimal  
 arith727 Converting a fraction to a terminating decimal: Basic  
 arith728 Converting a fraction to a terminating decimal: Advanced  
 arith730 Converting a fraction to a repeating decimal: Basic  
 arith731 Converting a fraction to a repeating decimal: Advanced  
 arith733 Using a calculator to convert a fraction to a rounded decimal  
 arith111 Converting a mixed number to a terminating decimal: Basic  
 arith112 Converting a mixed number to a terminating decimal: Advanced  
 arith732 Converting a fraction or mixed number to a rounded decimal  
 arith609 Ordering fractions and decimals  
 arith717 Converting a decimal to a proper fraction without simplifying: Basic  
 arith719 Converting a decimal to a proper fraction without simplifying: Advanced  
 arith718 Converting a decimal to a proper fraction in simplest form: Basic  
 arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
 arith721 Converting a decimal to a mixed number and an improper fraction without simplifying  
 arith722 Converting a decimal to a mixed number and an improper fraction in simplest form: Basic  
 arith724 Converting a decimal to a mixed number and an improper fraction in simplest form: Advanced  
 arith513 Identifying rational decimal numbers  
 arith821 Exponents and fractions  
 arith859 Order of operations with fractions: Problem type 1  
 arith860 Order of operations with fractions: Problem type 2  
 arith861 Order of operations with fractions: Problem type 3  
 arith695 Complex fraction without variables: Problem type 1  
 arith748 Addition or subtraction with a decimal and a mixed number  
 arith749 Multiplication with a decimal and a fraction  
 alge801 Additive property of equality with fractions and mixed numbers  
 alge646 Multiplicative property of equality with whole numbers: Fractional answers  
 alge820 Multiplicative property of equality with fractions

### Ratios, Proportions, and Measurement

arith823 Writing ratios using different notations  
 arith663 Writing ratios for real-world situations  
 arith450 Identifying statements that describe a ratio  
 arith824 Simplifying a ratio of whole numbers: Problem type 1  
 arith825 Simplifying a ratio of decimals  
 arith827 Finding a unit price  
 arith455 Using tables to compare ratios  
 arith828 Computing unit prices to find the better buy  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 arith064 Solving a word problem on proportions using a unit rate  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 alge281 Function tables with one-step rules  
 arith452 Finding missing values in a table of equivalent ratios  
 arith453 Using a table of equivalent ratios to find a missing quantity in a ratio  
 arith504 Writing an equation to represent a proportional relationship

alge819 Solving a proportion of the form  $x/a=b/c$ : Basic  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 arith045 Word problem with powers of ten  
 geom359 Identifying congruent shapes on a grid  
 geom360 Identifying similar or congruent shapes on a grid  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom538 Finding lengths using scale models  
 geom539 Finding a scale factor: Same units  
 geom541 Using a scale drawing to find actual area  
 geom542 Reproducing a scale drawing at a different scale  
 mstat058 Choosing a measuring tool  
 mstat059 Choosing U.S. Customary measurement units  
 mstat033 Measuring length to the nearest inch  
 mstat034 Measuring length to the nearest quarter or half inch  
 unit005 U.S. Customary unit conversion with whole number values  
 mstat035 Conversions involving measurements in feet and inches  
 mstat036 Adding measurements in feet and inches  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 unit007 U.S. Customary unit conversion with mixed number values: One-step conversion  
 unit008 U.S. Customary unit conversion with mixed number values: Two-step conversion  
 unit009 U.S. Customary area unit conversion with whole number values  
 mstat060 Choosing metric measurement units  
 mstat063 Measuring length to the nearest centimeter  
 mstat064 Measuring length to the nearest millimeter  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit012 Time unit conversion with whole number values  
 time009 Introduction to adding time  
 time006 Adding time  
 time011 Introduction to elapsed time  
 time007 Elapsed time  
 mstat062 Reading a positive temperature from a thermometer  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 arith826 Simplifying a ratio of whole numbers: Problem type 2  
 alge218 Solving a word problem involving rates and time conversion  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced

## Percents

arith836 Converting a fraction with a denominator of 100 to a percentage  
 arith837 Converting a percentage to a fraction with a denominator of 100  
 arith674 Finding the percentage of a grid that is shaded  
 arith903 Representing benchmark percentages on a grid  
 arith723 Introduction to converting a percentage to a decimal  
 arith833 Introduction to converting a decimal to a percentage  
 arith834 Converting between percentages and decimals  
 arith841 Converting a mixed number percentage to a decimal  
 arith835 Converting between percentages and decimals in a real-world situation  
 arith090 Converting a percentage to a fraction in simplest form  
 arith839 Converting a decimal percentage to a fraction  
 arith838 Converting a fraction to a percentage: Denominator of 4, 5, or 10

arith904 Finding benchmark fractions and percentages for a figure  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith843 Using a calculator to convert a fraction to a rounded percentage  
 arith842 Converting a fraction to a percentage in a real-world situation  
 arith840 Finding a percentage of a whole number  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith844 Finding a percentage of a whole number without a calculator: Advanced  
 arith862 Applying the percent equation: Problem type 1  
 arith863 Applying the percent equation: Problem type 2  
 arith845 Finding a percentage of a total amount: Real-world situations  
 arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount  
 arith857 Estimating a tip without a calculator  
 arith069 Writing a ratio as a percentage without a calculator  
 arith850 Finding the rate of a tax or commission  
 arith849 Finding the total amount given the percentage of a partial amount  
 stat805 Making a reasonable inference based on proportion statistics  
 stat804 Interpreting a circle graph or pie chart  
 arith856 Finding a percentage of a total amount in a circle graph  
 stat801 Computations from a circle graph  
 arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
 arith851 Finding the final amount given the original amount and a percentage increase or decrease  
 arith847 Finding the sale price given the original price and percent discount  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith848 Finding the total cost including tax or markup  
 arith855 Finding the original amount given the result of a percentage increase or decrease  
 arith031 Finding the original price given the sale price and percent discount  
 arith858 Finding the percentage increase or decrease: Basic  
 arith225 Finding the percentage increase or decrease: Advanced  
 arith232 Finding simple interest without a calculator  
 arith918 Comparing discounts  
 arith914 Calculations involving paying for college  
 arith916 Computing percentages for categories of a budget  
 arith921 Comparing annual salaries of different occupations  
 arith911 Calculations involving purchases with debit and credit cards  
 arith950 Comparing costs of checking accounts  
 arith951 Balancing a check register  
 arith912 Reading a credit report  
 arith913 Understanding the impact of a credit score

### Integers and Rational Numbers

alge286 Plotting integers on a number line  
 mstat038 Reading the temperature from a thermometer  
 arith691 Ordering integers  
 arith415 Using a number line to compare integers  
 arith699 Writing a signed number for a real-world situation  
 arith400 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 1  
 arith511 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 2  
 arith416 Comparing signed numbers relating to a real-world situation  
 arith402 Plotting opposite integers on a number line  
 arith403 Finding opposites of integers  
 arith071 Absolute value of a number  
 arith412 Finding all numbers with a given absolute value  
 arith605 Plotting rational numbers on a number line  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith431 Identifying a sum as a point located a given distance from another point  
 arith430 Identifying relative change when combining two quantities  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2

arith690 Integer subtraction: Problem type 3  
 arith754 Addition and subtraction with 3 integers  
 arith755 Addition and subtraction with 4 or 5 integers  
 arith440 Operations with absolute value: Problem type 1  
 arith104 Operations with absolute value: Problem type 2  
 alge694 Computing the distance between two integers on a number line  
 arith433 Computing and understanding distances between integers on a number line  
 arith701 Word problem with addition or subtraction of integers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers  
 arith952 Word problem with multiplication or division of integers  
 arith702 Exponents and integers: Problem type 1  
 arith118 Order of operations with integers  
 arith600 Order of operations with integers and exponents  
 alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 scinot024 Introduction to scientific notation with negative exponents  
 arith037 Scientific notation with negative exponent  
 scinot012 Converting between scientific notation and standard form in a real-world situation  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 arith750 Signed decimal multiplication  
 arith751 Signed decimal division  
 alge660 Identifying equivalent signed fractions  
 arith822 Signed fraction multiplication: Basic  
 arith105 Signed fraction multiplication: Advanced  
 arith814 Signed fraction division  
 arith116 Signed fraction addition or subtraction: Basic  
 arith864 Signed fraction subtraction involving double negation  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith811 Addition and subtraction of 3 fractions involving signs  
 geom525 Computing distances between decimals on the number line  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
 alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
 alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
 alge001 Identifying numbers as integers or non-integers  
 alge647 Identifying like terms  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 arith655 Introduction to properties of addition  
 alge187 Properties of addition  
 alge665 Combining like terms: Decimal coefficients  
 alge666 Combining like terms: Fractional coefficients  
 alge310 Multiplying a constant and a linear monomial  
 alge606 Distributive property: Whole number coefficients  
 alge610 Distributive property: Fractional coefficients  
 alge605 Factoring a linear binomial  
 alge612 Identifying parts in an algebraic expression  
 alge613 Identifying equivalent algebraic expressions  
 arith656 Introduction to properties of multiplication  
 alge188 Properties of real numbers  
 alge608 Using distribution and combining like terms to simplify: Univariate  
 alge667 Identifying properties used to simplify an algebraic expression

### Equations and Inequalities

alge010 Additive property of equality with integers  
 alge836 Additive property of equality with signed fractions

alge797 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge266 Additive property of equality with a negative coefficient  
 alge006 Solving a two-step equation with integers  
 alge920 Introduction to solving an equation with parentheses  
 alge837 Solving a multi-step equation given in fractional form  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge611 Introduction to solving a linear equation with a variable on each side  
 alge658 Introduction to solving a rational equation  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge671 Choosing stories that can be represented by given one-step equations  
 alge841 Translating a sentence into a multi-step equation  
 alge628 Writing an equation of the form  $Ax + B = C$  to solve a word problem  
 alge618 Comparing arithmetic and algebraic solutions to a word problem  
 alge672 Choosing stories that can be represented by given two-step equations  
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
 alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
 alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge653 Introduction to identifying solutions to an inequality  
 alge748 Writing an inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge166 Graphing a compound inequality on the number line  
 alge652 Identifying solutions to a one-step linear inequality  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge809 Multiplicative property of inequality with whole numbers  
 alge854 Multiplicative property of inequality with integers  
 alge636 Solving a two-step linear inequality with whole numbers  
 alge846 Translating a sentence into a multi-step inequality  
 alge621 Solving a word problem using a one-step linear inequality  
 alge623 Solving a word problem using a two-step linear inequality

## Graphs and Functions

alge278 Reading a point in quadrant 1  
 alge279 Plotting a point in quadrant 1  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge692 Plotting a point in quadrant 1: Mixed number coordinates  
 alge693 Plotting a point in the coordinate plane: Mixed number coordinates  
 arith404 Naming the quadrant or axis of a point given its graph  
 arith405 Naming the quadrant or axis of a point given its coordinates  
 arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
 alge695 Finding distances between points that share a common coordinate given the graph  
 alge696 Finding distances between points that share a common coordinate given their coordinates  
 arith454 Making a table and plotting points given a unit rate  
 alge283 Graphing whole number functions  
 alge282 Function tables with two-step rules  
 alge850 Table for a linear equation  
 fun001 Table for a linear function  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 alge280 Graphing a line in quadrant 1

alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
 mstat007 Interpreting a line graph  
 alge575 Finding slope given the graph of a line in quadrant 1 that models a real-world situation  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines  
 alge630 Finding outputs of a one-step function that models a real-world situation: Two variable equation  
 alge632 Finding outputs of a two-step function with decimals that models a real-world situation: Two variable equation  
 alge633 Finding inputs and outputs of a two-step function that models a real-world situation: Two variable equation  
 alge655 Writing and evaluating a function that models a real-world situation: Basic  
 alge897 Writing and evaluating a function that models a real-world situation: Advanced  
 alge654 Graphing ordered pairs and writing an equation from a table of values in context  
 alge656 Writing an equation and drawing its graph to model a real-world situation: Basic  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge818 Finding the initial amount and rate of change given a graph of a linear function  
 alge670 Identifying independent and dependent quantities from tables and graphs  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 mstat018 Choosing a graph to fit a narrative: Basic  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge263 Interpreting the graphs of two functions  
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge732 Finding patterns in shapes  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio

### Angles, Lines, and Polygons

geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom551 Finding the complement or supplement of an angle given a figure  
 geom305 Identifying supplementary and vertical angles  
 geom553 Finding angle measures given two intersecting lines  
 geom304 Identifying corresponding and alternate angles  
 geom349 Naming segments, rays, and lines  
 geom358 Identifying parallel and perpendicular lines  
 geom554 Finding angle measures given two parallel lines cut by a transversal  
 geom154 Constructing the perpendicular bisector of a line segment  
 geom158 Constructing an angle bisector  
 geom159 Constructing congruent angles  
 geom150 Constructing a pair of perpendicular lines  
 geom157 Constructing a pair of parallel lines  
 geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom908 Finding an angle measure for a triangle with an extended side

geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom519 Identifying and naming congruent parts of congruent triangles  
 geom543 Drawing a circle with a given radius or diameter  
 geom544 Creating triangles from given side lengths: Problem type 1  
 geom634 Creating triangles from given side lengths: Problem type 2  
 geom844 Using triangle inequality to determine if side lengths form a triangle  
 geom548 Determining if a triangle is possible based on given angle measures  
 geom546 Drawing triangles with given conditions: Angle measures  
 geom547 Drawing triangles with given conditions: Side lengths and angle measures  
 geom545 Drawing triangles with given side lengths using a compass  
 geom361 Naming polygons  
 mstat042 Interpreting a Venn diagram of 2 sets  
 geom536 Drawing and identifying a polygon in the coordinate plane  
 geom867 Identifying parallelograms, rectangles, and squares  
 geom310 Properties of quadrilaterals  
 geom532 Classifying parallelograms  
 geom818 Finding the coordinates of a point to make a parallelogram  
 geom870 Sum of the angle measures of a quadrilateral  
 geom852 The sum of interior angle measures in a convex polygon  
 arith016 Square root of a perfect square  
 alge413 Finding all square roots of a number  
 arith763 Using a calculator to approximate a square root  
 arith602 Estimating a square root  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem  
 geom603 Identifying side lengths that give right triangles

### Transformations

geom357 Identifying transformations  
 geom355 Introduction to translations  
 geom596 Translating a point and giving its coordinates: One step  
 geom909 Translating a point and giving its coordinates: Two steps  
 geom597 Properties of translated figures  
 geom598 Determining if figures are related by a translation  
 geom330 Translating a polygon  
 geom356 Introduction to reflections  
 arith408 Reflecting a point across an axis  
 geom533 Reflecting a point across both coordinate axes  
 geom590 Reflecting a point across an axis and giving its coordinates  
 arith407 Finding the coordinates of a point reflected across an axis  
 geom560 Finding the coordinates of a point reflected across both axes  
 geom534 Reflecting a polygon across the x-axis or y-axis  
 geom591 Properties of reflected figures  
 geom592 Determining if figures are related by a reflection  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom334 Drawing lines of symmetry  
 geom602 Finding the coordinates of a point reflected across an axis and translated  
 geom815 Finding an angle of rotation  
 geom624 Identifying rotational symmetry and angles of rotation  
 geom593 Rotating a point and giving its coordinates  
 geom594 Properties of rotated figures  
 geom595 Determining if figures are related by a rotation  
 geom335 Rotating a figure about the origin  
 geom580 Determining if figures are congruent and related by a transformation  
 geom606 Dilating a segment and giving the coordinates of its endpoints  
 geom607 The effect of dilation on side length  
 geom608 Determining if figures are related by a dilation



geom636 The effect of dilation on area

### Perimeters, Areas, and Volumes

geom618 Perimeter of a polygon involving mixed numbers and fractions  
 geom078 Sides of polygons having the same perimeter  
 geom221 Finding the missing length in a figure  
 geom353 Perimeter of a piecewise rectangular figure  
 alge615 Writing algebraic expressions for the perimeter of a figure  
 geom620 Area of a rectangle involving fractions  
 geom619 Area of a rectangle involving mixed numbers and fractions  
 geom350 Distinguishing between the area and perimeter of a rectangle  
 geom351 Areas of rectangles with the same perimeter  
 geom869 Estimates and exact answers  
 alge616 Writing algebraic expressions for the area of a figure  
 geom410 Word problem involving the area of a square or a rectangle  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom340 Area of a piecewise rectangular figure  
 geom562 Area between two rectangles  
 geom142 Word problem involving the area between two rectangles  
 geom501 Finding the area of a right triangle on a grid  
 geom509 Finding the area of a right triangle or its corresponding rectangle  
 geom801 Area of a triangle  
 geom517 Finding the area of a trapezoid on a grid by using triangles and rectangles  
 geom344 Area involving rectangles and triangles  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom537 Finding the perimeter or area of a rectangle in the coordinate plane  
 geom832 Area of quadrilaterals in the coordinate plane  
 geom347 Introduction to a circle: Diameter, radius, and chord  
 geom016 Circumference of a circle  
 geom218 Finding the radius or the diameter of a circle given its circumference  
 geom838 Circumference ratios  
 geom301 Perimeter involving rectangles and circles  
 geom026 Area of a circle  
 geom802 Circumference and area of a circle  
 geom570 Distinguishing between the area and circumference of a circle  
 geom302 Area involving rectangles and circles  
 geom563 Area between two concentric circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom868 Classifying solids  
 geom348 Vertices, edges, and faces of a solid  
 geom830 Counting the cubes in a solid made of cubes  
 geom816 Side views of a solid made of cubes  
 geom550 Identifying horizontal and vertical cross sections of solids  
 geom311 Volume of a rectangular prism  
 geom354 Volume of a rectangular prism made of unit cubes  
 geom518 Volume of a solid made of cubes with unit fraction edge lengths  
 geom535 Volume of a rectangular prism with fractional edge lengths  
 alge617 Writing equivalent expressions for the volume of a rectangular prism  
 geom571 Word problem involving the volume of a rectangular prism  
 geom558 Word problem involving the rate of filling or emptying a rectangular prism  
 geom505 Volume of a piecewise rectangular prism  
 geom090 Volume of a triangular prism  
 geom572 Word problem involving the volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom637 Relating the volumes of a rectangular prism and a rectangular pyramid  
 geom638 Relating the volumes of a triangular prism and a triangular pyramid  
 geom035 Volume of a cylinder

geom573 Word problem involving the volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom622 Volume of a cone  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom639 Relating the volumes of a cylinder and a cone  
 geom575 Word problem involving the volume of a cone  
 geom219 Nets of solids  
 geom031 Surface area of a cube or a rectangular prism  
 geom632 Surface area of a rectangular prism made of unit cubes  
 geom555 Distinguishing between surface area and volume  
 geom556 Using a net to find the surface area of a rectangular prism  
 geom576 Word problem involving the surface area of a rectangular prism  
 geom345 Surface area of a piecewise rectangular prism made of unit cubes  
 geom091 Surface area of a triangular prism  
 geom557 Using a net to find the surface area of a triangular prism  
 geom621 Surface area of a cylinder  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom578 Word problem involving the surface area of a cylinder

### Data Analysis and Probability

mstat088 Identifying statistical questions  
 mstat080 Choosing an appropriate method for gathering data: Problem type 1  
 mstat081 Choosing an appropriate method for gathering data: Problem type 2  
 mstat056 Interpreting a tally table  
 mstat097 Constructing a two-way frequency table: Basic  
 mstat098 Constructing a two-way frequency table: Advanced  
 mstat049 Computing a percentage from a table of values  
 mstat087 Making an inference using a two-way frequency table  
 stat020 Calculating relative frequencies in a contingency table  
 mstat025 Finding if a question can be answered by the data  
 mstat037 Constructing a line plot  
 mstat005 Constructing a bar graph for non-numerical data  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat057 Interpreting a pictograph table  
 mstat031 Interpreting a stem-and-leaf plot  
 geom814 Angle measure in a circle graph  
 mstat094 Constructing a scatter plot  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat092 Finding the mode and range from a line plot  
 mstat001 Mean of a data set  
 mstat077 Using a model to find the mean  
 mstat075 Understanding the mean graphically: Two bars  
 mstat076 Understanding the mean graphically: Four or more bars  
 mstat091 Finding the mean of a symmetric distribution  
 mstat079 Finding sample size and comparing samples for estimating the mean  
 mstat089 Computations involving the mean, sample size, and sum of a data set  
 stat803 Finding the value for a new score that will yield a given mean  
 stat802 Rejecting unreasonable claims based on average statistics  
 mstat066 Weighted mean  
 mstat028 Mean and median of a data set  
 mstat029 How changing a value affects the mean and median  
 mstat095 Finding outliers in a data set  
 mstat053 Choosing the best measure to describe data  
 mstat078 Comparing measures of center and variation

mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat072 Five-number summary and interquartile range  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 mstat082 Computing mean absolute deviation from a list of numerical values  
 mstat083 Computing mean absolute deviation from a bar graph  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 mstat099 Determining a sample space and outcomes for a simple event  
 mstat100 Determining a sample space and outcomes for a compound event  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 mstat054 Classifying likelihood  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat039 Understanding likelihood  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events

## B.93 CC Math 7 Tutorial Lab (Intervention)

### Whole Numbers

arith124 Whole number place value: Problem type 1  
 arith125 Whole number place value: Problem type 2  
 arith066 Expanded form  
 arith643 Expanded form with zeros  
 arith028 Numeral translation: Problem type 1  
 arith060 Numeral translation: Problem type 2  
 arith633 One-digit addition with carry  
 arith634 Addition of 3 or 4 one-digit numbers  
 arith001 Addition without carry  
 arith635 Adding a 2-digit number and a 1-digit number with carry  
 arith050 Addition with carry  
 arith630 Addition with carry to the hundreds place  
 arith012 Addition of large numbers  
 arith636 Subtracting a 1-digit number from a 2-digit number  
 arith007 Subtraction without borrowing  
 arith006 Subtraction with borrowing  
 arith682 Subtraction with multiple regrouping steps  
 arith637 Subtraction and regrouping with zeros  
 arith653 Fact families for addition and subtraction  
 arith613 Word problem with addition or subtraction of whole numbers  
 mstat061 Describing an increasing or decreasing pattern from a table of values  
 arith126 Multiplication as repeated addition  
 arith008 One-digit multiplication  
 arith639 Using multiplication to find the number of squares  
 arith679 Multiplication by 10, 100, and 1000  
 arith003 Multiplication without carry

arith004 Multiplication with carry  
arith632 Multiplication with trailing zeros: Problem type 1  
arith615 Introduction to multiplication of large numbers  
arith675 Understanding multiplication of a one-digit number with a larger number  
arith638 Multiplication with trailing zeros: Problem type 2  
arith014 Multiplication of large numbers  
arith641 Multiples: Problem type 1  
arith642 Multiples: Problem type 2  
arith075 Division facts  
arith654 Fact families for multiplication and division  
arith614 Word problem with multiplication or division of whole numbers  
arith130 Word problem with multiplication and addition or subtraction of whole numbers  
arith451 Word problem on unit rates associated with ratios of whole numbers: Whole number answers  
arith243 Division of whole numbers given in fractional form  
arith711 Division involving zero  
arith052 Division without carry  
arith005 Division with carry  
arith901 Whole number division: 2-digit by 2-digit, no remainder  
arith902 Whole number division: 3-digit by 2-digit, no remainder  
arith680 Division with trailing zeros: Problem type 1  
arith649 Division with trailing zeros: Problem type 2  
arith616 Quotient and remainder: Problem type 1  
arith644 Word problem on quotient and remainder  
arith617 Quotient and remainder: Problem type 2  
arith631 Quotient and remainder: Problem type 3  
arith650 Division involving quotients with intermediate zeros  
arith023 Word problem with division of whole numbers and rounding  
arith651 Introduction to inequalities  
arith652 Comparing a numerical expression with a number  
arith077 Ordering large numbers  
arith078 Rounding to tens or hundreds  
arith123 Rounding to hundreds or thousands  
arith061 Rounding to thousands, ten thousands, or hundred thousands  
arith101 Estimating a sum of whole numbers  
arith102 Estimating a difference of whole numbers  
arith677 Estimating a product  
arith678 Estimating a quotient  
arith692 Writing expressions using exponents  
arith233 Introduction to exponents  
arith683 Power of 10: Positive exponent  
arith016 Square root of a perfect square  
arith645 Introduction to parentheses  
arith865 Comparing numerical expressions with parentheses  
arith681 Introduction to order of operations  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
arith646 Even and odd numbers  
arith647 Divisibility rules for 2, 5, and 10  
arith648 Divisibility rules for 3 and 9  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith516 Greatest common factor of 3 numbers  
arith409 Introduction to the distributive property  
arith657 Understanding the distributive property  
arith410 Introduction to factoring with numbers  
arith411 Factoring a sum or difference of whole numbers  
arith070 Least common multiple of 2 numbers  
arith804 Least common multiple of 3 numbers

arith418 Word problem involving the least common multiple of 2 numbers  
 arith240 Word problem with common multiples  
 alge284 Evaluating an algebraic expression: Whole number addition or subtraction  
 alge683 Evaluating an algebraic expression: Whole number multiplication or division  
 alge285 Evaluating an algebraic expression: Whole numbers with two operations  
 alge649 Evaluating a formula  
 alge648 Evaluating an algebraic expression: Whole numbers with one operation and an exponent  
 alge832 Evaluating an algebraic expression: Whole number operations and exponents  
 alge733 Writing a one-step expression for a real-world situation  
 alge831 Translating a phrase into a one-step expression  
 alge291 Translating a phrase into a two-step expression  
 alge650 Identifying solutions to a one-step linear equation: Problem type 1  
 alge651 Identifying solutions to a one-step linear equation: Problem type 2  
 alge009 Additive property of equality with whole numbers  
 alge813 Introduction to solving an equation with multiplication or division  
 alge008 Multiplicative property of equality with whole numbers  
 alge016 Translating a sentence into a one-step equation  
 geom339 Perimeter of a polygon  
 geom300 Perimeter of a square or a rectangle  
 geom019 Area of a square or a rectangle  
 geom866 Perimeter and area on a grid

## Decimals

arith110 Decimal place value: Tenths and hundredths  
 arith220 Decimal place value: Hundreds to ten thousandths  
 arith714 Writing a decimal number less than 1 given its name  
 arith715 Writing a decimal number greater than 1 given its name  
 arith716 Writing a decimal number given its name: Advanced  
 arith829 Reading decimal position on a number line: Tenths  
 arith830 Reading decimal position on a number line: Hundredths  
 arith831 Understanding decimal position on a number line using zoom: Hundredths  
 arith832 Understanding decimal position on a number line using zoom: Thousandths  
 arith129 Introduction to ordering decimals  
 arith608 Ordering decimals  
 arith221 Rounding decimals  
 arith624 Addition of aligned decimals  
 arith013 Decimal addition with 3 numbers  
 arith734 Subtraction of aligned decimals  
 arith735 Decimal subtraction: Basic  
 arith736 Decimal subtraction: Advanced  
 arith737 Decimal addition and subtraction with 3 or more numbers  
 arith131 Estimating a decimal sum or difference  
 arith668 Addition with money  
 arith669 Subtraction with money  
 arith132 Word problem with addition or subtraction of 2 decimals  
 arith133 Word problem with addition of 3 or 4 decimals and whole numbers  
 arith134 Word problem with subtraction of a whole number and a decimal: Regrouping with zeros  
 arith739 Introduction to decimal multiplication  
 arith017 Multiplication of a decimal by a whole number  
 arith055 Decimal multiplication: Problem type 1  
 arith046 Decimal multiplication: Problem type 2  
 arith082 Multiplication of a decimal by a power of ten  
 arith738 Multiplication of a decimal by a power of 0.1  
 arith740 Multiplication of decimals that have a product less than 0.1  
 arith752 Estimating a product of decimals  
 arith135 Word problem with multiplication of a decimal and a whole number  
 arith137 Word problem with multiplication of two decimals  
 arith628 Word problem with multiple decimal operations: Problem type 1  
 arith744 Whole number division with decimal answers

arith081 Division of a decimal by a whole number  
arith743 Division of a decimal by a 1-digit decimal  
arith019 Division of a decimal by a 2-digit decimal  
arith083 Division of a decimal by a power of ten  
arith742 Division of a decimal by a power of 0.1  
arith745 Decimal division with rounding  
arith136 Word problem with division of a decimal and a whole number  
arith138 Word problem with division of two decimals  
arith629 Word problem with multiple decimal operations: Problem type 2  
arith103 Average of two numbers  
arith753 Squaring decimal bases: Products greater than 0.1  
arith741 Exponents and decimals: Products less than 0.1  
arith720 Order of operations with decimals: Problem type 1  
arith746 Order of operations with decimals: Problem type 2  
arith747 Order of operations with decimals: Problem type 3  
scinot023 Introduction to scientific notation with positive exponents  
arith036 Scientific notation with positive exponent

### Fractions

arith623 Introduction to fractions  
arith665 Understanding equivalent fractions  
arith212 Equivalent fractions  
arith666 Introduction to simplifying a fraction  
arith067 Simplifying a fraction  
arith687 Fractional position on a number line  
arith667 Plotting fractions on a number line  
arith044 Ordering fractions with the same denominator  
arith091 Ordering fractions with the same numerator  
arith092 Using a common denominator to order fractions  
arith079 Product of a unit fraction and a whole number  
arith086 Product of a fraction and a whole number: Problem type 1  
arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith812 Product of a fraction and a whole number: Problem type 2  
arith905 Determining if a quantity is increased or decreased when multiplied by a fraction  
arith509 Modeling multiplication of proper fractions  
arith813 Multiplication of 3 fractions  
arith818 Word problem involving fractions and multiplication  
arith095 Multi-step word problem involving fractions and multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith507 Fact families for multiplication and division of fractions  
arith508 Modeling division of a whole number by a fraction  
arith819 Word problem involving fractions and division  
arith618 Addition or subtraction of fractions with the same denominator  
arith802 Addition or subtraction of fractions with the same denominator and simplification  
arith801 Finding the LCD of two fractions  
arith109 Addition or subtraction of unit fractions  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
arith803 Addition and subtraction of 3 fractions with different denominators  
arith805 Word problem involving addition or subtraction of fractions with different denominators  
arith100 Fractional part of a circle  
arith662 Writing a mixed number and an improper fraction for a shaded region  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith215 Addition or subtraction of mixed numbers with the same denominator  
arith084 Addition of mixed numbers with the same denominator and carry

arith216 Subtraction of mixed numbers with the same denominator and borrowing  
 arith806 Addition or subtraction of mixed numbers with different denominators and no carry or borrow  
 arith808 Addition of mixed numbers with different denominators and carry  
 arith809 Subtraction of mixed numbers with different denominators and borrowing  
 arith807 Addition and subtraction of 3 mixed numbers with different denominators  
 arith810 Word problem involving addition or subtraction of mixed numbers with different denominators  
 arith815 Mixed number multiplication  
 arith816 Multiplication of a mixed number and a whole number  
 arith817 Division with a mixed number and a whole number  
 arith068 Mixed number division  
 arith820 Word problem involving multiplication or division with mixed numbers  
 arith127 Writing a decimal and a fraction for a shaded region  
 arith725 Converting a fraction with a denominator of 10 or 100 to a decimal  
 arith726 Converting a fraction with a denominator of 100 or 1000 to a decimal  
 arith113 Converting a proper fraction with a denominator of 2, 4, or 5 to a decimal  
 arith114 Converting a mixed number with a denominator of 2, 4, or 5 to a decimal  
 arith727 Converting a fraction to a terminating decimal: Basic  
 arith728 Converting a fraction to a terminating decimal: Advanced  
 arith730 Converting a fraction to a repeating decimal: Basic  
 arith731 Converting a fraction to a repeating decimal: Advanced  
 arith733 Using a calculator to convert a fraction to a rounded decimal  
 arith111 Converting a mixed number to a terminating decimal: Basic  
 arith112 Converting a mixed number to a terminating decimal: Advanced  
 arith732 Converting a fraction or mixed number to a rounded decimal  
 arith609 Ordering fractions and decimals  
 arith717 Converting a decimal to a proper fraction without simplifying: Basic  
 arith719 Converting a decimal to a proper fraction without simplifying: Advanced  
 arith718 Converting a decimal to a proper fraction in simplest form: Basic  
 arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
 arith721 Converting a decimal to a mixed number and an improper fraction without simplifying  
 arith722 Converting a decimal to a mixed number and an improper fraction in simplest form: Basic  
 arith724 Converting a decimal to a mixed number and an improper fraction in simplest form: Advanced  
 arith513 Identifying rational decimal numbers  
 arith821 Exponents and fractions  
 arith859 Order of operations with fractions: Problem type 1  
 arith860 Order of operations with fractions: Problem type 2  
 arith861 Order of operations with fractions: Problem type 3  
 arith695 Complex fraction without variables: Problem type 1  
 arith748 Addition or subtraction with a decimal and a mixed number  
 arith749 Multiplication with a decimal and a fraction

### Ratios, Proportions, and Measurement

arith823 Writing ratios using different notations  
 arith663 Writing ratios for real-world situations  
 arith450 Identifying statements that describe a ratio  
 arith824 Simplifying a ratio of whole numbers: Problem type 1  
 arith825 Simplifying a ratio of decimals  
 arith827 Finding a unit price  
 arith455 Using tables to compare ratios  
 arith828 Computing unit prices to find the better buy  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 arith064 Solving a word problem on proportions using a unit rate  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 alge281 Function tables with one-step rules  
 arith452 Finding missing values in a table of equivalent ratios  
 arith453 Using a table of equivalent ratios to find a missing quantity in a ratio  
 arith504 Writing an equation to represent a proportional relationship  
 alge819 Solving a proportion of the form  $x/a=b/c$ : Basic  
 alge272 Solving a proportion of the form  $x/a = b/c$



arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 arith045 Word problem with powers of ten  
 geom359 Identifying congruent shapes on a grid  
 geom360 Identifying similar or congruent shapes on a grid  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom538 Finding lengths using scale models  
 geom539 Finding a scale factor: Same units  
 geom541 Using a scale drawing to find actual area  
 geom542 Reproducing a scale drawing at a different scale  
 mstat058 Choosing a measuring tool  
 mstat059 Choosing U.S. Customary measurement units  
 mstat033 Measuring length to the nearest inch  
 mstat034 Measuring length to the nearest quarter or half inch  
 unit005 U.S. Customary unit conversion with whole number values  
 mstat035 Conversions involving measurements in feet and inches  
 mstat036 Adding measurements in feet and inches  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 unit007 U.S. Customary unit conversion with mixed number values: One-step conversion  
 unit008 U.S. Customary unit conversion with mixed number values: Two-step conversion  
 unit009 U.S. Customary area unit conversion with whole number values  
 mstat060 Choosing metric measurement units  
 mstat063 Measuring length to the nearest centimeter  
 mstat064 Measuring length to the nearest millimeter  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit012 Time unit conversion with whole number values  
 time009 Introduction to adding time  
 time006 Adding time  
 time011 Introduction to elapsed time  
 time007 Elapsed time  
 mstat062 Reading a positive temperature from a thermometer  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 arith826 Simplifying a ratio of whole numbers: Problem type 2  
 alge218 Solving a word problem involving rates and time conversion  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced

### Percents

arith836 Converting a fraction with a denominator of 100 to a percentage  
 arith837 Converting a percentage to a fraction with a denominator of 100  
 arith674 Finding the percentage of a grid that is shaded  
 arith903 Representing benchmark percentages on a grid  
 arith723 Introduction to converting a percentage to a decimal  
 arith833 Introduction to converting a decimal to a percentage  
 arith834 Converting between percentages and decimals  
 arith841 Converting a mixed number percentage to a decimal  
 arith835 Converting between percentages and decimals in a real-world situation  
 arith090 Converting a percentage to a fraction in simplest form  
 arith839 Converting a decimal percentage to a fraction  
 arith838 Converting a fraction to a percentage: Denominator of 4, 5, or 10  
 arith904 Finding benchmark fractions and percentages for a figure  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50

arith843 Using a calculator to convert a fraction to a rounded percentage  
 arith842 Converting a fraction to a percentage in a real-world situation  
 arith840 Finding a percentage of a whole number  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith844 Finding a percentage of a whole number without a calculator: Advanced  
 arith862 Applying the percent equation: Problem type 1  
 arith863 Applying the percent equation: Problem type 2  
 arith845 Finding a percentage of a total amount: Real-world situations  
 arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount  
 arith857 Estimating a tip without a calculator  
 arith069 Writing a ratio as a percentage without a calculator  
 arith850 Finding the rate of a tax or commission  
 arith849 Finding the total amount given the percentage of a partial amount  
 stat805 Making a reasonable inference based on proportion statistics  
 stat804 Interpreting a circle graph or pie chart  
 arith856 Finding a percentage of a total amount in a circle graph  
 stat801 Computations from a circle graph  
 arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
 arith851 Finding the final amount given the original amount and a percentage increase or decrease  
 arith847 Finding the sale price given the original price and percent discount  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith848 Finding the total cost including tax or markup  
 arith855 Finding the original amount given the result of a percentage increase or decrease  
 arith031 Finding the original price given the sale price and percent discount  
 arith858 Finding the percentage increase or decrease: Basic  
 arith225 Finding the percentage increase or decrease: Advanced  
 arith232 Finding simple interest without a calculator  
 arith918 Comparing discounts  
 arith914 Calculations involving paying for college  
 arith916 Computing percentages for categories of a budget  
 arith921 Comparing annual salaries of different occupations  
 arith911 Calculations involving purchases with debit and credit cards  
 arith950 Comparing costs of checking accounts  
 arith951 Balancing a check register  
 arith912 Reading a credit report  
 arith913 Understanding the impact of a credit score

### Integers and Rational Numbers

alge286 Plotting integers on a number line  
 mstat038 Reading the temperature from a thermometer  
 arith691 Ordering integers  
 arith415 Using a number line to compare integers  
 arith699 Writing a signed number for a real-world situation  
 arith400 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 1  
 arith511 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 2  
 arith416 Comparing signed numbers relating to a real-world situation  
 arith402 Plotting opposite integers on a number line  
 arith403 Finding opposites of integers  
 arith071 Absolute value of a number  
 arith412 Finding all numbers with a given absolute value  
 arith605 Plotting rational numbers on a number line  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith431 Identifying a sum as a point located a given distance from another point  
 arith430 Identifying relative change when combining two quantities  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith754 Addition and subtraction with 3 integers

arith755 Addition and subtraction with 4 or 5 integers  
 arith440 Operations with absolute value: Problem type 1  
 arith104 Operations with absolute value: Problem type 2  
 alge694 Computing the distance between two integers on a number line  
 arith433 Computing and understanding distances between integers on a number line  
 arith701 Word problem with addition or subtraction of integers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers  
 arith952 Word problem with multiplication or division of integers  
 arith702 Exponents and integers: Problem type 1  
 arith118 Order of operations with integers  
 arith600 Order of operations with integers and exponents  
 alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 scinot024 Introduction to scientific notation with negative exponents  
 arith037 Scientific notation with negative exponent  
 scinot012 Converting between scientific notation and standard form in a real-world situation  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers  
 arith750 Signed decimal multiplication  
 arith751 Signed decimal division  
 alge660 Identifying equivalent signed fractions  
 arith822 Signed fraction multiplication: Basic  
 arith105 Signed fraction multiplication: Advanced  
 arith814 Signed fraction division  
 arith116 Signed fraction addition or subtraction: Basic  
 arith864 Signed fraction subtraction involving double negation  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith811 Addition and subtraction of 3 fractions involving signs  
 geom525 Computing distances between decimals on the number line  
 alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
 alge004 Evaluating a quadratic expression: Integers  
 alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
 alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
 alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
 alge001 Identifying numbers as integers or non-integers  
 alge647 Identifying like terms  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 arith655 Introduction to properties of addition  
 alge187 Properties of addition  
 alge665 Combining like terms: Decimal coefficients  
 alge666 Combining like terms: Fractional coefficients  
 alge310 Multiplying a constant and a linear monomial  
 alge606 Distributive property: Whole number coefficients  
 alge610 Distributive property: Fractional coefficients  
 alge605 Factoring a linear binomial  
 alge612 Identifying parts in an algebraic expression  
 alge613 Identifying equivalent algebraic expressions  
 arith656 Introduction to properties of multiplication  
 alge188 Properties of real numbers  
 alge608 Using distribution and combining like terms to simplify: Univariate  
 alge667 Identifying properties used to simplify an algebraic expression

### Equations and Inequalities

alge800 Additive property of equality with decimals  
 alge801 Additive property of equality with fractions and mixed numbers  
 alge010 Additive property of equality with integers  
 alge836 Additive property of equality with signed fractions

alge825 Multiplicative property of equality with decimals  
 alge646 Multiplicative property of equality with whole numbers: Fractional answers  
 alge820 Multiplicative property of equality with fractions  
 alge797 Multiplicative property of equality with integers  
 alge012 Multiplicative property of equality with signed fractions  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge803 Using two steps to solve an equation with whole numbers  
 alge266 Additive property of equality with a negative coefficient  
 alge006 Solving a two-step equation with integers  
 alge920 Introduction to solving an equation with parentheses  
 alge837 Solving a multi-step equation given in fractional form  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge611 Introduction to solving a linear equation with a variable on each side  
 alge658 Introduction to solving a rational equation  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge671 Choosing stories that can be represented by given one-step equations  
 alge841 Translating a sentence into a multi-step equation  
 alge628 Writing an equation of the form  $Ax + B = C$  to solve a word problem  
 alge618 Comparing arithmetic and algebraic solutions to a word problem  
 alge672 Choosing stories that can be represented by given two-step equations  
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
 alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
 alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge653 Introduction to identifying solutions to an inequality  
 alge748 Writing an inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge166 Graphing a compound inequality on the number line  
 alge652 Identifying solutions to a one-step linear inequality  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge809 Multiplicative property of inequality with whole numbers  
 alge854 Multiplicative property of inequality with integers  
 alge636 Solving a two-step linear inequality with whole numbers  
 alge846 Translating a sentence into a multi-step inequality  
 alge621 Solving a word problem using a one-step linear inequality  
 alge623 Solving a word problem using a two-step linear inequality

### Graphs and Functions

alge278 Reading a point in quadrant 1  
 alge279 Plotting a point in quadrant 1  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge692 Plotting a point in quadrant 1: Mixed number coordinates  
 alge693 Plotting a point in the coordinate plane: Mixed number coordinates  
 arith404 Naming the quadrant or axis of a point given its graph  
 arith405 Naming the quadrant or axis of a point given its coordinates  
 arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
 alge695 Finding distances between points that share a common coordinate given the graph  
 alge696 Finding distances between points that share a common coordinate given their coordinates  
 arith454 Making a table and plotting points given a unit rate  
 alge283 Graphing whole number functions  
 alge282 Function tables with two-step rules  
 alge850 Table for a linear equation  
 fun001 Table for a linear function  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules

fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 alge280 Graphing a line in quadrant 1  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
 mstat007 Interpreting a line graph  
 alge575 Finding slope given the graph of a line in quadrant 1 that models a real-world situation  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines  
 alge630 Finding outputs of a one-step function that models a real-world situation: Two variable equation  
 alge632 Finding outputs of a two-step function with decimals that models a real-world situation: Two variable equation  
 alge633 Finding inputs and outputs of a two-step function that models a real-world situation: Two variable equation  
 alge655 Writing and evaluating a function that models a real-world situation: Basic  
 alge897 Writing and evaluating a function that models a real-world situation: Advanced  
 alge654 Graphing ordered pairs and writing an equation from a table of values in context  
 alge656 Writing an equation and drawing its graph to model a real-world situation: Basic  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge818 Finding the initial amount and rate of change given a graph of a linear function  
 alge670 Identifying independent and dependent quantities from tables and graphs  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 mstat018 Choosing a graph to fit a narrative: Basic  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge263 Interpreting the graphs of two functions  
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge732 Finding patterns in shapes  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio

### Angles, Lines, and Polygons

geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom551 Finding the complement or supplement of an angle given a figure  
 geom305 Identifying supplementary and vertical angles  
 geom553 Finding angle measures given two intersecting lines  
 geom304 Identifying corresponding and alternate angles  
 geom349 Naming segments, rays, and lines  
 geom358 Identifying parallel and perpendicular lines  
 geom554 Finding angle measures given two parallel lines cut by a transversal  
 geom154 Constructing the perpendicular bisector of a line segment  
 geom158 Constructing an angle bisector  
 geom159 Constructing congruent angles  
 geom150 Constructing a pair of perpendicular lines  
 geom157 Constructing a pair of parallel lines

geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom519 Identifying and naming congruent parts of congruent triangles  
 geom543 Drawing a circle with a given radius or diameter  
 geom544 Creating triangles from given side lengths: Problem type 1  
 geom634 Creating triangles from given side lengths: Problem type 2  
 geom844 Using triangle inequality to determine if side lengths form a triangle  
 geom548 Determining if a triangle is possible based on given angle measures  
 geom546 Drawing triangles with given conditions: Angle measures  
 geom547 Drawing triangles with given conditions: Side lengths and angle measures  
 geom545 Drawing triangles with given side lengths using a compass  
 geom361 Naming polygons  
 mstat042 Interpreting a Venn diagram of 2 sets  
 geom536 Drawing and identifying a polygon in the coordinate plane  
 geom867 Identifying parallelograms, rectangles, and squares  
 geom310 Properties of quadrilaterals  
 geom532 Classifying parallelograms  
 geom818 Finding the coordinates of a point to make a parallelogram  
 geom870 Sum of the angle measures of a quadrilateral  
 geom852 The sum of interior angle measures in a convex polygon  
 alge413 Finding all square roots of a number  
 arith763 Using a calculator to approximate a square root  
 arith602 Estimating a square root  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem  
 geom603 Identifying side lengths that give right triangles

### Transformations

geom357 Identifying transformations  
 geom355 Introduction to translations  
 geom596 Translating a point and giving its coordinates: One step  
 geom909 Translating a point and giving its coordinates: Two steps  
 geom597 Properties of translated figures  
 geom598 Determining if figures are related by a translation  
 geom330 Translating a polygon  
 geom356 Introduction to reflections  
 arith408 Reflecting a point across an axis  
 geom533 Reflecting a point across both coordinate axes  
 geom590 Reflecting a point across an axis and giving its coordinates  
 arith407 Finding the coordinates of a point reflected across an axis  
 geom560 Finding the coordinates of a point reflected across both axes  
 geom534 Reflecting a polygon across the x-axis or y-axis  
 geom591 Properties of reflected figures  
 geom592 Determining if figures are related by a reflection  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom334 Drawing lines of symmetry  
 geom602 Finding the coordinates of a point reflected across an axis and translated  
 geom815 Finding an angle of rotation  
 geom624 Identifying rotational symmetry and angles of rotation  
 geom593 Rotating a point and giving its coordinates  
 geom594 Properties of rotated figures  
 geom595 Determining if figures are related by a rotation  
 geom335 Rotating a figure about the origin  
 geom580 Determining if figures are congruent and related by a transformation

geom606 Dilating a segment and giving the coordinates of its endpoints  
geom607 The effect of dilation on side length  
geom608 Determining if figures are related by a dilation  
geom636 The effect of dilation on area

### Perimeters, Areas, and Volumes

geom618 Perimeter of a polygon involving mixed numbers and fractions  
geom078 Sides of polygons having the same perimeter  
geom221 Finding the missing length in a figure  
geom353 Perimeter of a piecewise rectangular figure  
alge615 Writing algebraic expressions for the perimeter of a figure  
geom620 Area of a rectangle involving fractions  
geom619 Area of a rectangle involving mixed numbers and fractions  
geom350 Distinguishing between the area and perimeter of a rectangle  
geom351 Areas of rectangles with the same perimeter  
geom869 Estimates and exact answers  
alge616 Writing algebraic expressions for the area of a figure  
geom410 Word problem involving the area of a square or a rectangle  
geom217 Finding the side length of a rectangle given its perimeter or area  
geom340 Area of a piecewise rectangular figure  
geom562 Area between two rectangles  
geom142 Word problem involving the area between two rectangles  
geom501 Finding the area of a right triangle on a grid  
geom509 Finding the area of a right triangle or its corresponding rectangle  
geom801 Area of a triangle  
geom517 Finding the area of a trapezoid on a grid by using triangles and rectangles  
geom344 Area involving rectangles and triangles  
geom022 Area of a parallelogram  
geom023 Area of a trapezoid  
geom537 Finding the perimeter or area of a rectangle in the coordinate plane  
geom832 Area of quadrilaterals in the coordinate plane  
geom347 Introduction to a circle: Diameter, radius, and chord  
geom016 Circumference of a circle  
geom218 Finding the radius or the diameter of a circle given its circumference  
geom838 Circumference ratios  
geom301 Perimeter involving rectangles and circles  
geom026 Area of a circle  
geom802 Circumference and area of a circle  
geom570 Distinguishing between the area and circumference of a circle  
geom302 Area involving rectangles and circles  
geom563 Area between two concentric circles  
geom036 Word problem involving the area between two concentric circles  
geom214 Area involving inscribed figures  
geom868 Classifying solids  
geom348 Vertices, edges, and faces of a solid  
geom830 Counting the cubes in a solid made of cubes  
geom816 Side views of a solid made of cubes  
geom550 Identifying horizontal and vertical cross sections of solids  
geom311 Volume of a rectangular prism  
geom354 Volume of a rectangular prism made of unit cubes  
geom518 Volume of a solid made of cubes with unit fraction edge lengths  
geom535 Volume of a rectangular prism with fractional edge lengths  
alge617 Writing equivalent expressions for the volume of a rectangular prism  
geom571 Word problem involving the volume of a rectangular prism  
geom558 Word problem involving the rate of filling or emptying a rectangular prism  
geom505 Volume of a piecewise rectangular prism  
geom090 Volume of a triangular prism  
geom572 Word problem involving the volume of a triangular prism  
geom033 Volume of a pyramid



geom637 Relating the volumes of a rectangular prism and a rectangular pyramid  
 geom638 Relating the volumes of a triangular prism and a triangular pyramid  
 geom035 Volume of a cylinder  
 geom573 Word problem involving the volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom622 Volume of a cone  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom639 Relating the volumes of a cylinder and a cone  
 geom575 Word problem involving the volume of a cone  
 geom219 Nets of solids  
 geom031 Surface area of a cube or a rectangular prism  
 geom632 Surface area of a rectangular prism made of unit cubes  
 geom555 Distinguishing between surface area and volume  
 geom556 Using a net to find the surface area of a rectangular prism  
 geom576 Word problem involving the surface area of a rectangular prism  
 geom345 Surface area of a piecewise rectangular prism made of unit cubes  
 geom091 Surface area of a triangular prism  
 geom557 Using a net to find the surface area of a triangular prism  
 geom621 Surface area of a cylinder  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom578 Word problem involving the surface area of a cylinder

### Data Analysis and Probability

mstat088 Identifying statistical questions  
 mstat080 Choosing an appropriate method for gathering data: Problem type 1  
 mstat081 Choosing an appropriate method for gathering data: Problem type 2  
 mstat056 Interpreting a tally table  
 mstat097 Constructing a two-way frequency table: Basic  
 mstat098 Constructing a two-way frequency table: Advanced  
 mstat049 Computing a percentage from a table of values  
 mstat087 Making an inference using a two-way frequency table  
 stat020 Calculating relative frequencies in a contingency table  
 mstat025 Finding if a question can be answered by the data  
 mstat037 Constructing a line plot  
 mstat005 Constructing a bar graph for non-numerical data  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat057 Interpreting a pictograph table  
 mstat031 Interpreting a stem-and-leaf plot  
 geom814 Angle measure in a circle graph  
 mstat094 Constructing a scatter plot  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat092 Finding the mode and range from a line plot  
 mstat001 Mean of a data set  
 mstat077 Using a model to find the mean  
 mstat075 Understanding the mean graphically: Two bars  
 mstat076 Understanding the mean graphically: Four or more bars  
 mstat091 Finding the mean of a symmetric distribution  
 mstat079 Finding sample size and comparing samples for estimating the mean  
 mstat089 Computations involving the mean, sample size, and sum of a data set  
 stat803 Finding the value for a new score that will yield a given mean  
 stat802 Rejecting unreasonable claims based on average statistics  
 mstat066 Weighted mean  
 mstat028 Mean and median of a data set  
 mstat029 How changing a value affects the mean and median

mstat095 Finding outliers in a data set  
 mstat053 Choosing the best measure to describe data  
 mstat078 Comparing measures of center and variation  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat072 Five-number summary and interquartile range  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 mstat082 Computing mean absolute deviation from a list of numerical values  
 mstat083 Computing mean absolute deviation from a bar graph  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 mstat099 Determining a sample space and outcomes for a simple event  
 mstat100 Determining a sample space and outcomes for a compound event  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 mstat054 Classifying likelihood  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat039 Understanding likelihood  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events

## B.94 CC Math 8 Tutorial Lab (Intervention)

### Whole Numbers and Integers

arith124 Whole number place value: Problem type 1  
 arith125 Whole number place value: Problem type 2  
 arith066 Expanded form  
 arith643 Expanded form with zeros  
 arith028 Numeral translation: Problem type 1  
 arith060 Numeral translation: Problem type 2  
 arith630 Addition with carry to the hundreds place  
 arith012 Addition of large numbers  
 arith006 Subtraction with borrowing  
 arith682 Subtraction with multiple regrouping steps  
 arith637 Subtraction and regrouping with zeros  
 arith613 Word problem with addition or subtraction of whole numbers  
 mstat061 Describing an increasing or decreasing pattern from a table of values  
 arith126 Multiplication as repeated addition  
 arith004 Multiplication with carry  
 arith615 Introduction to multiplication of large numbers  
 arith675 Understanding multiplication of a one-digit number with a larger number  
 arith014 Multiplication of large numbers  
 arith641 Multiples: Problem type 1  
 arith642 Multiples: Problem type 2  
 arith614 Word problem with multiplication or division of whole numbers  
 arith130 Word problem with multiplication and addition or subtraction of whole numbers  
 arith451 Word problem on unit rates associated with ratios of whole numbers: Whole number answers

arith243 Division of whole numbers given in fractional form  
arith711 Division involving zero  
arith005 Division with carry  
arith901 Whole number division: 2-digit by 2-digit, no remainder  
arith902 Whole number division: 3-digit by 2-digit, no remainder  
arith616 Quotient and remainder: Problem type 1  
arith617 Quotient and remainder: Problem type 2  
arith631 Quotient and remainder: Problem type 3  
arith650 Division involving quotients with intermediate zeros  
arith023 Word problem with division of whole numbers and rounding  
arith651 Introduction to inequalities  
arith652 Comparing a numerical expression with a number  
arith077 Ordering large numbers  
arith078 Rounding to tens or hundreds  
arith123 Rounding to hundreds or thousands  
arith061 Rounding to thousands, ten thousands, or hundred thousands  
arith101 Estimating a sum of whole numbers  
arith102 Estimating a difference of whole numbers  
arith677 Estimating a product  
arith678 Estimating a quotient  
arith692 Writing expressions using exponents  
arith233 Introduction to exponents  
arith683 Power of 10: Positive exponent  
arith016 Square root of a perfect square  
arith645 Introduction to parentheses  
arith865 Comparing numerical expressions with parentheses  
arith681 Introduction to order of operations  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
arith646 Even and odd numbers  
arith647 Divisibility rules for 2, 5, and 10  
arith648 Divisibility rules for 3 and 9  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith516 Greatest common factor of 3 numbers  
arith409 Introduction to the distributive property  
arith657 Understanding the distributive property  
arith410 Introduction to factoring with numbers  
arith411 Factoring a sum or difference of whole numbers  
arith070 Least common multiple of 2 numbers  
arith804 Least common multiple of 3 numbers  
arith418 Word problem involving the least common multiple of 2 numbers  
arith240 Word problem with common multiples  
alge286 Plotting integers on a number line  
arith691 Ordering integers  
arith415 Using a number line to compare integers  
arith699 Writing a signed number for a real-world situation  
arith400 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 1  
arith511 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 2  
arith416 Comparing signed numbers relating to a real-world situation  
arith402 Plotting opposite integers on a number line  
arith403 Finding opposites of integers  
arith071 Absolute value of a number  
arith412 Finding all numbers with a given absolute value  
arith200 Integer addition: Problem type 1  
arith108 Integer addition: Problem type 2  
arith431 Identifying a sum as a point located a given distance from another point  
arith430 Identifying relative change when combining two quantities

arith688 Integer subtraction: Problem type 1  
arith689 Integer subtraction: Problem type 2  
arith690 Integer subtraction: Problem type 3  
arith754 Addition and subtraction with 3 integers  
arith755 Addition and subtraction with 4 or 5 integers  
arith440 Operations with absolute value: Problem type 1  
arith104 Operations with absolute value: Problem type 2  
alge694 Computing the distance between two integers on a number line  
arith433 Computing and understanding distances between integers on a number line  
arith701 Word problem with addition or subtraction of integers  
arith231 Integer multiplication and division  
arith800 Multiplication of 3 or 4 integers  
arith952 Word problem with multiplication or division of integers  
arith702 Exponents and integers: Problem type 1  
arith703 Exponents and integers: Problem type 2  
arith118 Order of operations with integers  
arith600 Order of operations with integers and exponents  
alge284 Evaluating an algebraic expression: Whole number addition or subtraction  
alge683 Evaluating an algebraic expression: Whole number multiplication or division  
alge285 Evaluating an algebraic expression: Whole numbers with two operations  
alge649 Evaluating a formula  
alge648 Evaluating an algebraic expression: Whole numbers with one operation and an exponent  
alge832 Evaluating an algebraic expression: Whole number operations and exponents  
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
alge004 Evaluating a quadratic expression: Integers  
alge733 Writing a one-step expression for a real-world situation  
alge831 Translating a phrase into a one-step expression  
alge291 Translating a phrase into a two-step expression  
geom339 Perimeter of a polygon  
geom300 Perimeter of a square or a rectangle  
geom019 Area of a square or a rectangle  
geom866 Perimeter and area on a grid  
geom311 Volume of a rectangular prism  
alge650 Identifying solutions to a one-step linear equation: Problem type 1  
alge651 Identifying solutions to a one-step linear equation: Problem type 2  
alge009 Additive property of equality with whole numbers  
alge010 Additive property of equality with integers  
alge008 Multiplicative property of equality with whole numbers  
alge797 Multiplicative property of equality with integers

## Fractions

arith623 Introduction to fractions  
arith665 Understanding equivalent fractions  
arith212 Equivalent fractions  
arith666 Introduction to simplifying a fraction  
arith067 Simplifying a fraction  
alge660 Identifying equivalent signed fractions  
arith687 Fractional position on a number line  
arith667 Plotting fractions on a number line  
arith044 Ordering fractions with the same denominator  
arith091 Ordering fractions with the same numerator  
arith092 Using a common denominator to order fractions  
arith079 Product of a unit fraction and a whole number  
arith086 Product of a fraction and a whole number: Problem type 1  
arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith812 Product of a fraction and a whole number: Problem type 2  
arith905 Determining if a quantity is increased or decreased when multiplied by a fraction  
arith509 Modeling multiplication of proper fractions

arith813 Multiplication of 3 fractions  
 arith822 Signed fraction multiplication: Basic  
 arith105 Signed fraction multiplication: Advanced  
 arith818 Word problem involving fractions and multiplication  
 arith095 Multi-step word problem involving fractions and multiplication  
 arith088 The reciprocal of a number  
 arith694 Division involving a whole number and a fraction  
 arith022 Fraction division  
 arith507 Fact families for multiplication and division of fractions  
 arith508 Modeling division of a whole number by a fraction  
 arith814 Signed fraction division  
 arith819 Word problem involving fractions and division  
 arith618 Addition or subtraction of fractions with the same denominator  
 arith802 Addition or subtraction of fractions with the same denominator and simplification  
 alge432 Introduction to adding fractions with variables and common denominators  
 arith801 Finding the LCD of two fractions  
 arith109 Addition or subtraction of unit fractions  
 arith664 Introduction to addition or subtraction of fractions with different denominators  
 arith230 Addition or subtraction of fractions with different denominators  
 arith803 Addition and subtraction of 3 fractions with different denominators  
 arith116 Signed fraction addition or subtraction: Basic  
 arith864 Signed fraction subtraction involving double negation  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith811 Addition and subtraction of 3 fractions involving signs  
 arith805 Word problem involving addition or subtraction of fractions with different denominators  
 arith100 Fractional part of a circle  
 arith662 Writing a mixed number and an improper fraction for a shaded region  
 arith015 Writing an improper fraction as a mixed number  
 arith619 Writing a mixed number as an improper fraction  
 arith605 Plotting rational numbers on a number line  
 arith215 Addition or subtraction of mixed numbers with the same denominator  
 arith084 Addition of mixed numbers with the same denominator and carry  
 arith216 Subtraction of mixed numbers with the same denominator and borrowing  
 arith806 Addition or subtraction of mixed numbers with different denominators and no carry or borrow  
 arith808 Addition of mixed numbers with different denominators and carry  
 arith809 Subtraction of mixed numbers with different denominators and borrowing  
 arith807 Addition and subtraction of 3 mixed numbers with different denominators  
 arith810 Word problem involving addition or subtraction of mixed numbers with different denominators  
 arith815 Mixed number multiplication  
 arith816 Multiplication of a mixed number and a whole number  
 arith817 Division with a mixed number and a whole number  
 arith068 Mixed number division  
 arith820 Word problem involving multiplication or division with mixed numbers  
 arith821 Exponents and fractions  
 alge790 Evaluating expressions with exponents of zero  
 arith704 Exponents and signed fractions  
 arith859 Order of operations with fractions: Problem type 1  
 arith860 Order of operations with fractions: Problem type 2  
 arith861 Order of operations with fractions: Problem type 3  
 arith695 Complex fraction without variables: Problem type 1  
 alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
 alge801 Additive property of equality with fractions and mixed numbers  
 alge836 Additive property of equality with signed fractions  
 alge646 Multiplicative property of equality with whole numbers: Fractional answers  
 alge820 Multiplicative property of equality with fractions  
 alge012 Multiplicative property of equality with signed fractions

### Decimals

arith127 Writing a decimal and a fraction for a shaded region  
 arith110 Decimal place value: Tenths and hundredths

arith220 Decimal place value: Hundreds to ten thousandths  
arith714 Writing a decimal number less than 1 given its name  
arith715 Writing a decimal number greater than 1 given its name  
arith716 Writing a decimal number given its name: Advanced  
arith829 Reading decimal position on a number line: Tenths  
arith830 Reading decimal position on a number line: Hundredths  
arith831 Understanding decimal position on a number line using zoom: Hundredths  
arith832 Understanding decimal position on a number line using zoom: Thousandths  
arith129 Introduction to ordering decimals  
arith608 Ordering decimals  
arith221 Rounding decimals  
arith717 Converting a decimal to a proper fraction without simplifying: Basic  
arith719 Converting a decimal to a proper fraction without simplifying: Advanced  
arith718 Converting a decimal to a proper fraction in simplest form: Basic  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith721 Converting a decimal to a mixed number and an improper fraction without simplifying  
arith722 Converting a decimal to a mixed number and an improper fraction in simplest form: Basic  
arith724 Converting a decimal to a mixed number and an improper fraction in simplest form: Advanced  
arith624 Addition of aligned decimals  
arith013 Decimal addition with 3 numbers  
arith734 Subtraction of aligned decimals  
arith735 Decimal subtraction: Basic  
arith736 Decimal subtraction: Advanced  
arith737 Decimal addition and subtraction with 3 or more numbers  
arith131 Estimating a decimal sum or difference  
arith117 Signed decimal addition and subtraction  
arith234 Signed decimal addition and subtraction with 3 numbers  
geom525 Computing distances between decimals on the number line  
arith132 Word problem with addition or subtraction of 2 decimals  
arith133 Word problem with addition of 3 or 4 decimals and whole numbers  
arith134 Word problem with subtraction of a whole number and a decimal: Regrouping with zeros  
arith739 Introduction to decimal multiplication  
arith017 Multiplication of a decimal by a whole number  
arith055 Decimal multiplication: Problem type 1  
arith046 Decimal multiplication: Problem type 2  
arith082 Multiplication of a decimal by a power of ten  
arith738 Multiplication of a decimal by a power of 0.1  
arith740 Multiplication of decimals that have a product less than 0.1  
arith752 Estimating a product of decimals  
arith750 Signed decimal multiplication  
arith135 Word problem with multiplication of a decimal and a whole number  
arith137 Word problem with multiplication of two decimals  
arith628 Word problem with multiple decimal operations: Problem type 1  
arith744 Whole number division with decimal answers  
arith081 Division of a decimal by a whole number  
arith743 Division of a decimal by a 1-digit decimal  
arith019 Division of a decimal by a 2-digit decimal  
arith083 Division of a decimal by a power of ten  
arith742 Division of a decimal by a power of 0.1  
arith745 Decimal division with rounding  
arith751 Signed decimal division  
arith136 Word problem with division of a decimal and a whole number  
arith138 Word problem with division of two decimals  
arith629 Word problem with multiple decimal operations: Problem type 2  
arith103 Average of two numbers  
arith725 Converting a fraction with a denominator of 10 or 100 to a decimal  
arith726 Converting a fraction with a denominator of 100 or 1000 to a decimal  
arith113 Converting a proper fraction with a denominator of 2, 4, or 5 to a decimal  
arith114 Converting a mixed number with a denominator of 2, 4, or 5 to a decimal  
arith727 Converting a fraction to a terminating decimal: Basic  
arith728 Converting a fraction to a terminating decimal: Advanced  
arith730 Converting a fraction to a repeating decimal: Basic

arith731 Converting a fraction to a repeating decimal: Advanced  
 arith733 Using a calculator to convert a fraction to a rounded decimal  
 arith111 Converting a mixed number to a terminating decimal: Basic  
 arith112 Converting a mixed number to a terminating decimal: Advanced  
 arith732 Converting a fraction or mixed number to a rounded decimal  
 arith609 Ordering fractions and decimals  
 arith513 Identifying rational decimal numbers  
 alge001 Identifying numbers as integers or non-integers  
 arith753 Squaring decimal bases: Products greater than 0.1  
 arith741 Exponents and decimals: Products less than 0.1  
 arith720 Order of operations with decimals: Problem type 1  
 arith746 Order of operations with decimals: Problem type 2  
 arith747 Order of operations with decimals: Problem type 3  
 arith748 Addition or subtraction with a decimal and a mixed number  
 arith749 Multiplication with a decimal and a fraction  
 alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
 alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
 alge800 Additive property of equality with decimals  
 alge825 Multiplicative property of equality with decimals

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arith823 Writing ratios using different notations  
 arith663 Writing ratios for real-world situations  
 arith450 Identifying statements that describe a ratio  
 arith824 Simplifying a ratio of whole numbers: Problem type 1  
 arith825 Simplifying a ratio of decimals  
 arith827 Finding a unit price  
 arith455 Using tables to compare ratios  
 arith828 Computing unit prices to find the better buy  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 arith505 Word problem on unit rates associated with ratios of fractions  
 arith506 Word problem on unit rates associated with ratios of mixed numbers  
 arith064 Solving a word problem on proportions using a unit rate  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 arith452 Finding missing values in a table of equivalent ratios  
 arith453 Using a table of equivalent ratios to find a missing quantity in a ratio  
 arith504 Writing an equation to represent a proportional relationship  
 alge819 Solving a proportion of the form  $x/a=b/c$ : Basic  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 arith045 Word problem with powers of ten  
 arith500 Identifying proportional relationships in tables by calculating unit rates: Whole numbers  
 arith510 Identifying proportional relationships in tables by calculating unit rates: Fractions  
 geom359 Identifying congruent shapes on a grid  
 geom360 Identifying similar or congruent shapes on a grid  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom538 Finding lengths using scale models  
 geom539 Finding a scale factor: Same units  
 geom541 Using a scale drawing to find actual area  
 geom542 Reproducing a scale drawing at a different scale  
 mstat058 Choosing a measuring tool  
 mstat059 Choosing U.S. Customary measurement units  
 mstat033 Measuring length to the nearest inch  
 mstat034 Measuring length to the nearest quarter or half inch  
 unit005 U.S. Customary unit conversion with whole number values  
 mstat035 Conversions involving measurements in feet and inches



mstat036 Adding measurements in feet and inches  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 unit007 U.S. Customary unit conversion with mixed number values: One-step conversion  
 unit008 U.S. Customary unit conversion with mixed number values: Two-step conversion  
 unit009 U.S. Customary area unit conversion with whole number values  
 mstat060 Choosing metric measurement units  
 mstat063 Measuring length to the nearest centimeter  
 mstat064 Measuring length to the nearest millimeter  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit012 Time unit conversion with whole number values  
 time009 Introduction to adding time  
 time006 Adding time  
 time011 Introduction to elapsed time  
 time007 Elapsed time  
 mstat062 Reading a positive temperature from a thermometer  
 mstat038 Reading the temperature from a thermometer  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 arith826 Simplifying a ratio of whole numbers: Problem type 2  
 alge218 Solving a word problem involving rates and time conversion  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
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arith836 Converting a fraction with a denominator of 100 to a percentage  
 arith837 Converting a percentage to a fraction with a denominator of 100  
 arith674 Finding the percentage of a grid that is shaded  
 arith903 Representing benchmark percentages on a grid  
 arith723 Introduction to converting a percentage to a decimal  
 arith833 Introduction to converting a decimal to a percentage  
 arith834 Converting between percentages and decimals  
 arith841 Converting a mixed number percentage to a decimal  
 arith835 Converting between percentages and decimals in a real-world situation  
 arith090 Converting a percentage to a fraction in simplest form  
 arith839 Converting a decimal percentage to a fraction  
 arith838 Converting a fraction to a percentage: Denominator of 4, 5, or 10  
 arith904 Finding benchmark fractions and percentages for a figure  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith843 Using a calculator to convert a fraction to a rounded percentage  
 arith842 Converting a fraction to a percentage in a real-world situation  
 arith840 Finding a percentage of a whole number  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith844 Finding a percentage of a whole number without a calculator: Advanced  
 arith862 Applying the percent equation: Problem type 1  
 arith863 Applying the percent equation: Problem type 2  
 arith845 Finding a percentage of a total amount: Real-world situations  
 arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount  
 arith857 Estimating a tip without a calculator  
 arith069 Writing a ratio as a percentage without a calculator  
 arith850 Finding the rate of a tax or commission  
 arith849 Finding the total amount given the percentage of a partial amount  
 stat805 Making a reasonable inference based on proportion statistics  
 stat804 Interpreting a circle graph or pie chart  
 arith856 Finding a percentage of a total amount in a circle graph  
 stat801 Computations from a circle graph

arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
 arith851 Finding the final amount given the original amount and a percentage increase or decrease  
 arith847 Finding the sale price given the original price and percent discount  
 arith074 Finding the sale price without a calculator given the original price and percent discount  
 arith848 Finding the total cost including tax or markup  
 arith855 Finding the original amount given the result of a percentage increase or decrease  
 arith031 Finding the original price given the sale price and percent discount  
 arith858 Finding the percentage increase or decrease: Basic  
 arith225 Finding the percentage increase or decrease: Advanced  
 unit052 Finding the absolute error and percent error of a measurement  
 arith232 Finding simple interest without a calculator  
 arith853 Introduction to compound interest  
 arith915 Calculating income tax  
 arith918 Comparing discounts  
 arith909 Examining a savings plan for college  
 arith914 Calculations involving paying for college  
 arith920 Comparing total costs for attending different colleges  
 arith922 Distinguishing between fixed and variable expenses  
 arith916 Computing percentages for categories of a budget  
 arith919 Computations involving cost of living and hourly wage  
 arith921 Comparing annual salaries of different occupations  
 arith911 Calculations involving purchases with debit and credit cards  
 arith950 Comparing costs of checking accounts  
 arith951 Balancing a check register  
 arith912 Reading a credit report  
 arith913 Understanding the impact of a credit score  
 arith917 Computing a person's net worth  
 arith906 Calculating and comparing monthly payments using the ALEKS loan calculator  
 arith907 Calculating monthly payment, total payment, and interest using the ALEKS loan calculator  
 arith908 Calculating and comparing total loan payments using the ALEKS loan calculator  
 arith910 Calculating and comparing simple interest and compound interest

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 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 arith655 Introduction to properties of addition  
 alge187 Properties of addition  
 alge666 Combining like terms: Fractional coefficients  
 alge665 Combining like terms: Decimal coefficients  
 alge310 Multiplying a constant and a linear monomial  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge610 Distributive property: Fractional coefficients  
 alge605 Factoring a linear binomial  
 alge612 Identifying parts in an algebraic expression  
 alge613 Identifying equivalent algebraic expressions  
 arith656 Introduction to properties of multiplication  
 alge188 Properties of real numbers  
 alge608 Using distribution and combining like terms to simplify: Univariate  
 alge667 Identifying properties used to simplify an algebraic expression  
 alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
 alge293 Combining like terms in a quadratic expression  
 alge436 Adding rational expressions with different denominators and a single occurrence of a variable  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge803 Using two steps to solve an equation with whole numbers  
 alge266 Additive property of equality with a negative coefficient  
 alge006 Solving a two-step equation with integers  
 alge200 Solving an equation to find the value of an expression

alge920 Introduction to solving an equation with parentheses  
 alge837 Solving a multi-step equation given in fractional form  
 alge986 Identifying properties used to solve a linear equation  
 alge824 Solving a two-step equation with signed decimals  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge611 Introduction to solving a linear equation with a variable on each side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge614 Clearing fractions in an equation  
 alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
 alge208 Solving a two-step equation with signed fractions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge840 Solving a proportion of the form  $(x+a)\div b = c\div d$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 alge658 Introduction to solving a rational equation  
 alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
 alge603 Introduction to solving an absolute value equation  
 alge864 Solving an absolute value equation: Problem type 1  
 alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
 alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
 alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
 alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
 alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
 alge518 Solving for a variable inside parentheses in terms of other variables  
 alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge016 Translating a sentence into a one-step equation  
 alge671 Choosing stories that can be represented by given one-step equations  
 alge841 Translating a sentence into a multi-step equation  
 alge628 Writing an equation of the form  $Ax + B = C$  to solve a word problem  
 alge618 Comparing arithmetic and algebraic solutions to a word problem  
 alge672 Choosing stories that can be represented by given two-step equations  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge629 Writing an equation of the form  $A(x + B) = C$  to solve a word problem  
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge673 Writing an equation to represent a real-world problem: Variable on both sides  
 alge674 Writing and solving a real-world problem given an equation with the variable on both sides  
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge792 Solving a word problem with three unknowns using a linear equation  
 alge842 Solving a word problem involving consecutive integers  
 alge794 Solving a value mixture problem using a linear equation  
 alge795 Solving a percent mixture problem using a linear equation  
 alge796 Solving a distance, rate, time problem using a linear equation  
 alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge653 Introduction to identifying solutions to an inequality  
 alge748 Writing an inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line

alge652 Identifying solutions to a one-step linear inequality  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge809 Multiplicative property of inequality with whole numbers  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge621 Solving a word problem using a one-step linear inequality  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge636 Solving a two-step linear inequality with whole numbers  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge846 Translating a sentence into a multi-step inequality  
 alge619 Solving a word problem using a two-step linear inequality and describing the solution  
 alge623 Solving a word problem using a two-step linear inequality  
 alge749 Solving a decimal word problem using a two-step linear inequality

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alge278 Reading a point in quadrant 1  
 alge279 Plotting a point in quadrant 1  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge692 Plotting a point in quadrant 1: Mixed number coordinates  
 alge693 Plotting a point in the coordinate plane: Mixed number coordinates  
 arith404 Naming the quadrant or axis of a point given its graph  
 arith405 Naming the quadrant or axis of a point given its coordinates  
 arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
 alge695 Finding distances between points that share a common coordinate given the graph  
 alge696 Finding distances between points that share a common coordinate given their coordinates  
 alge191 Midpoint of a line segment in the plane  
 alge282 Function tables with two-step rules  
 alge850 Table for a linear equation  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 alge280 Graphing a line in quadrant 1  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
 alge924 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Basic  
 alge210 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Advanced  
 alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
 alge881 Graphing a line by first finding its  $x$ - and  $y$ -intercepts  
 alge874 Identifying linear functions given ordered pairs  
 geom358 Identifying parallel and perpendicular lines  
 mstat007 Interpreting a line graph  
 arith454 Making a table and plotting points given a unit rate  
 arith501 Identifying proportional relationships in graphs: Basic  
 arith502 Identifying proportional relationships in graphs: Advanced  
 arith512 Finding outputs and rate of increase given the graph of a line that models a real-world situation

alge699 Comparing proportional relationships given in different forms  
alge575 Finding slope given the graph of a line in quadrant 1 that models a real-world situation  
alge875 Classifying slopes given graphs of lines  
alge886 Finding slope given the graph of a line on a grid  
alge887 Finding slope given two points on the line  
alge885 Finding the slope of horizontal and vertical lines  
alge814 Using right triangles to find the slope of a line  
alge888 Finding the coordinate that yields a given slope  
alge259 Graphing a line given its slope and y-intercept  
alge196 Graphing a line through a given point with a given slope  
alge982 Identifying direct variation equations  
alge938 Identifying direct variation from ordered pairs and writing equations  
alge904 Writing a direct variation equation  
alge175 Word problem on direct variation  
alge828 Interpreting direct variation from a graph  
alge905 Writing an inverse variation equation  
alge903 Identifying direct and inverse variation equations  
alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
alge176 Word problem on inverse variation  
alge220 Word problem on inverse proportions  
alge625 Identifying linear equations: Basic  
alge891 Rewriting a linear equation in the form  $Ax + By = C$   
alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
alge882 Graphing a line by first finding its slope and y-intercept  
alge258 Writing an equation of a line given its slope and y-intercept  
alge892 Writing an equation and graphing a line given its slope and y-intercept  
alge893 Writing an equation in slope-intercept form given the slope and a point  
alge883 Graphing a line given its equation in point-slope form  
alge894 Writing an equation in point-slope form given the slope and a point  
alge070 Writing an equation of a line given the y-intercept and another point  
alge072 Writing the equation of the line through two given points  
alge073 Writing the equations of vertical and horizontal lines through a given point  
geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
alge895 Identifying parallel and perpendicular lines from equations  
geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
alge630 Finding outputs of a one-step function that models a real-world situation: Two variable equation  
alge632 Finding outputs of a two-step function with decimals that models a real-world situation: Two variable equation  
alge633 Finding inputs and outputs of a two-step function that models a real-world situation: Two variable equation  
alge655 Writing and evaluating a function that models a real-world situation: Basic  
alge897 Writing and evaluating a function that models a real-world situation: Advanced  
alge654 Graphing ordered pairs and writing an equation from a table of values in context  
alge656 Writing an equation and drawing its graph to model a real-world situation: Basic  
alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
alge817 Finding the initial amount and rate of change given a table for a linear function  
alge818 Finding the initial amount and rate of change given a graph of a linear function  
alge987 Comparing properties of linear functions given in different forms  
alge989 Interpreting the parameters of a linear function that models a real-world situation  
alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
alge806 Application problem with a linear function: Finding a coordinate given two points  
alge670 Identifying independent and dependent quantities from tables and graphs  
mstat052 Identifying independent and dependent variables from equations or real-world situations  
fun032 Identifying functions from relations  
fun010 Vertical line test  
fun016 Domain and range from ordered pairs  
fun001 Table for a linear function  
pcalc760 Evaluating functions: Linear and quadratic or cubic  
alge294 Finding outputs of a one-step function that models a real-world situation: Function notation  
alge295 Finding outputs of a two-step function with decimals that models a real-world situation: Function no-

tation  
 alge296 Finding inputs and outputs of a two-step function that models a real-world situation: Function notation  
 alge990 Domain and range of a linear function that models a real-world situation  
 fun026 Finding an output of a function from its graph  
 pcalc761 Finding inputs and outputs of a function from its graph  
 fun007 Domain and range from the graph of a discrete relation  
 alge896 Graphing an integer function and finding its range for a given domain  
 alge570 Graphing a function of the form  $f(x) = ax + b$ : Integer slope  
 alge571 Graphing a function of the form  $f(x) = ax + b$ : Fractional slope  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 mstat018 Choosing a graph to fit a narrative: Basic  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge913 Graphing an absolute value equation of the form  $y = A - |x - h| + k$   
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge954 Graphing a parabola of the form  $y = ax^2$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge732 Finding patterns in shapes  
 alge644 Finding the first terms of an arithmetic sequence using an explicit rule  
 alge645 Finding the first terms of a geometric sequence using an explicit rule  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge914 Identifying solutions to a system of linear equations  
 alge725 Graphically solving a system of linear equations  
 alge815 Introduction to using substitution to solve a linear equation  
 alge816 Solving a system of linear equations of the form  $y = mx + b$   
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge634 Solving systems of linear equations with 0, 1, or infinitely many solutions  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 pcalc038 Addition or subtraction of matrices  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced

### Exponents, Polynomials, and Radicals

alge686 Introduction to the product rule with positive exponents: Whole number base  
 alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents



alge311 Product rule with positive exponents: Univariate  
alge030 Product rule with positive exponents: Multivariate  
alge690 Introduction to the power of a power rule with positive exponents: Whole number base  
alge826 Understanding the power rules of exponents  
alge306 Introduction to the power of a power rule of exponents  
alge305 Introduction to the power of a product rule of exponents  
alge307 Power rules with positive exponents: Multivariate products  
alge308 Power rules with positive exponents: Multivariate quotients  
alge451 Simplifying a ratio of multivariate monomials: Basic  
alge688 Introduction to the quotient rule with positive exponents: Whole number base  
alge827 Introduction to the quotient rule of exponents  
alge452 Simplifying a ratio of univariate monomials  
alge026 Quotient of expressions involving exponents  
arith029 Ordering numbers with positive exponents  
arith684 Power of 10: Negative exponent  
arith729 Evaluating an expression with a negative exponent: Whole number base  
arith042 Evaluating an expression with a negative exponent: Positive fraction base  
arith043 Evaluating an expression with a negative exponent: Negative integer base  
arith024 Ordering numbers with negative exponents  
alge791 Rewriting an algebraic expression without a negative exponent  
alge687 Introduction to the product rule with negative exponents: Whole number base  
alge961 Introduction to the product rule with negative exponents  
alge689 Introduction to the quotient rule with negative exponents: Whole number base  
alge755 Quotient rule with negative exponents: Problem type 1  
alge691 Introduction to the power of a power rule with negative exponents: Whole number base  
alge025 Power of a power rule with negative exponents  
scinot023 Introduction to scientific notation with positive exponents  
arith036 Scientific notation with positive exponent  
scinot024 Introduction to scientific notation with negative exponents  
arith037 Scientific notation with negative exponent  
scinot012 Converting between scientific notation and standard form in a real-world situation  
scinot025 Estimating numbers using scientific notation  
scinot020 Choosing metric units and converting to the base unit in scientific notation  
scinot021 Expressing calculator notation as scientific notation  
scinot008 Multiplying numbers written in scientific notation: Basic  
scinot009 Multiplying numbers written in scientific notation: Advanced  
scinot019 Multiplying numbers written in decimal form or scientific notation in a real-world situation  
scinot010 Dividing numbers written in scientific notation: Basic  
scinot011 Dividing numbers written in scientific notation: Advanced  
scinot013 Finding the scale factor between numbers given in scientific notation in a real-world situation  
scinot015 Adding or subtracting numbers written in scientific notation: Same exponents, basic  
scinot022 Adding or subtracting numbers written in scientific notation: Same exponents, advanced  
scinot016 Adding or subtracting numbers written in scientific notation: Different exponents  
scinot017 Estimating the sum or difference of two numbers written in scientific notation  
alge758 Degree and leading coefficient of a univariate polynomial  
alge031 Degree of a multivariate polynomial  
alge798 Simplifying a sum or difference of two univariate polynomials  
alge029 Simplifying a sum or difference of three univariate polynomials  
alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
alge033 Multiplying binomials with leading coefficients of 1  
alge983 Multiplying binomials with leading coefficients greater than 1  
alge765 Multiplying binomials in two variables  
alge764 Multiplying conjugate binomials: Univariate  
alge032 Squaring a binomial: Univariate  
alge935 Multiplication involving binomials and trinomials in one variable  
alge180 Multiplication involving binomials and trinomials in two variables  
alge737 Introduction to the LCM of two monomials  
alge055 Least common multiple of two monomials  
alge736 Introduction to the GCF of two monomials  
alge037 Greatest common factor of two multivariate monomials  
alge738 Factoring out a monomial from a polynomial: Univariate  
alge039 Factoring a quadratic with leading coefficient 1



alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 arith601 Square root of a rational perfect square  
 alge413 Finding all square roots of a number  
 arith760 Square roots of perfect squares with signs  
 arith763 Using a calculator to approximate a square root  
 arith602 Estimating a square root  
 alge567 Using numerical methods to approximate a square root to the nearest tenth  
 alge568 Using numerical methods to approximate a square root to the nearest hundredth  
 arith515 Approximating the location of irrational numbers on a number line  
 arith712 Ordering real numbers  
 arith514 Converting a repeating decimal to a fraction  
 arith432 Identifying true statements about rational and irrational numbers  
 alge002 Identifying numbers as rational or irrational  
 alge415 Introduction to simplifying a radical expression with an even exponent  
 alge264 Square root of a perfect square monomial  
 arith093 Simplifying the square root of a whole number less than 100  
 arith762 Simplifying the square root of a whole number greater than 100  
 alge080 Simplifying a radical expression with an even exponent  
 arith767 Introduction to square root addition or subtraction  
 arith032 Square root addition or subtraction  
 arith764 Introduction to square root multiplication  
 arith765 Square root multiplication: Basic  
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 geom564 Finding side lengths of squares given an area and a perimeter  
 alge400 Introduction to solving a radical equation  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge542 Word problem involving radical equations: Basic  
 arith094 Cube root of an integer  
 alge698 Solving an equation of the form  $x^3 = a$  using integers  
 alge093 Solving an equation using the odd-root property: Problem type 1  
 geom565 Finding the side length of a cube given its volume  
 alge560 Rational exponents: Unit fraction exponents and whole number bases  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem  
 geom862 Using the Pythagorean Theorem repeatedly  
 alge675 Using the Pythagorean Theorem to find distance on a grid  
 alge132 Distance between two points in the plane: Exact answers

### Angles, Lines, and Polygons

geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom551 Finding the complement or supplement of an angle given a figure  
 geom552 Solving an equation involving complementary or supplementary angles  
 geom305 Identifying supplementary and vertical angles  
 geom553 Finding angle measures given two intersecting lines  
 geom530 Solving equations involving vertical angles  
 geom304 Identifying corresponding and alternate angles  
 geom349 Naming segments, rays, and lines  
 geom554 Finding angle measures given two parallel lines cut by a transversal  
 geom531 Solving equations involving angles and a pair of parallel lines  
 geom584 Establishing facts about the angles created when parallel lines are cut by a transversal  
 geom154 Constructing the perpendicular bisector of a line segment

geom158 Constructing an angle bisector  
 geom159 Constructing congruent angles  
 geom150 Constructing a pair of perpendicular lines  
 geom157 Constructing a pair of parallel lines  
 geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom860 Special right triangles: Decimal answers  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom623 Finding angle measures of a triangle given angles with variables  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 geom309 Finding an angle measure for a triangle sharing a side with another triangle  
 geom586 Establishing facts about the interior angles of a triangle  
 geom587 Establishing facts about the interior and exterior angles of a triangle  
 geom543 Drawing a circle with a given radius or diameter  
 geom544 Creating triangles from given side lengths: Problem type 1  
 geom634 Creating triangles from given side lengths: Problem type 2  
 geom844 Using triangle inequality to determine if side lengths form a triangle  
 geom548 Determining if a triangle is possible based on given angle measures  
 geom549 Determining if given measurements define a unique triangle, more than one triangle, or no triangle  
 geom546 Drawing triangles with given conditions: Angle measures  
 geom547 Drawing triangles with given conditions: Side lengths and angle measures  
 geom545 Drawing triangles with given side lengths using a compass  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 geom361 Naming polygons  
 mstat042 Interpreting a Venn diagram of 2 sets  
 geom536 Drawing and identifying a polygon in the coordinate plane  
 geom867 Identifying parallelograms, rectangles, and squares  
 geom310 Properties of quadrilaterals  
 geom532 Classifying parallelograms  
 geom818 Finding the coordinates of a point to make a parallelogram  
 geom870 Sum of the angle measures of a quadrilateral  
 geom852 The sum of interior angle measures in a convex polygon

### Transformations

geom519 Identifying and naming congruent parts of congruent triangles  
 geom520 Identifying and naming congruent triangles  
 geom583 Finding angle measures of a triangle given two angles of a similar triangle  
 geom585 Finding angle measures and side ratios to determine if two triangles are similar  
 geom357 Identifying transformations  
 geom596 Translating a point and giving its coordinates: One step  
 geom909 Translating a point and giving its coordinates: Two steps  
 geom597 Properties of translated figures  
 geom598 Determining if figures are related by a translation  
 geom330 Translating a polygon  
 geom331 Using a translated point to find coordinates of other translated points  
 arith408 Reflecting a point across an axis  
 geom533 Reflecting a point across both coordinate axes  
 geom590 Reflecting a point across an axis and giving its coordinates  
 arith407 Finding the coordinates of a point reflected across an axis

geom560 Finding the coordinates of a point reflected across both axes  
 geom534 Reflecting a polygon across the x-axis or y-axis  
 geom591 Properties of reflected figures  
 geom592 Determining if figures are related by a reflection  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom333 Finding the coordinates of three points reflected over an axis  
 geom334 Drawing lines of symmetry  
 geom602 Finding the coordinates of a point reflected across an axis and translated  
 geom815 Finding an angle of rotation  
 geom624 Identifying rotational symmetry and angles of rotation  
 geom593 Rotating a point and giving its coordinates  
 geom594 Properties of rotated figures  
 geom595 Determining if figures are related by a rotation  
 geom335 Rotating a figure about the origin  
 geom580 Determining if figures are congruent and related by a transformation  
 geom581 Determining if figures are congruent and related by a sequence of transformations  
 geom606 Dilating a segment and giving the coordinates of its endpoints  
 geom607 The effect of dilation on side length  
 geom608 Determining if figures are related by a dilation  
 geom636 The effect of dilation on area  
 geom336 Dilating a figure  
 geom582 Determining if figures are similar and related by a sequence of transformations

### Perimeters, Areas, and Volumes

geom618 Perimeter of a polygon involving mixed numbers and fractions  
 geom078 Sides of polygons having the same perimeter  
 geom221 Finding the missing length in a figure  
 geom353 Perimeter of a piecewise rectangular figure  
 alge615 Writing algebraic expressions for the perimeter of a figure  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom561 Finding the dimensions of a rectangle given its perimeter and a relationship between sides  
 geom620 Area of a rectangle involving fractions  
 geom619 Area of a rectangle involving mixed numbers and fractions  
 geom350 Distinguishing between the area and perimeter of a rectangle  
 geom351 Areas of rectangles with the same perimeter  
 geom869 Estimates and exact answers  
 alge616 Writing algebraic expressions for the area of a figure  
 geom410 Word problem involving the area of a square or a rectangle  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom340 Area of a piecewise rectangular figure  
 geom562 Area between two rectangles  
 geom142 Word problem involving the area between two rectangles  
 geom501 Finding the area of a right triangle on a grid  
 geom509 Finding the area of a right triangle or its corresponding rectangle  
 geom801 Area of a triangle  
 geom517 Finding the area of a trapezoid on a grid by using triangles and rectangles  
 geom344 Area involving rectangles and triangles  
 alge724 Finding an area in terms of variables  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom537 Finding the perimeter or area of a rectangle in the coordinate plane  
 geom832 Area of quadrilaterals in the coordinate plane  
 geom603 Identifying side lengths that give right triangles  
 geom589 Demonstrating the converse of the Pythagorean Theorem  
 geom588 Informal proof of the Pythagorean Theorem  
 geom347 Introduction to a circle: Diameter, radius, and chord  
 geom343 Identifying central angles, inscribed angles, arcs, chords, and tangents of a circle  
 geom016 Circumference of a circle

geom218 Finding the radius or the diameter of a circle given its circumference  
 geom838 Circumference ratios  
 geom301 Perimeter involving rectangles and circles  
 geom026 Area of a circle  
 geom802 Circumference and area of a circle  
 geom570 Distinguishing between the area and circumference of a circle  
 geom302 Area involving rectangles and circles  
 geom563 Area between two concentric circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom126 Area of a sector of a circle: Exact answer in terms of pi  
 geom868 Classifying solids  
 geom348 Vertices, edges, and faces of a solid  
 geom830 Counting the cubes in a solid made of cubes  
 geom816 Side views of a solid made of cubes  
 geom550 Identifying horizontal and vertical cross sections of solids  
 geom354 Volume of a rectangular prism made of unit cubes  
 geom518 Volume of a solid made of cubes with unit fraction edge lengths  
 geom535 Volume of a rectangular prism with fractional edge lengths  
 alge617 Writing equivalent expressions for the volume of a rectangular prism  
 geom571 Word problem involving the volume of a rectangular prism  
 geom558 Word problem involving the rate of filling or emptying a rectangular prism  
 geom505 Volume of a piecewise rectangular prism  
 geom090 Volume of a triangular prism  
 geom572 Word problem involving the volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom637 Relating the volumes of a rectangular prism and a rectangular pyramid  
 geom638 Relating the volumes of a triangular prism and a triangular pyramid  
 geom035 Volume of a cylinder  
 geom573 Word problem involving the volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom622 Volume of a cone  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom639 Relating the volumes of a cylinder and a cone  
 geom575 Word problem involving the volume of a cone  
 geom841 Volume of a sphere  
 geom574 Word problem involving the volume of a sphere  
 geom133 Ratio of volumes  
 geom219 Nets of solids  
 geom031 Surface area of a cube or a rectangular prism  
 geom632 Surface area of a rectangular prism made of unit cubes  
 geom555 Distinguishing between surface area and volume  
 geom556 Using a net to find the surface area of a rectangular prism  
 geom576 Word problem involving the surface area of a rectangular prism  
 geom345 Surface area of a piecewise rectangular prism made of unit cubes  
 geom091 Surface area of a triangular prism  
 geom557 Using a net to find the surface area of a triangular prism  
 geom621 Surface area of a cylinder  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom578 Word problem involving the surface area of a cylinder  
 geom842 Surface area of a sphere  
 geom338 Surface area involving prisms or cylinders  
 geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids  
 geom847 Similar solids: Problem type 2

#### Data Analysis and Probability

mstat088 Identifying statistical questions  
 mstat080 Choosing an appropriate method for gathering data: Problem type 1  
 mstat081 Choosing an appropriate method for gathering data: Problem type 2

mstat056 Interpreting a tally table  
mstat097 Constructing a two-way frequency table: Basic  
mstat098 Constructing a two-way frequency table: Advanced  
mstat049 Computing a percentage from a table of values  
mstat087 Making an inference using a two-way frequency table  
stat020 Calculating relative frequencies in a contingency table  
mstat025 Finding if a question can be answered by the data  
mstat037 Constructing a line plot  
mstat005 Constructing a bar graph for non-numerical data  
mstat004 Constructing a histogram for numerical data  
mstat024 Interpreting a bar graph  
mstat044 Interpreting a double bar graph  
mstat057 Interpreting a pictograph table  
mstat031 Interpreting a stem-and-leaf plot  
geom814 Angle measure in a circle graph  
mstat094 Constructing a scatter plot  
mstat030 Sketching the line of best fit  
mstat023 Scatter plots and correlation  
mstat068 Predictions from the line of best fit  
mstat067 Approximating the equation of a line of best fit and making predictions  
mstat093 Classifying linear and nonlinear relationships from scatter plots  
mstat071 Linear relationship and the correlation coefficient  
mstat096 Identifying outliers and clustering in scatter plots  
mstat003 Mode of a data set  
mstat055 Finding the mode and range of a data set  
mstat092 Finding the mode and range from a line plot  
mstat001 Mean of a data set  
mstat077 Using a model to find the mean  
mstat075 Understanding the mean graphically: Two bars  
mstat076 Understanding the mean graphically: Four or more bars  
mstat091 Finding the mean of a symmetric distribution  
mstat079 Finding sample size and comparing samples for estimating the mean  
mstat089 Computations involving the mean, sample size, and sum of a data set  
stat803 Finding the value for a new score that will yield a given mean  
stat802 Rejecting unreasonable claims based on average statistics  
mstat066 Weighted mean  
mstat028 Mean and median of a data set  
mstat029 How changing a value affects the mean and median  
mstat095 Finding outliers in a data set  
mstat053 Choosing the best measure to describe data  
mstat078 Comparing measures of center and variation  
mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
mstat072 Five-number summary and interquartile range  
mstat006 Constructing a box-and-whisker plot  
mstat073 Using box-and-whisker plots to compare data sets  
mstat090 Comparing sample means  
mstat082 Computing mean absolute deviation from a list of numerical values  
mstat083 Computing mean absolute deviation from a bar graph  
mstat084 Assessing the degree of overlap of two distributions  
mstat043 Interpreting a Venn diagram of 3 sets  
mstat041 Interpreting a tree diagram  
mstat040 Introduction to the counting principle  
mstat015 Counting principle  
mstat099 Determining a sample space and outcomes for a simple event  
mstat100 Determining a sample space and outcomes for a compound event  
pcalc082 Factorial expressions  
mstat017 Computing permutations and combinations  
mstat008 Word problem involving permutations  
mstat009 Word problem involving combinations  
mstat054 Classifying likelihood  
mstat026 Introduction to the probability of an event  
mstat010 Probability of an event

mstat039 Understanding likelihood  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat085 Identifying outcomes in a random number table used to simulate a compound event  
 mstat086 Using a random number table to simulate a compound event

## B.95 CC Algebra 1 Tutorial Lab (Intervention)

### Whole Numbers and Integers

arith124 Whole number place value: Problem type 1  
 arith125 Whole number place value: Problem type 2  
 arith066 Expanded form  
 arith643 Expanded form with zeros  
 arith028 Numeral translation: Problem type 1  
 arith060 Numeral translation: Problem type 2  
 arith630 Addition with carry to the hundreds place  
 arith012 Addition of large numbers  
 arith006 Subtraction with borrowing  
 arith682 Subtraction with multiple regrouping steps  
 arith637 Subtraction and regrouping with zeros  
 arith613 Word problem with addition or subtraction of whole numbers  
 mstat061 Describing an increasing or decreasing pattern from a table of values  
 arith126 Multiplication as repeated addition  
 arith004 Multiplication with carry  
 arith615 Introduction to multiplication of large numbers  
 arith675 Understanding multiplication of a one-digit number with a larger number  
 arith014 Multiplication of large numbers  
 arith641 Multiples: Problem type 1  
 arith642 Multiples: Problem type 2  
 arith614 Word problem with multiplication or division of whole numbers  
 arith130 Word problem with multiplication and addition or subtraction of whole numbers  
 arith451 Word problem on unit rates associated with ratios of whole numbers: Whole number answers  
 arith243 Division of whole numbers given in fractional form  
 arith711 Division involving zero  
 arith005 Division with carry  
 arith901 Whole number division: 2-digit by 2-digit, no remainder  
 arith902 Whole number division: 3-digit by 2-digit, no remainder  
 arith616 Quotient and remainder: Problem type 1  
 arith617 Quotient and remainder: Problem type 2  
 arith631 Quotient and remainder: Problem type 3  
 arith650 Division involving quotients with intermediate zeros  
 arith023 Word problem with division of whole numbers and rounding  
 arith651 Introduction to inequalities  
 arith652 Comparing a numerical expression with a number  
 arith077 Ordering large numbers  
 arith078 Rounding to tens or hundreds  
 arith123 Rounding to hundreds or thousands  
 arith061 Rounding to thousands, ten thousands, or hundred thousands  
 arith101 Estimating a sum of whole numbers  
 arith102 Estimating a difference of whole numbers  
 arith677 Estimating a product

arith678 Estimating a quotient  
arith692 Writing expressions using exponents  
arith233 Introduction to exponents  
arith683 Power of 10: Positive exponent  
arith645 Introduction to parentheses  
arith865 Comparing numerical expressions with parentheses  
arith681 Introduction to order of operations  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
arith646 Even and odd numbers  
arith647 Divisibility rules for 2, 5, and 10  
arith648 Divisibility rules for 3 and 9  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith516 Greatest common factor of 3 numbers  
arith409 Introduction to the distributive property  
arith657 Understanding the distributive property  
arith410 Introduction to factoring with numbers  
arith411 Factoring a sum or difference of whole numbers  
arith070 Least common multiple of 2 numbers  
arith804 Least common multiple of 3 numbers  
arith418 Word problem involving the least common multiple of 2 numbers  
arith240 Word problem with common multiples  
alge286 Plotting integers on a number line  
arith691 Ordering integers  
arith415 Using a number line to compare integers  
arith699 Writing a signed number for a real-world situation  
arith400 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 1  
arith511 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 2  
arith416 Comparing signed numbers relating to a real-world situation  
arith402 Plotting opposite integers on a number line  
arith403 Finding opposites of integers  
arith071 Absolute value of a number  
arith412 Finding all numbers with a given absolute value  
arith200 Integer addition: Problem type 1  
arith108 Integer addition: Problem type 2  
arith431 Identifying a sum as a point located a given distance from another point  
arith430 Identifying relative change when combining two quantities  
arith688 Integer subtraction: Problem type 1  
arith689 Integer subtraction: Problem type 2  
arith690 Integer subtraction: Problem type 3  
arith754 Addition and subtraction with 3 integers  
arith755 Addition and subtraction with 4 or 5 integers  
arith440 Operations with absolute value: Problem type 1  
arith104 Operations with absolute value: Problem type 2  
alge694 Computing the distance between two integers on a number line  
arith433 Computing and understanding distances between integers on a number line  
arith701 Word problem with addition or subtraction of integers  
arith231 Integer multiplication and division  
arith800 Multiplication of 3 or 4 integers  
arith952 Word problem with multiplication or division of integers  
arith702 Exponents and integers: Problem type 1  
arith703 Exponents and integers: Problem type 2  
arith118 Order of operations with integers  
arith600 Order of operations with integers and exponents  
alge284 Evaluating an algebraic expression: Whole number addition or subtraction  
alge683 Evaluating an algebraic expression: Whole number multiplication or division  
alge285 Evaluating an algebraic expression: Whole numbers with two operations



alge649 Evaluating a formula  
alge648 Evaluating an algebraic expression: Whole numbers with one operation and an exponent  
alge832 Evaluating an algebraic expression: Whole number operations and exponents  
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
alge004 Evaluating a quadratic expression: Integers  
alge733 Writing a one-step expression for a real-world situation  
alge831 Translating a phrase into a one-step expression  
alge291 Translating a phrase into a two-step expression  
geom339 Perimeter of a polygon  
geom300 Perimeter of a square or a rectangle  
geom019 Area of a square or a rectangle  
geom866 Perimeter and area on a grid  
geom311 Volume of a rectangular prism  
alge650 Identifying solutions to a one-step linear equation: Problem type 1  
alge651 Identifying solutions to a one-step linear equation: Problem type 2  
alge009 Additive property of equality with whole numbers  
alge010 Additive property of equality with integers  
alge008 Multiplicative property of equality with whole numbers  
alge797 Multiplicative property of equality with integers

### Fractions

arith623 Introduction to fractions  
arith665 Understanding equivalent fractions  
arith212 Equivalent fractions  
arith666 Introduction to simplifying a fraction  
arith067 Simplifying a fraction  
alge660 Identifying equivalent signed fractions  
arith687 Fractional position on a number line  
arith667 Plotting fractions on a number line  
arith044 Ordering fractions with the same denominator  
arith091 Ordering fractions with the same numerator  
arith092 Using a common denominator to order fractions  
arith079 Product of a unit fraction and a whole number  
arith086 Product of a fraction and a whole number: Problem type 1  
arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith812 Product of a fraction and a whole number: Problem type 2  
arith905 Determining if a quantity is increased or decreased when multiplied by a fraction  
arith509 Modeling multiplication of proper fractions  
arith813 Multiplication of 3 fractions  
arith822 Signed fraction multiplication: Basic  
arith105 Signed fraction multiplication: Advanced  
arith818 Word problem involving fractions and multiplication  
arith095 Multi-step word problem involving fractions and multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith507 Fact families for multiplication and division of fractions  
arith508 Modeling division of a whole number by a fraction  
arith814 Signed fraction division  
arith819 Word problem involving fractions and division  
arith618 Addition or subtraction of fractions with the same denominator  
arith802 Addition or subtraction of fractions with the same denominator and simplification  
alge432 Introduction to adding fractions with variables and common denominators  
arith801 Finding the LCD of two fractions  
arith109 Addition or subtraction of unit fractions  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
arith803 Addition and subtraction of 3 fractions with different denominators

arith116 Signed fraction addition or subtraction: Basic  
 arith864 Signed fraction subtraction involving double negation  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith811 Addition and subtraction of 3 fractions involving signs  
 arith805 Word problem involving addition or subtraction of fractions with different denominators  
 arith100 Fractional part of a circle  
 arith662 Writing a mixed number and an improper fraction for a shaded region  
 arith015 Writing an improper fraction as a mixed number  
 arith619 Writing a mixed number as an improper fraction  
 arith605 Plotting rational numbers on a number line  
 arith215 Addition or subtraction of mixed numbers with the same denominator  
 arith084 Addition of mixed numbers with the same denominator and carry  
 arith216 Subtraction of mixed numbers with the same denominator and borrowing  
 arith806 Addition or subtraction of mixed numbers with different denominators and no carry or borrow  
 arith808 Addition of mixed numbers with different denominators and carry  
 arith809 Subtraction of mixed numbers with different denominators and borrowing  
 arith807 Addition and subtraction of 3 mixed numbers with different denominators  
 arith810 Word problem involving addition or subtraction of mixed numbers with different denominators  
 arith815 Mixed number multiplication  
 arith816 Multiplication of a mixed number and a whole number  
 arith817 Division with a mixed number and a whole number  
 arith068 Mixed number division  
 arith820 Word problem involving multiplication or division with mixed numbers  
 arith821 Exponents and fractions  
 alge790 Evaluating expressions with exponents of zero  
 arith704 Exponents and signed fractions  
 arith859 Order of operations with fractions: Problem type 1  
 arith860 Order of operations with fractions: Problem type 2  
 arith861 Order of operations with fractions: Problem type 3  
 arith695 Complex fraction without variables: Problem type 1  
 alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
 alge801 Additive property of equality with fractions and mixed numbers  
 alge836 Additive property of equality with signed fractions  
 alge646 Multiplicative property of equality with whole numbers: Fractional answers  
 alge820 Multiplicative property of equality with fractions  
 alge012 Multiplicative property of equality with signed fractions

## Decimals

arith127 Writing a decimal and a fraction for a shaded region  
 arith110 Decimal place value: Tenths and hundredths  
 arith220 Decimal place value: Hundreds to ten thousandths  
 arith714 Writing a decimal number less than 1 given its name  
 arith715 Writing a decimal number greater than 1 given its name  
 arith716 Writing a decimal number given its name: Advanced  
 arith829 Reading decimal position on a number line: Tenths  
 arith830 Reading decimal position on a number line: Hundredths  
 arith831 Understanding decimal position on a number line using zoom: Hundredths  
 arith832 Understanding decimal position on a number line using zoom: Thousandths  
 arith129 Introduction to ordering decimals  
 arith608 Ordering decimals  
 arith221 Rounding decimals  
 arith717 Converting a decimal to a proper fraction without simplifying: Basic  
 arith719 Converting a decimal to a proper fraction without simplifying: Advanced  
 arith718 Converting a decimal to a proper fraction in simplest form: Basic  
 arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
 arith721 Converting a decimal to a mixed number and an improper fraction without simplifying  
 arith722 Converting a decimal to a mixed number and an improper fraction in simplest form: Basic  
 arith724 Converting a decimal to a mixed number and an improper fraction in simplest form: Advanced  
 arith624 Addition of aligned decimals

arith013 Decimal addition with 3 numbers  
arith734 Subtraction of aligned decimals  
arith735 Decimal subtraction: Basic  
arith736 Decimal subtraction: Advanced  
arith737 Decimal addition and subtraction with 3 or more numbers  
arith131 Estimating a decimal sum or difference  
arith117 Signed decimal addition and subtraction  
arith234 Signed decimal addition and subtraction with 3 numbers  
geom525 Computing distances between decimals on the number line  
arith132 Word problem with addition or subtraction of 2 decimals  
arith133 Word problem with addition of 3 or 4 decimals and whole numbers  
arith134 Word problem with subtraction of a whole number and a decimal: Regrouping with zeros  
arith739 Introduction to decimal multiplication  
arith017 Multiplication of a decimal by a whole number  
arith055 Decimal multiplication: Problem type 1  
arith046 Decimal multiplication: Problem type 2  
arith082 Multiplication of a decimal by a power of ten  
arith738 Multiplication of a decimal by a power of 0.1  
arith740 Multiplication of decimals that have a product less than 0.1  
arith752 Estimating a product of decimals  
arith750 Signed decimal multiplication  
arith135 Word problem with multiplication of a decimal and a whole number  
arith137 Word problem with multiplication of two decimals  
arith628 Word problem with multiple decimal operations: Problem type 1  
arith744 Whole number division with decimal answers  
arith081 Division of a decimal by a whole number  
arith743 Division of a decimal by a 1-digit decimal  
arith019 Division of a decimal by a 2-digit decimal  
arith083 Division of a decimal by a power of ten  
arith742 Division of a decimal by a power of 0.1  
arith745 Decimal division with rounding  
arith751 Signed decimal division  
arith136 Word problem with division of a decimal and a whole number  
arith138 Word problem with division of two decimals  
arith629 Word problem with multiple decimal operations: Problem type 2  
arith103 Average of two numbers  
arith725 Converting a fraction with a denominator of 10 or 100 to a decimal  
arith726 Converting a fraction with a denominator of 100 or 1000 to a decimal  
arith113 Converting a proper fraction with a denominator of 2, 4, or 5 to a decimal  
arith114 Converting a mixed number with a denominator of 2, 4, or 5 to a decimal  
arith727 Converting a fraction to a terminating decimal: Basic  
arith728 Converting a fraction to a terminating decimal: Advanced  
arith730 Converting a fraction to a repeating decimal: Basic  
arith731 Converting a fraction to a repeating decimal: Advanced  
arith733 Using a calculator to convert a fraction to a rounded decimal  
arith111 Converting a mixed number to a terminating decimal: Basic  
arith112 Converting a mixed number to a terminating decimal: Advanced  
arith732 Converting a fraction or mixed number to a rounded decimal  
arith609 Ordering fractions and decimals  
arith753 Squaring decimal bases: Products greater than 0.1  
arith741 Exponents and decimals: Products less than 0.1  
arith720 Order of operations with decimals: Problem type 1  
arith746 Order of operations with decimals: Problem type 2  
arith747 Order of operations with decimals: Problem type 3  
arith748 Addition or subtraction with a decimal and a mixed number  
arith749 Multiplication with a decimal and a fraction  
alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
alge800 Additive property of equality with decimals  
alge825 Multiplicative property of equality with decimals

**Ratios, Proportions, and Measurement**

arith823 Writing ratios using different notations  
arith663 Writing ratios for real-world situations  
arith450 Identifying statements that describe a ratio  
arith824 Simplifying a ratio of whole numbers: Problem type 1  
arith825 Simplifying a ratio of decimals  
arith827 Finding a unit price  
arith455 Using tables to compare ratios  
arith828 Computing unit prices to find the better buy  
arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
arith505 Word problem on unit rates associated with ratios of fractions  
arith506 Word problem on unit rates associated with ratios of mixed numbers  
arith064 Solving a word problem on proportions using a unit rate  
alge823 Solving a one-step word problem using the formula  $d = rt$   
arith452 Finding missing values in a table of equivalent ratios  
arith453 Using a table of equivalent ratios to find a missing quantity in a ratio  
arith504 Writing an equation to represent a proportional relationship  
alge819 Solving a proportion of the form  $x/a=b/c$ : Basic  
alge272 Solving a proportion of the form  $x/a = b/c$   
arith610 Word problem on proportions: Problem type 1  
arith611 Word problem on proportions: Problem type 2  
arith045 Word problem with powers of ten  
arith500 Identifying proportional relationships in tables by calculating unit rates: Whole numbers  
arith510 Identifying proportional relationships in tables by calculating unit rates: Fractions  
geom359 Identifying congruent shapes on a grid  
geom360 Identifying similar or congruent shapes on a grid  
geom037 Similar polygons  
geom038 Similar right triangles  
geom337 Indirect measurement  
geom538 Finding lengths using scale models  
geom539 Finding a scale factor: Same units  
geom541 Using a scale drawing to find actual area  
geom542 Reproducing a scale drawing at a different scale  
mstat058 Choosing a measuring tool  
mstat059 Choosing U.S. Customary measurement units  
mstat033 Measuring length to the nearest inch  
mstat034 Measuring length to the nearest quarter or half inch  
unit005 U.S. Customary unit conversion with whole number values  
mstat035 Conversions involving measurements in feet and inches  
mstat036 Adding measurements in feet and inches  
unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
unit007 U.S. Customary unit conversion with mixed number values: One-step conversion  
unit008 U.S. Customary unit conversion with mixed number values: Two-step conversion  
unit009 U.S. Customary area unit conversion with whole number values  
mstat060 Choosing metric measurement units  
mstat063 Measuring length to the nearest centimeter  
mstat064 Measuring length to the nearest millimeter  
unit001 Metric distance conversion with whole number values  
unit002 Metric mass or capacity conversion with whole number values  
unit003 Metric distance conversion with decimal values  
unit004 Metric conversion with decimal values: Two-step problem  
unit010 Metric area unit conversion with decimal values  
unit012 Time unit conversion with whole number values  
time009 Introduction to adding time  
time006 Adding time  
time011 Introduction to elapsed time  
time007 Elapsed time  
mstat062 Reading a positive temperature from a thermometer  
mstat038 Reading the temperature from a thermometer  
mstat065 Converting between temperatures in Fahrenheit and Celsius  
arith826 Simplifying a ratio of whole numbers: Problem type 2

alge218 Solving a word problem involving rates and time conversion  
unit034 Converting between metric and U.S. Customary unit systems  
unit035 Converting between compound units: Basic  
unit036 Converting between compound units: Advanced

### Percents

arith836 Converting a fraction with a denominator of 100 to a percentage  
arith837 Converting a percentage to a fraction with a denominator of 100  
arith674 Finding the percentage of a grid that is shaded  
arith903 Representing benchmark percentages on a grid  
arith723 Introduction to converting a percentage to a decimal  
arith833 Introduction to converting a decimal to a percentage  
arith834 Converting between percentages and decimals  
arith841 Converting a mixed number percentage to a decimal  
arith835 Converting between percentages and decimals in a real-world situation  
arith090 Converting a percentage to a fraction in simplest form  
arith839 Converting a decimal percentage to a fraction  
arith838 Converting a fraction to a percentage: Denominator of 4, 5, or 10  
arith904 Finding benchmark fractions and percentages for a figure  
arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
arith843 Using a calculator to convert a fraction to a rounded percentage  
arith842 Converting a fraction to a percentage in a real-world situation  
arith840 Finding a percentage of a whole number  
arith030 Finding a percentage of a whole number without a calculator: Basic  
arith844 Finding a percentage of a whole number without a calculator: Advanced  
arith862 Applying the percent equation: Problem type 1  
arith863 Applying the percent equation: Problem type 2  
arith845 Finding a percentage of a total amount: Real-world situations  
arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount  
arith857 Estimating a tip without a calculator  
arith069 Writing a ratio as a percentage without a calculator  
arith850 Finding the rate of a tax or commission  
arith849 Finding the total amount given the percentage of a partial amount  
stat805 Making a reasonable inference based on proportion statistics  
stat804 Interpreting a circle graph or pie chart  
arith856 Finding a percentage of a total amount in a circle graph  
stat801 Computations from a circle graph  
arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
arith851 Finding the final amount given the original amount and a percentage increase or decrease  
arith847 Finding the sale price given the original price and percent discount  
arith074 Finding the sale price without a calculator given the original price and percent discount  
arith848 Finding the total cost including tax or markup  
arith855 Finding the original amount given the result of a percentage increase or decrease  
arith031 Finding the original price given the sale price and percent discount  
arith858 Finding the percentage increase or decrease: Basic  
arith225 Finding the percentage increase or decrease: Advanced  
unit052 Finding the absolute error and percent error of a measurement  
arith232 Finding simple interest without a calculator  
arith853 Introduction to compound interest  
arith915 Calculating income tax  
arith918 Comparing discounts  
arith909 Examining a savings plan for college  
arith914 Calculations involving paying for college  
arith920 Comparing total costs for attending different colleges  
arith922 Distinguishing between fixed and variable expenses  
arith916 Computing percentages for categories of a budget  
arith919 Computations involving cost of living and hourly wage  
arith921 Comparing annual salaries of different occupations  
arith911 Calculations involving purchases with debit and credit cards

arith950 Comparing costs of checking accounts  
 arith951 Balancing a check register  
 arith912 Reading a credit report  
 arith913 Understanding the impact of a credit score  
 arith917 Computing a person's net worth  
 arith906 Calculating and comparing monthly payments using the ALEKS loan calculator  
 arith907 Calculating monthly payment, total payment, and interest using the ALEKS loan calculator  
 arith908 Calculating and comparing total loan payments using the ALEKS loan calculator  
 arith910 Calculating and comparing simple interest and compound interest

### Equations and Inequalities

alge647 Identifying like terms  
 alge700 Combining like terms: Whole number coefficients  
 alge607 Combining like terms: Integer coefficients  
 arith655 Introduction to properties of addition  
 alge187 Properties of addition  
 alge666 Combining like terms: Fractional coefficients  
 alge665 Combining like terms: Decimal coefficients  
 alge310 Multiplying a constant and a linear monomial  
 alge606 Distributive property: Whole number coefficients  
 alge604 Distributive property: Integer coefficients  
 alge610 Distributive property: Fractional coefficients  
 alge605 Factoring a linear binomial  
 alge612 Identifying parts in an algebraic expression  
 alge613 Identifying equivalent algebraic expressions  
 arith656 Introduction to properties of multiplication  
 alge188 Properties of real numbers  
 alge608 Using distribution and combining like terms to simplify: Univariate  
 alge667 Identifying properties used to simplify an algebraic expression  
 alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
 alge293 Combining like terms in a quadratic expression  
 alge436 Adding rational expressions with different denominators and a single occurrence of a variable  
 alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge803 Using two steps to solve an equation with whole numbers  
 alge266 Additive property of equality with a negative coefficient  
 alge006 Solving a two-step equation with integers  
 alge200 Solving an equation to find the value of an expression  
 alge920 Introduction to solving an equation with parentheses  
 alge837 Solving a multi-step equation given in fractional form  
 alge986 Identifying properties used to solve a linear equation  
 alge824 Solving a two-step equation with signed decimals  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge611 Introduction to solving a linear equation with a variable on each side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge614 Clearing fractions in an equation  
 alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
 alge208 Solving a two-step equation with signed fractions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge840 Solving a proportion of the form  $(x+a)\div b = c\div d$



alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
alge658 Introduction to solving a rational equation  
alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
alge603 Introduction to solving an absolute value equation  
alge864 Solving an absolute value equation: Problem type 1  
alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
alge518 Solving for a variable inside parentheses in terms of other variables  
alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
alge016 Translating a sentence into a one-step equation  
alge671 Choosing stories that can be represented by given one-step equations  
alge841 Translating a sentence into a multi-step equation  
alge628 Writing an equation of the form  $Ax + B = C$  to solve a word problem  
alge618 Comparing arithmetic and algebraic solutions to a word problem  
alge672 Choosing stories that can be represented by given two-step equations  
alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
alge629 Writing an equation of the form  $A(x + B) = C$  to solve a word problem  
alge014 Solving a word problem with two unknowns using a linear equation  
geom217 Finding the side length of a rectangle given its perimeter or area  
alge673 Writing an equation to represent a real-world problem: Variable on both sides  
alge674 Writing and solving a real-world problem given an equation with the variable on both sides  
alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
alge792 Solving a word problem with three unknowns using a linear equation  
alge842 Solving a word problem involving consecutive integers  
alge794 Solving a value mixture problem using a linear equation  
alge795 Solving a percent mixture problem using a linear equation  
alge796 Solving a distance, rate, time problem using a linear equation  
alge015 Translating a sentence by using an inequality symbol  
alge845 Translating a sentence into a one-step inequality  
alge653 Introduction to identifying solutions to an inequality  
alge748 Writing an inequality for a real-world situation  
alge017 Graphing a linear inequality on the number line  
alge822 Writing an inequality given a graph on the number line  
alge186 Translating a sentence into a compound inequality  
alge166 Graphing a compound inequality on the number line  
alge847 Writing a compound inequality given a graph on the number line  
alge652 Identifying solutions to a one-step linear inequality  
alge848 Additive property of inequality with whole numbers  
alge849 Additive property of inequality with integers  
alge852 Additive property of inequality with signed fractions  
alge853 Additive property of inequality with signed decimals  
alge809 Multiplicative property of inequality with whole numbers  
alge854 Multiplicative property of inequality with integers  
alge964 Multiplicative property of inequality with signed fractions  
alge621 Solving a word problem using a one-step linear inequality  
alge844 Identifying solutions to a two-step linear inequality in one variable  
alge636 Solving a two-step linear inequality with whole numbers  
alge855 Solving a two-step linear inequality: Problem type 1  
alge856 Solving a two-step linear inequality: Problem type 2  
alge857 Solving a two-step linear inequality with a fractional coefficient  
alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
alge846 Translating a sentence into a multi-step inequality  
alge619 Solving a word problem using a two-step linear inequality and describing the solution  
alge623 Solving a word problem using a two-step linear inequality  
alge749 Solving a decimal word problem using a two-step linear inequality



**Graphing, Functions, and Sequences**

alge278 Reading a point in quadrant 1  
alge279 Plotting a point in quadrant 1  
alge064 Reading a point in the coordinate plane  
alge067 Plotting a point in the coordinate plane  
alge692 Plotting a point in quadrant 1: Mixed number coordinates  
alge693 Plotting a point in the coordinate plane: Mixed number coordinates  
arith404 Naming the quadrant or axis of a point given its graph  
arith405 Naming the quadrant or axis of a point given its coordinates  
arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
alge695 Finding distances between points that share a common coordinate given the graph  
alge696 Finding distances between points that share a common coordinate given their coordinates  
alge191 Midpoint of a line segment in the plane  
alge282 Function tables with two-step rules  
alge850 Table for a linear equation  
fun005 Writing a function rule given a table of ordered pairs: One-step rules  
fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
alge873 Identifying solutions to a linear equation in two variables  
alge066 Finding a solution to a linear equation in two variables  
alge280 Graphing a line in quadrant 1  
alge877 Graphing a linear equation of the form  $y = mx$   
alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
alge880 Graphing a line given its equation in standard form  
alge198 Graphing a vertical or horizontal line  
alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
alge924 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Basic  
alge210 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Advanced  
alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
alge881 Graphing a line by first finding its  $x$ - and  $y$ -intercepts  
alge874 Identifying linear functions given ordered pairs  
geom358 Identifying parallel and perpendicular lines  
mstat007 Interpreting a line graph  
arith454 Making a table and plotting points given a unit rate  
arith501 Identifying proportional relationships in graphs: Basic  
arith502 Identifying proportional relationships in graphs: Advanced  
arith512 Finding outputs and rate of increase given the graph of a line that models a real-world situation  
alge699 Comparing proportional relationships given in different forms  
alge575 Finding slope given the graph of a line in quadrant 1 that models a real-world situation  
alge875 Classifying slopes given graphs of lines  
alge886 Finding slope given the graph of a line on a grid  
alge887 Finding slope given two points on the line  
alge885 Finding the slope of horizontal and vertical lines  
alge814 Using right triangles to find the slope of a line  
alge888 Finding the coordinate that yields a given slope  
alge259 Graphing a line given its slope and  $y$ -intercept  
alge196 Graphing a line through a given point with a given slope  
alge982 Identifying direct variation equations  
alge938 Identifying direct variation from ordered pairs and writing equations  
alge904 Writing a direct variation equation  
alge175 Word problem on direct variation  
alge828 Interpreting direct variation from a graph  
alge905 Writing an inverse variation equation  
alge903 Identifying direct and inverse variation equations  
alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
alge176 Word problem on inverse variation  
alge220 Word problem on inverse proportions  
alge625 Identifying linear equations: Basic

alge891 Rewriting a linear equation in the form  $Ax + By = C$   
 alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
 alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
 alge882 Graphing a line by first finding its slope and y-intercept  
 alge258 Writing an equation of a line given its slope and y-intercept  
 alge892 Writing an equation and graphing a line given its slope and y-intercept  
 alge893 Writing an equation in slope-intercept form given the slope and a point  
 alge883 Graphing a line given its equation in point-slope form  
 alge894 Writing an equation in point-slope form given the slope and a point  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 alge895 Identifying parallel and perpendicular lines from equations  
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 alge630 Finding outputs of a one-step function that models a real-world situation: Two variable equation  
 alge632 Finding outputs of a two-step function with decimals that models a real-world situation: Two variable equation  
 alge633 Finding inputs and outputs of a two-step function that models a real-world situation: Two variable equation  
 alge655 Writing and evaluating a function that models a real-world situation: Basic  
 alge897 Writing and evaluating a function that models a real-world situation: Advanced  
 alge654 Graphing ordered pairs and writing an equation from a table of values in context  
 alge656 Writing an equation and drawing its graph to model a real-world situation: Basic  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge817 Finding the initial amount and rate of change given a table for a linear function  
 alge818 Finding the initial amount and rate of change given a graph of a linear function  
 alge987 Comparing properties of linear functions given in different forms  
 alge989 Interpreting the parameters of a linear function that models a real-world situation  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 alge670 Identifying independent and dependent quantities from tables and graphs  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun016 Domain and range from ordered pairs  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 alge294 Finding outputs of a one-step function that models a real-world situation: Function notation  
 alge295 Finding outputs of a two-step function with decimals that models a real-world situation: Function notation  
 alge296 Finding inputs and outputs of a two-step function that models a real-world situation: Function notation  
 alge990 Domain and range of a linear function that models a real-world situation  
 fun026 Finding an output of a function from its graph  
 pcalc761 Finding inputs and outputs of a function from its graph  
 fun007 Domain and range from the graph of a discrete relation  
 alge896 Graphing an integer function and finding its range for a given domain  
 alge570 Graphing a function of the form  $f(x) = ax + b$ : Integer slope  
 alge571 Graphing a function of the form  $f(x) = ax + b$ : Fractional slope  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 mstat018 Choosing a graph to fit a narrative: Basic  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge913 Graphing an absolute value equation of the form  $y = A - |x - h| + k$   
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge954 Graphing a parabola of the form  $y = ax^2 + bx + c$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge262 Graphing a cubic function of the form  $y = ax^3 + bx^2 + cx + d$   
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge732 Finding patterns in shapes

alge644 Finding the first terms of an arithmetic sequence using an explicit rule  
 alge645 Finding the first terms of a geometric sequence using an explicit rule  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge914 Identifying solutions to a system of linear equations  
 alge725 Graphically solving a system of linear equations  
 alge815 Introduction to using substitution to solve a linear equation  
 alge816 Solving a system of linear equations of the form  $y = mx + b$   
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge634 Solving systems of linear equations with 0, 1, or infinitely many solutions  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 pcalc038 Addition or subtraction of matrices  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced

### Exponents, Polynomials, and Radicals

alge686 Introduction to the product rule with positive exponents: Whole number base  
 alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge311 Product rule with positive exponents: Univariate  
 alge030 Product rule with positive exponents: Multivariate  
 alge690 Introduction to the power of a power rule with positive exponents: Whole number base  
 alge826 Understanding the power rules of exponents  
 alge306 Introduction to the power of a power rule of exponents  
 alge305 Introduction to the power of a product rule of exponents  
 alge307 Power rules with positive exponents: Multivariate products  
 alge308 Power rules with positive exponents: Multivariate quotients  
 alge451 Simplifying a ratio of multivariate monomials: Basic  
 alge688 Introduction to the quotient rule with positive exponents: Whole number base  
 alge827 Introduction to the quotient rule of exponents  
 alge452 Simplifying a ratio of univariate monomials  
 alge026 Quotient of expressions involving exponents  
 arith029 Ordering numbers with positive exponents  
 arith684 Power of 10: Negative exponent  
 arith729 Evaluating an expression with a negative exponent: Whole number base  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge687 Introduction to the product rule with negative exponents: Whole number base

alge961 Introduction to the product rule with negative exponents  
alge689 Introduction to the quotient rule with negative exponents: Whole number base  
alge755 Quotient rule with negative exponents: Problem type 1  
alge691 Introduction to the power of a power rule with negative exponents: Whole number base  
alge025 Power of a power rule with negative exponents  
scinot023 Introduction to scientific notation with positive exponents  
arith036 Scientific notation with positive exponent  
scinot024 Introduction to scientific notation with negative exponents  
arith037 Scientific notation with negative exponent  
scinot012 Converting between scientific notation and standard form in a real-world situation  
scinot025 Estimating numbers using scientific notation  
scinot020 Choosing metric units and converting to the base unit in scientific notation  
scinot021 Expressing calculator notation as scientific notation  
scinot008 Multiplying numbers written in scientific notation: Basic  
scinot009 Multiplying numbers written in scientific notation: Advanced  
scinot019 Multiplying numbers written in decimal form or scientific notation in a real-world situation  
scinot010 Dividing numbers written in scientific notation: Basic  
scinot011 Dividing numbers written in scientific notation: Advanced  
scinot013 Finding the scale factor between numbers given in scientific notation in a real-world situation  
scinot015 Adding or subtracting numbers written in scientific notation: Same exponents, basic  
scinot022 Adding or subtracting numbers written in scientific notation: Same exponents, advanced  
scinot016 Adding or subtracting numbers written in scientific notation: Different exponents  
scinot017 Estimating the sum or difference of two numbers written in scientific notation  
alge758 Degree and leading coefficient of a univariate polynomial  
alge031 Degree of a multivariate polynomial  
alge798 Simplifying a sum or difference of two univariate polynomials  
alge029 Simplifying a sum or difference of three univariate polynomials  
alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
alge033 Multiplying binomials with leading coefficients of 1  
alge983 Multiplying binomials with leading coefficients greater than 1  
alge765 Multiplying binomials in two variables  
alge764 Multiplying conjugate binomials: Univariate  
alge032 Squaring a binomial: Univariate  
alge935 Multiplication involving binomials and trinomials in one variable  
alge180 Multiplication involving binomials and trinomials in two variables  
alge737 Introduction to the LCM of two monomials  
alge055 Least common multiple of two monomials  
alge736 Introduction to the GCF of two monomials  
alge037 Greatest common factor of two multivariate monomials  
alge738 Factoring out a monomial from a polynomial: Univariate  
alge039 Factoring a quadratic with leading coefficient 1  
alge944 Factoring a perfect square trinomial with leading coefficient 1  
alge290 Factoring a difference of squares in one variable: Basic  
alge947 Factoring a difference of squares in one variable: Advanced  
alge045 Finding the roots of a quadratic equation with leading coefficient 1  
arith016 Square root of a perfect square  
arith601 Square root of a rational perfect square  
alge413 Finding all square roots of a number  
arith760 Square roots of perfect squares with signs  
arith763 Using a calculator to approximate a square root  
arith602 Estimating a square root  
alge567 Using numerical methods to approximate a square root to the nearest tenth  
alge568 Using numerical methods to approximate a square root to the nearest hundredth  
arith515 Approximating the location of irrational numbers on a number line  
arith712 Ordering real numbers  
alge001 Identifying numbers as integers or non-integers  
arith513 Identifying rational decimal numbers  
arith514 Converting a repeating decimal to a fraction  
arith432 Identifying true statements about rational and irrational numbers  
alge002 Identifying numbers as rational or irrational  
alge415 Introduction to simplifying a radical expression with an even exponent  
alge264 Square root of a perfect square monomial

arith093 Simplifying the square root of a whole number less than 100  
 arith762 Simplifying the square root of a whole number greater than 100  
 alge080 Simplifying a radical expression with an even exponent  
 arith767 Introduction to square root addition or subtraction  
 arith032 Square root addition or subtraction  
 arith764 Introduction to square root multiplication  
 arith765 Square root multiplication: Basic  
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 geom564 Finding side lengths of squares given an area and a perimeter  
 alge400 Introduction to solving a radical equation  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge542 Word problem involving radical equations: Basic  
 arith094 Cube root of an integer  
 alge698 Solving an equation of the form  $x^3 = a$  using integers  
 alge093 Solving an equation using the odd-root property: Problem type 1  
 geom565 Finding the side length of a cube given its volume  
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 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem  
 geom862 Using the Pythagorean Theorem repeatedly  
 alge675 Using the Pythagorean Theorem to find distance on a grid  
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 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom551 Finding the complement or supplement of an angle given a figure  
 geom552 Solving an equation involving complementary or supplementary angles  
 geom305 Identifying supplementary and vertical angles  
 geom553 Finding angle measures given two intersecting lines  
 geom530 Solving equations involving vertical angles  
 geom304 Identifying corresponding and alternate angles  
 geom349 Naming segments, rays, and lines  
 geom554 Finding angle measures given two parallel lines cut by a transversal  
 geom531 Solving equations involving angles and a pair of parallel lines  
 geom584 Establishing facts about the angles created when parallel lines are cut by a transversal  
 geom154 Constructing the perpendicular bisector of a line segment  
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 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom860 Special right triangles: Decimal answers  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom623 Finding angle measures of a triangle given angles with variables  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 geom309 Finding an angle measure for a triangle sharing a side with another triangle  
 geom586 Establishing facts about the interior angles of a triangle  
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 geom543 Drawing a circle with a given radius or diameter  
 geom544 Creating triangles from given side lengths: Problem type 1

geom634 Creating triangles from given side lengths: Problem type 2  
 geom844 Using triangle inequality to determine if side lengths form a triangle  
 geom548 Determining if a triangle is possible based on given angle measures  
 geom549 Determining if given measurements define a unique triangle, more than one triangle, or no triangle  
 geom546 Drawing triangles with given conditions: Angle measures  
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 geom545 Drawing triangles with given side lengths using a compass  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
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 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 geom361 Naming polygons  
 mstat042 Interpreting a Venn diagram of 2 sets  
 geom536 Drawing and identifying a polygon in the coordinate plane  
 geom867 Identifying parallelograms, rectangles, and squares  
 geom310 Properties of quadrilaterals  
 geom532 Classifying parallelograms  
 geom818 Finding the coordinates of a point to make a parallelogram  
 geom870 Sum of the angle measures of a quadrilateral  
 geom852 The sum of interior angle measures in a convex polygon

### Transformations

geom519 Identifying and naming congruent parts of congruent triangles  
 geom520 Identifying and naming congruent triangles  
 geom583 Finding angle measures of a triangle given two angles of a similar triangle  
 geom585 Finding angle measures and side ratios to determine if two triangles are similar  
 geom357 Identifying transformations  
 geom596 Translating a point and giving its coordinates: One step  
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 geom597 Properties of translated figures  
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 geom330 Translating a polygon  
 geom331 Using a translated point to find coordinates of other translated points  
 arith408 Reflecting a point across an axis  
 geom533 Reflecting a point across both coordinate axes  
 geom590 Reflecting a point across an axis and giving its coordinates  
 arith407 Finding the coordinates of a point reflected across an axis  
 geom560 Finding the coordinates of a point reflected across both axes  
 geom534 Reflecting a polygon across the x-axis or y-axis  
 geom591 Properties of reflected figures  
 geom592 Determining if figures are related by a reflection  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom333 Finding the coordinates of three points reflected over an axis  
 geom334 Drawing lines of symmetry  
 geom602 Finding the coordinates of a point reflected across an axis and translated  
 geom815 Finding an angle of rotation  
 geom624 Identifying rotational symmetry and angles of rotation  
 geom593 Rotating a point and giving its coordinates  
 geom594 Properties of rotated figures  
 geom595 Determining if figures are related by a rotation  
 geom335 Rotating a figure about the origin  
 geom580 Determining if figures are congruent and related by a transformation  
 geom581 Determining if figures are congruent and related by a sequence of transformations  
 geom606 Dilating a segment and giving the coordinates of its endpoints  
 geom607 The effect of dilation on side length



geom608 Determining if figures are related by a dilation  
 geom636 The effect of dilation on area  
 geom336 Dilating a figure  
 geom582 Determining if figures are similar and related by a sequence of transformations

### Perimeters, Areas, and Volumes

geom618 Perimeter of a polygon involving mixed numbers and fractions  
 geom078 Sides of polygons having the same perimeter  
 geom221 Finding the missing length in a figure  
 geom353 Perimeter of a piecewise rectangular figure  
 alge615 Writing algebraic expressions for the perimeter of a figure  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom561 Finding the dimensions of a rectangle given its perimeter and a relationship between sides  
 geom620 Area of a rectangle involving fractions  
 geom619 Area of a rectangle involving mixed numbers and fractions  
 geom350 Distinguishing between the area and perimeter of a rectangle  
 geom351 Areas of rectangles with the same perimeter  
 geom869 Estimates and exact answers  
 alge616 Writing algebraic expressions for the area of a figure  
 geom410 Word problem involving the area of a square or a rectangle  
 geom143 Finding the perimeter or area of a rectangle given one of these values  
 geom340 Area of a piecewise rectangular figure  
 geom562 Area between two rectangles  
 geom142 Word problem involving the area between two rectangles  
 geom501 Finding the area of a right triangle on a grid  
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 geom801 Area of a triangle  
 geom517 Finding the area of a trapezoid on a grid by using triangles and rectangles  
 geom344 Area involving rectangles and triangles  
 alge724 Finding an area in terms of variables  
 geom022 Area of a parallelogram  
 geom023 Area of a trapezoid  
 geom537 Finding the perimeter or area of a rectangle in the coordinate plane  
 geom832 Area of quadrilaterals in the coordinate plane  
 geom603 Identifying side lengths that give right triangles  
 geom589 Demonstrating the converse of the Pythagorean Theorem  
 geom588 Informal proof of the Pythagorean Theorem  
 geom347 Introduction to a circle: Diameter, radius, and chord  
 geom343 Identifying central angles, inscribed angles, arcs, chords, and tangents of a circle  
 geom016 Circumference of a circle  
 geom218 Finding the radius or the diameter of a circle given its circumference  
 geom838 Circumference ratios  
 geom301 Perimeter involving rectangles and circles  
 geom026 Area of a circle  
 geom802 Circumference and area of a circle  
 geom570 Distinguishing between the area and circumference of a circle  
 geom302 Area involving rectangles and circles  
 geom563 Area between two concentric circles  
 geom036 Word problem involving the area between two concentric circles  
 geom214 Area involving inscribed figures  
 geom126 Area of a sector of a circle: Exact answer in terms of pi  
 geom868 Classifying solids  
 geom348 Vertices, edges, and faces of a solid  
 geom830 Counting the cubes in a solid made of cubes  
 geom816 Side views of a solid made of cubes  
 geom550 Identifying horizontal and vertical cross sections of solids  
 geom354 Volume of a rectangular prism made of unit cubes  
 geom518 Volume of a solid made of cubes with unit fraction edge lengths  
 geom535 Volume of a rectangular prism with fractional edge lengths



alge617 Writing equivalent expressions for the volume of a rectangular prism  
 geom571 Word problem involving the volume of a rectangular prism  
 geom558 Word problem involving the rate of filling or emptying a rectangular prism  
 geom505 Volume of a piecewise rectangular prism  
 geom090 Volume of a triangular prism  
 geom572 Word problem involving the volume of a triangular prism  
 geom033 Volume of a pyramid  
 geom637 Relating the volumes of a rectangular prism and a rectangular pyramid  
 geom638 Relating the volumes of a triangular prism and a triangular pyramid  
 geom035 Volume of a cylinder  
 geom573 Word problem involving the volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom622 Volume of a cone  
 geom086 Volume of a cone: Exact answers in terms of  $\pi$   
 geom639 Relating the volumes of a cylinder and a cone  
 geom575 Word problem involving the volume of a cone  
 geom841 Volume of a sphere  
 geom574 Word problem involving the volume of a sphere  
 geom133 Ratio of volumes  
 geom219 Nets of solids  
 geom031 Surface area of a cube or a rectangular prism  
 geom632 Surface area of a rectangular prism made of unit cubes  
 geom555 Distinguishing between surface area and volume  
 geom556 Using a net to find the surface area of a rectangular prism  
 geom576 Word problem involving the surface area of a rectangular prism  
 geom345 Surface area of a piecewise rectangular prism made of unit cubes  
 geom091 Surface area of a triangular prism  
 geom557 Using a net to find the surface area of a triangular prism  
 geom621 Surface area of a cylinder  
 geom034 Surface area of a cylinder: Exact answers in terms of  $\pi$   
 geom578 Word problem involving the surface area of a cylinder  
 geom842 Surface area of a sphere  
 geom338 Surface area involving prisms or cylinders  
 geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids  
 geom847 Similar solids: Problem type 2

### Data Analysis and Probability

mstat088 Identifying statistical questions  
 mstat080 Choosing an appropriate method for gathering data: Problem type 1  
 mstat081 Choosing an appropriate method for gathering data: Problem type 2  
 mstat056 Interpreting a tally table  
 mstat097 Constructing a two-way frequency table: Basic  
 mstat098 Constructing a two-way frequency table: Advanced  
 mstat049 Computing a percentage from a table of values  
 mstat087 Making an inference using a two-way frequency table  
 stat020 Calculating relative frequencies in a contingency table  
 mstat025 Finding if a question can be answered by the data  
 mstat037 Constructing a line plot  
 mstat005 Constructing a bar graph for non-numerical data  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat057 Interpreting a pictograph table  
 mstat031 Interpreting a stem-and-leaf plot  
 geom814 Angle measure in a circle graph  
 mstat094 Constructing a scatter plot  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 mstat068 Predictions from the line of best fit

mstat067 Approximating the equation of a line of best fit and making predictions  
 mstat093 Classifying linear and nonlinear relationships from scatter plots  
 mstat071 Linear relationship and the correlation coefficient  
 mstat096 Identifying outliers and clustering in scatter plots  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat092 Finding the mode and range from a line plot  
 mstat001 Mean of a data set  
 mstat077 Using a model to find the mean  
 mstat075 Understanding the mean graphically: Two bars  
 mstat076 Understanding the mean graphically: Four or more bars  
 mstat091 Finding the mean of a symmetric distribution  
 mstat079 Finding sample size and comparing samples for estimating the mean  
 mstat089 Computations involving the mean, sample size, and sum of a data set  
 stat803 Finding the value for a new score that will yield a given mean  
 stat802 Rejecting unreasonable claims based on average statistics  
 mstat066 Weighted mean  
 mstat028 Mean and median of a data set  
 mstat029 How changing a value affects the mean and median  
 mstat095 Finding outliers in a data set  
 mstat053 Choosing the best measure to describe data  
 mstat078 Comparing measures of center and variation  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat072 Five-number summary and interquartile range  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 mstat090 Comparing sample means  
 mstat082 Computing mean absolute deviation from a list of numerical values  
 mstat083 Computing mean absolute deviation from a bar graph  
 mstat084 Assessing the degree of overlap of two distributions  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 mstat099 Determining a sample space and outcomes for a simple event  
 mstat100 Determining a sample space and outcomes for a compound event  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 mstat054 Classifying likelihood  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat039 Understanding likelihood  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat085 Identifying outcomes in a random number table used to simulate a compound event  
 mstat086 Using a random number table to simulate a compound event

## B.96 CC Geometry Tutorial Lab (Intervention)

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arith233 Introduction to exponents  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith067 Simplifying a fraction  
arith212 Equivalent fractions  
arith687 Fractional position on a number line  
arith667 Plotting fractions on a number line  
arith711 Division involving zero  
arith070 Least common multiple of 2 numbers  
arith804 Least common multiple of 3 numbers  
arith801 Finding the LCD of two fractions  
arith664 Introduction to addition or subtraction of fractions with different denominators  
arith230 Addition or subtraction of fractions with different denominators  
arith803 Addition and subtraction of 3 fractions with different denominators  
arith079 Product of a unit fraction and a whole number  
arith086 Product of a fraction and a whole number: Problem type 1  
arith053 Fraction multiplication  
arith812 Product of a fraction and a whole number: Problem type 2  
arith813 Multiplication of 3 fractions  
arith821 Exponents and fractions  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith695 Complex fraction without variables: Problem type 1  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith808 Addition of mixed numbers with different denominators and carry  
arith809 Subtraction of mixed numbers with different denominators and borrowing  
arith807 Addition and subtraction of 3 mixed numbers with different denominators  
arith815 Mixed number multiplication  
arith816 Multiplication of a mixed number and a whole number  
arith068 Mixed number division  
arith110 Decimal place value: Tenths and hundredths  
arith221 Rounding decimals  
arith129 Introduction to ordering decimals  
arith733 Using a calculator to convert a fraction to a rounded decimal  
arith624 Addition of aligned decimals  
arith735 Decimal subtraction: Basic  
arith736 Decimal subtraction: Advanced  
arith739 Introduction to decimal multiplication  
arith017 Multiplication of a decimal by a whole number  
arith082 Multiplication of a decimal by a power of ten  
arith081 Division of a decimal by a whole number  
arith083 Division of a decimal by a power of ten  
alge286 Plotting integers on a number line  
arith605 Plotting rational numbers on a number line  
arith691 Ordering integers  
arith200 Integer addition: Problem type 1  
arith108 Integer addition: Problem type 2  
arith688 Integer subtraction: Problem type 1  
arith689 Integer subtraction: Problem type 2  
arith690 Integer subtraction: Problem type 3  
arith754 Addition and subtraction with 3 integers  
arith231 Integer multiplication and division  
arith800 Multiplication of 3 or 4 integers  
arith118 Order of operations with integers  
arith116 Signed fraction addition or subtraction: Basic  
arith864 Signed fraction subtraction involving double negation  
arith822 Signed fraction multiplication: Basic  
arith117 Signed decimal addition and subtraction  
arith702 Exponents and integers: Problem type 1

arith704 Exponents and signed fractions  
arith071 Absolute value of a number  
arith412 Finding all numbers with a given absolute value  
arith440 Operations with absolute value: Problem type 1  
alge284 Evaluating an algebraic expression: Whole number addition or subtraction  
alge683 Evaluating an algebraic expression: Whole number multiplication or division  
alge285 Evaluating an algebraic expression: Whole numbers with two operations  
alge649 Evaluating a formula  
alge648 Evaluating an algebraic expression: Whole numbers with one operation and an exponent  
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
alge004 Evaluating a quadratic expression: Integers  
alge700 Combining like terms: Whole number coefficients  
alge607 Combining like terms: Integer coefficients  
alge310 Multiplying a constant and a linear monomial  
alge606 Distributive property: Whole number coefficients  
alge604 Distributive property: Integer coefficients  
alge610 Distributive property: Fractional coefficients  
alge608 Using distribution and combining like terms to simplify: Univariate  
alge293 Combining like terms in a quadratic expression  
alge432 Introduction to adding fractions with variables and common denominators  
alge650 Identifying solutions to a one-step linear equation: Problem type 1  
alge651 Identifying solutions to a one-step linear equation: Problem type 2  
alge009 Additive property of equality with whole numbers  
alge800 Additive property of equality with decimals  
alge010 Additive property of equality with integers  
alge836 Additive property of equality with signed fractions  
alge008 Multiplicative property of equality with whole numbers  
alge646 Multiplicative property of equality with whole numbers: Fractional answers  
alge820 Multiplicative property of equality with fractions  
alge825 Multiplicative property of equality with decimals  
alge797 Multiplicative property of equality with integers  
alge012 Multiplicative property of equality with signed fractions  
alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
alge803 Using two steps to solve an equation with whole numbers  
alge266 Additive property of equality with a negative coefficient  
alge006 Solving a two-step equation with integers  
alge815 Introduction to using substitution to solve a linear equation  
alge200 Solving an equation to find the value of an expression  
alge920 Introduction to solving an equation with parentheses  
alge837 Solving a multi-step equation given in fractional form  
alge986 Identifying properties used to solve a linear equation  
alge838 Introduction to solving an equation with variables on the same side  
alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
alge611 Introduction to solving a linear equation with a variable on each side  
alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
alge614 Clearing fractions in an equation  
alge208 Solving a two-step equation with signed fractions  
alge603 Introduction to solving an absolute value equation  
alge658 Introduction to solving a rational equation  
alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
alge831 Translating a phrase into a one-step expression  
alge016 Translating a sentence into a one-step equation  
arith504 Writing an equation to represent a proportional relationship  
alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
alge513 Solving for a variable in terms of other variables using multiplication or division: Basic

alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
alge518 Solving for a variable inside parentheses in terms of other variables  
alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
arith834 Converting between percentages and decimals  
arith843 Using a calculator to convert a fraction to a rounded percentage  
arith030 Finding a percentage of a whole number without a calculator: Basic  
arith840 Finding a percentage of a whole number  
arith862 Applying the percent equation: Problem type 1  
arith686 Writing a ratio as a percentage  
arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
arith851 Finding the final amount given the original amount and a percentage increase or decrease  
arith858 Finding the percentage increase or decrease: Basic  
alge015 Translating a sentence by using an inequality symbol  
alge653 Introduction to identifying solutions to an inequality  
alge017 Graphing a linear inequality on the number line  
alge186 Translating a sentence into a compound inequality  
alge166 Graphing a compound inequality on the number line  
alge652 Identifying solutions to a one-step linear inequality  
alge848 Additive property of inequality with whole numbers  
alge849 Additive property of inequality with integers  
alge809 Multiplicative property of inequality with whole numbers  
alge854 Multiplicative property of inequality with integers  
alge964 Multiplicative property of inequality with signed fractions  
alge844 Identifying solutions to a two-step linear inequality in one variable  
alge636 Solving a two-step linear inequality with whole numbers  
alge855 Solving a two-step linear inequality: Problem type 1  
alge856 Solving a two-step linear inequality: Problem type 2  
alge857 Solving a two-step linear inequality with a fractional coefficient  
alge024 Introduction to the product rule of exponents  
alge311 Product rule with positive exponents: Univariate  
alge306 Introduction to the power of a power rule of exponents  
alge305 Introduction to the power of a product rule of exponents  
alge451 Simplifying a ratio of multivariate monomials: Basic  
alge827 Introduction to the quotient rule of exponents  
alge452 Simplifying a ratio of univariate monomials  
alge026 Quotient of expressions involving exponents  
alge798 Simplifying a sum or difference of two univariate polynomials  
alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
alge033 Multiplying binomials with leading coefficients of 1  
alge983 Multiplying binomials with leading coefficients greater than 1  
alge764 Multiplying conjugate binomials: Univariate  
alge765 Multiplying binomials in two variables  
alge032 Squaring a binomial: Univariate  
alge068 Squaring a binomial: Multivariate  
arith056 Factors  
arith033 Greatest common factor of 2 numbers  
alge605 Factoring a linear binomial  
alge736 Introduction to the GCF of two monomials  
alge738 Factoring out a monomial from a polynomial: Univariate  
alge039 Factoring a quadratic with leading coefficient 1  
alge936 Factoring out a constant before factoring a quadratic  
alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1  
alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
alge944 Factoring a perfect square trinomial with leading coefficient 1  
arith016 Square root of a perfect square  
arith763 Using a calculator to approximate a square root  
arith601 Square root of a rational perfect square  
arith760 Square roots of perfect squares with signs  
arith761 Square roots of integers raised to even exponents  
alge415 Introduction to simplifying a radical expression with an even exponent  
alge264 Square root of a perfect square monomial

alge537 Using absolute value to simplify square roots of perfect square monomials  
arith094 Cube root of an integer  
arith093 Simplifying the square root of a whole number less than 100  
arith762 Simplifying the square root of a whole number greater than 100  
alge080 Simplifying a radical expression with an even exponent  
alge520 Introduction to simplifying a radical expression with an odd exponent  
alge521 Simplifying a radical expression with an odd exponent  
arith764 Introduction to square root multiplication  
arith765 Square root multiplication: Basic  
arith767 Introduction to square root addition or subtraction  
arith766 Simplifying a quotient of square roots  
alge527 Rationalizing a denominator: Quotient involving square roots  
alge528 Rationalizing a denominator: Square root of a fraction  
alge400 Introduction to solving a radical equation  
alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
alge698 Solving an equation of the form  $x^3 = a$  using integers  
alge681 Solving an equation written in factored form  
alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
alge045 Finding the roots of a quadratic equation with leading coefficient 1  
alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
alge211 Solving a quadratic equation needing simplification  
alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
alge958 Solving a quadratic equation using the square root property: Decimal answers, basic  
alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
alge095 Applying the quadratic formula: Exact answers  
alge963 Applying the quadratic formula: Decimal answers  
geom339 Perimeter of a polygon  
geom300 Perimeter of a square or a rectangle  
geom618 Perimeter of a polygon involving mixed numbers and fractions  
geom221 Finding the missing length in a figure  
geom353 Perimeter of a piecewise rectangular figure  
alge615 Writing algebraic expressions for the perimeter of a figure  
geom817 Finding a side length given the perimeter and side lengths with variables  
geom078 Sides of polygons having the same perimeter  
geom019 Area of a square or a rectangle  
geom866 Perimeter and area on a grid  
geom620 Area of a rectangle involving fractions  
geom619 Area of a rectangle involving mixed numbers and fractions  
geom350 Distinguishing between the area and perimeter of a rectangle  
geom351 Areas of rectangles with the same perimeter  
geom340 Area of a piecewise rectangular figure  
geom562 Area between two rectangles  
geom869 Estimates and exact answers  
alge616 Writing algebraic expressions for the area of a figure  
geom564 Finding side lengths of squares given an area and a perimeter  
geom648 Finding side lengths of rectangles given one dimension and an area or a perimeter  
geom561 Finding the dimensions of a rectangle given its perimeter and a relationship between sides  
geom143 Finding the perimeter or area of a rectangle given one of these values  
geom410 Word problem involving the area of a square or a rectangle  
geom142 Word problem involving the area between two rectangles  
geom444 Word problem on optimizing an area or perimeter  
mstat033 Measuring length to the nearest inch  
mstat034 Measuring length to the nearest quarter or half inch  
unit005 U.S. Customary unit conversion with whole number values  
mstat035 Conversions involving measurements in feet and inches  
mstat036 Adding measurements in feet and inches  
unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
mstat063 Measuring length to the nearest centimeter  
mstat064 Measuring length to the nearest millimeter  
unit001 Metric distance conversion with whole number values  
unit002 Metric mass or capacity conversion with whole number values  
unit003 Metric distance conversion with decimal values

unit004 Metric conversion with decimal values: Two-step problem  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit009 U.S. Customary area unit conversion with whole number values  
 unit010 Metric area unit conversion with decimal values

### Segments and Angles

geom349 Naming segments, rays, and lines  
 geom459 Analyzing relationships between points, lines, and planes given a figure  
 geom359 Identifying congruent shapes on a grid  
 geom358 Identifying parallel and perpendicular lines  
 geom407 Matching basic geometric terms with their definitions  
 geom392 Introduction to segment addition  
 alge694 Computing the distance between two integers on a number line  
 geom394 Computing distances between decimals on a number line  
 geom393 Finding a point on a number line given the length of a segment and another point  
 geom395 Midpoint of a number line segment: Integers  
 geom396 Midpoint of a number line segment: Decimals  
 geom397 Using a segment's midpoint and endpoint to locate the other endpoint  
 geom521 Segment addition and midpoints  
 geom399 Finding a point that partitions a number line segment in a given fractional relationship  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge693 Plotting a point in the coordinate plane: Mixed number coordinates  
 arith404 Naming the quadrant or axis of a point given its graph  
 arith405 Naming the quadrant or axis of a point given its coordinates  
 arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
 alge850 Table for a linear equation  
 alge695 Finding distances between points that share a common coordinate given the graph  
 alge696 Finding distances between points that share a common coordinate given their coordinates  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge675 Using the Pythagorean Theorem to find distance on a grid  
 alge132 Distance between two points in the plane: Exact answers  
 alge324 Distance between two points in the plane: Decimal answers  
 geom458 Identifying congruent segments in the plane  
 alge191 Midpoint of a line segment in the plane  
 alge414 Finding an endpoint of a line segment given the other endpoint and the midpoint  
 geom406 Finding a point that partitions a segment in the plane in a given fractional relationship  
 geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom460 Naming angles, sides of angles, and vertices  
 geom039 Finding supplementary and complementary angles  
 geom454 Introduction to angle addition  
 geom551 Finding the complement or supplement of an angle given a figure  
 geom552 Solving an equation involving complementary or supplementary angles  
 geom850 Angle addition with relationships between angles  
 geom851 Angle addition and angle bisectors  
 geom800 Identifying linear pairs and vertical angles  
 geom553 Finding angle measures given two intersecting lines  
 geom500 Solving equations involving vertical angles and linear pairs  
 geom389 Constructing congruent line segments  
 geom158 Constructing an angle bisector  
 geom159 Constructing congruent angles  
 geom154 Constructing the perpendicular bisector of a line segment  
 geom457 Making conjectures given a geometric construction

### Reasoning



alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge732 Finding patterns in shapes  
 mstat042 Interpreting a Venn diagram of 2 sets  
 glogic001 Conditional statements and negations  
 glogic005 The converse, inverse, and contrapositive of a conditional statement  
 glogic011 Writing the converse, inverse, and contrapositive of a conditional statement and determining their truth values  
 glogic012 Writing a biconditional statement as a conditional statement and its converse and determining truth values  
 glogic013 Finding counterexamples to conjectures  
 glogic008 Conditional statements and deductive reasoning  
 geom665 Distinguishing between undefined terms, definitions, postulates, conjectures, and theorems  
 geom616 Introduction to proofs: Justifying statements  
 geom614 Proofs involving segment congruence  
 geom611 Proofs involving angle congruence

### Lines

geom304 Identifying corresponding and alternate angles  
 geom554 Finding angle measures given two parallel lines cut by a transversal  
 geom531 Solving equations involving angles and a pair of parallel lines  
 geom503 Solving equations involving angles and two pairs of parallel lines  
 geom584 Establishing facts about the angles created when parallel lines are cut by a transversal  
 geom150 Constructing a pair of perpendicular lines  
 geom157 Constructing a pair of parallel lines  
 geom835 Introduction to proofs involving parallel lines  
 geom836 Proofs involving parallel lines  
 fun001 Table for a linear function  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding x- and y-intercepts given the graph of a line on a grid  
 alge924 Finding x- and y-intercepts of a line given the equation: Basic  
 alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
 alge197 Graphing a line given its x- and y-intercepts  
 alge881 Graphing a line by first finding its x- and y-intercepts  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines  
 alge814 Using right triangles to find the slope of a line  
 alge259 Graphing a line given its slope and y-intercept  
 alge196 Graphing a line through a given point with a given slope  
 alge891 Rewriting a linear equation in the form  $Ax + By = C$   
 alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
 alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
 alge882 Graphing a line by first finding its slope and y-intercept  
 alge258 Writing an equation of a line given its slope and y-intercept  
 alge892 Writing an equation and graphing a line given its slope and y-intercept  
 alge893 Writing an equation in slope-intercept form given the slope and a point  
 alge318 Finding the slope and a point on a line given its equation in point-slope form  
 alge883 Graphing a line given its equation in point-slope form  
 alge894 Writing an equation in point-slope form given the slope and a point

alge313 Writing an equation in standard form given the slope and a point  
 alge070 Writing an equation of a line given the y-intercept and another point  
 alge072 Writing the equation of the line through two given points  
 alge073 Writing the equations of vertical and horizontal lines through a given point  
 geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
 geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
 alge895 Identifying parallel and perpendicular lines from equations  
 geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 geom462 Identifying parallel and perpendicular lines from coordinates  
 alge914 Identifying solutions to a system of linear equations  
 alge725 Graphically solving a system of linear equations  
 alge816 Solving a system of linear equations of the form  $y = mx + b$   
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition

### Triangles

geom306 Acute, obtuse, and right triangles  
 geom626 Classifying scalene, isosceles, and equilateral triangles by side lengths  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom322 Identifying coordinates that give right triangles  
 geom323 Identifying scalene, isosceles, and equilateral triangles given coordinates of their vertices  
 geom001 Finding an angle measure of a triangle given two angles  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom628 Finding angle measures of a triangle given angles with variables  
 geom586 Establishing facts about the interior angles of a triangle  
 geom587 Establishing facts about the interior and exterior angles of a triangle  
 geom357 Identifying transformations  
 geom519 Identifying and naming congruent parts of congruent triangles  
 geom325 Determining if figures are related by rigid motions  
 geom327 Examining triangle congruence in terms of rigid motion  
 geom329 Exploring the triangle congruence theorems  
 geom418 Completing proofs involving congruent triangles using SSS or SAS  
 geom420 Introduction to proving triangles congruent using SSS or SAS  
 geom520 Identifying and naming congruent triangles  
 geom419 Completing proofs involving congruent triangles using ASA or AAS  
 geom421 Introduction to proving triangles congruent using ASA or AAS  
 geom837 Proofs involving congruent triangles and segment or angle bisectors  
 geom647 Separating overlapping triangles and identifying common features  
 geom840 Proofs involving congruent triangles that overlap: Basic  
 geom423 Proofs involving congruent triangles with parallel or perpendicular segments  
 geom424 Determining when to apply the HL congruence property  
 geom425 Introduction to proving triangles congruent using the HL property  
 geom422 Introduction to proofs involving congruent triangles and CPCTC  
 geom839 Proofs involving congruent triangles, parallel or perpendicular segments, and CPCTC  
 geom843 Proofs involving congruent triangles that overlap: Advanced  
 geom645 Finding side lengths and angle measures of isosceles and equilateral triangles  
 geom309 Finding an angle measure for a triangle sharing a side with another triangle  
 geom629 Finding angle measures of an isosceles triangle given angles with variables  
 geom363 Proofs of theorems involving isosceles triangles  
 geom449 Classifying segments inside triangles  
 geom446 Using the circumcenter of a triangle to find segment lengths  
 geom447 Using the incenter of a triangle to find segment lengths and angle measures  
 geom448 Using the centroid of a triangle to find segment lengths  
 geom413 Introduction to the triangle midsegment theorem  
 geom324 Proving the triangle midsegment theorem in the coordinate plane  
 geom441 Proof involving points on the perpendicular bisector of a line segment

geom544 Creating triangles from given side lengths: Problem type 1  
 geom634 Creating triangles from given side lengths: Problem type 2  
 geom844 Using triangle inequality to determine if side lengths form a triangle  
 geom664 Using triangle inequality to determine possible lengths of a third side  
 geom548 Determining if a triangle is possible based on given angle measures  
 geom549 Determining if given measurements define a unique triangle, more than one triangle, or no triangle  
 geom546 Drawing triangles with given conditions: Angle measures  
 geom547 Drawing triangles with given conditions: Side lengths and angle measures  
 geom543 Drawing a circle with a given radius or diameter  
 geom545 Drawing triangles with given side lengths using a compass  
 geom854 Relationship between angle measures and side lengths in a triangle  
 geom855 Relationship between angle measures and side lengths in two triangles  
 geom451 Using the hinge theorem  
 geom650 Indirect proof (proof by contradiction)

### Polygons and Quadrilaterals

geom361 Naming polygons  
 geom870 Sum of the angle measures of a quadrilateral  
 geom656 Finding the sum of the interior angle measures of a convex polygon given the number of sides  
 geom655 Finding the number of sides of a convex polygon given the sum of the measures of the interior angles  
 geom657 Finding a missing interior angle measure in a convex polygon  
 geom658 Finding the measures of an interior angle and an exterior angle of a regular polygon  
 geom659 Finding the number of sides of a regular polygon given the measure of an interior angle  
 geom867 Identifying parallelograms, rectangles, and squares  
 geom310 Properties of quadrilaterals  
 geom532 Classifying parallelograms  
 geom528 Finding measures involving diagonals of parallelograms  
 geom527 Conditions for parallelograms  
 geom833 Finding measures involving diagonals of rectangles  
 geom436 Finding angle measures involving diagonals of a rhombus  
 geom523 Conditions for quadrilaterals  
 geom661 Completing proofs of theorems involving sides of a parallelogram  
 geom662 Completing proofs of theorems involving angles of a parallelogram  
 geom536 Drawing and identifying a polygon in the coordinate plane  
 geom818 Finding the coordinates of a point to make a parallelogram  
 geom819 Finding coordinates of vertices of polygons  
 geom321 Proving that a quadrilateral with given vertices is a parallelogram  
 geom408 Classifying parallelograms in the coordinate plane  
 geom863 Congruence in the coordinate plane

### Similarity

arith823 Writing ratios using different notations  
 arith663 Writing ratios for real-world situations  
 arith824 Simplifying a ratio of whole numbers: Problem type 1  
 arith825 Simplifying a ratio of decimals  
 alge819 Solving a proportion of the form  $x/a=b/c$ : Basic  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 alge840 Solving a proportion of the form  $(x+a)\div b = c\div d$   
 alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
 arith064 Solving a word problem on proportions using a unit rate  
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 alge888 Finding the coordinate that yields a given slope  
 geom390 Finding a point that partitions a number line segment in a given ratio  
 geom391 Finding a point that partitions a segment in the plane in a given ratio  
 geom360 Identifying similar or congruent shapes on a grid

geom583 Finding angle measures of a triangle given two angles of a similar triangle  
 geom585 Finding angle measures and side ratios to determine if two triangles are similar  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom510 Triangles and parallel lines  
 geom475 Triangles and angle bisectors  
 geom326 Determining if figures are related by similarity transformations  
 geom328 Examining triangle similarity in terms of similarity transformations  
 geom364 Identifying and naming similar triangles  
 geom365 Proofs involving similar triangles  
 geom472 Completing proofs involving the triangle proportionality theorem  
 geom461 Proving the slope criterion for parallel or perpendicular lines  
 geom538 Finding lengths using scale models  
 geom539 Finding a scale factor: Same units  
 geom541 Using a scale drawing to find actual area  
 geom542 Reproducing a scale drawing at a different scale

### Right Triangles and Trigonometry

alge408 Word problem involving the Pythagorean Theorem  
 alge713 Using the Pythagorean Theorem and a quadratic equation to find side lengths of a right triangle  
 geom862 Using the Pythagorean Theorem repeatedly  
 geom603 Identifying side lengths that give right triangles  
 geom589 Demonstrating the converse of the Pythagorean Theorem  
 geom452 Identifying similar right triangles that overlap  
 geom507 Right triangles and geometric mean  
 geom473 Proving the Pythagorean Theorem using similar triangles  
 geom860 Special right triangles: Decimal answers  
 geom506 Special right triangles: Exact answers  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc008 Finding trigonometric ratios given a right triangle  
 geom317 Understanding trigonometric ratios through similar right triangles  
 geom316 Relationship between the sines and cosines of complementary angles  
 geom318 Using similar right triangles to find trigonometric ratios  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc642 Solving a right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc031 Solving a triangle with the law of sines: Problem type 1  
 pcalc032 Solving a triangle with the law of sines: Problem type 2  
 pcalc644 Solving a word problem using the law of sines  
 geom320 Proving the law of sines  
 pcalc033 Solving a triangle with the law of cosines  
 pcalc645 Solving a word problem using the law of cosines  
 geom409 Proving the law of cosines  
 pcalc063 Translation of a vector  
 pcalc739 Multiplication of a vector by a scalar: Geometric approach  
 pcalc060 Magnitude of a vector given in component form  
 geom856 Vector addition and scalar multiplication: Component form  
 vector008 Linear combination of vectors: Component form  
 geom857 Vector addition: Geometric approach  
 vector007 Vector subtraction: Geometric approach  
 vector002 Finding the magnitude and direction of a vector given its graph  
 vector005 Finding the components of a vector given its graph

**Transformations**

geom596 Translating a point and giving its coordinates: One step  
 geom909 Translating a point and giving its coordinates: Two steps  
 geom597 Properties of translated figures  
 geom598 Determining if figures are related by a translation  
 geom330 Translating a polygon  
 geom331 Using a translated point to find coordinates of other translated points  
 geom375 Understanding the definition of a translation  
 pcalc038 Addition or subtraction of matrices  
 arith408 Reflecting a point across an axis  
 geom533 Reflecting a point across both coordinate axes  
 geom590 Reflecting a point across an axis and giving its coordinates  
 arith407 Finding the coordinates of a point reflected across an axis  
 geom560 Finding the coordinates of a point reflected across both axes  
 geom534 Reflecting a polygon across the x-axis or y-axis  
 geom591 Properties of reflected figures  
 geom592 Determining if figures are related by a reflection  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom333 Finding the coordinates of three points reflected over an axis  
 geom602 Finding the coordinates of a point reflected across an axis and translated  
 geom376 Understanding the definition of a reflection  
 geom593 Rotating a point and giving its coordinates  
 geom594 Properties of rotated figures  
 geom595 Determining if figures are related by a rotation  
 geom335 Rotating a figure about the origin  
 geom377 Understanding the definition of a rotation  
 geom334 Drawing lines of symmetry  
 geom815 Finding an angle of rotation  
 geom624 Identifying rotational symmetry and angles of rotation  
 geom831 Rotational and point symmetries  
 geom369 Writing a rule to describe a translation  
 geom370 Writing a rule to describe a reflection  
 geom371 Writing a rule to describe a rotation  
 geom373 Identifying transformations that map a quadrilateral onto itself  
 geom374 Identifying transformations that map a regular polygon onto itself  
 geom580 Determining if figures are congruent and related by a transformation  
 geom581 Determining if figures are congruent and related by a sequence of transformations  
 geom606 Dilating a segment and giving the coordinates of its endpoints  
 geom607 The effect of dilation on side length  
 geom608 Determining if figures are related by a dilation  
 geom636 The effect of dilation on area  
 geom336 Dilating a figure  
 geom372 Writing a rule to describe a dilation  
 geom582 Determining if figures are similar and related by a sequence of transformations  
 geom463 Exploring similarity of circles  
 geom379 Exploring the effect of dilation on lines  
 pcalc037 Scalar multiplication of a matrix

**Area and Volume**

geom022 Area of a parallelogram  
 geom501 Finding the area of a right triangle on a grid  
 geom509 Finding the area of a right triangle or its corresponding rectangle  
 geom801 Area of a triangle  
 geom537 Finding the perimeter or area of a rectangle in the coordinate plane  
 geom430 Word problem on population density  
 geom426 Finding the perimeter of a triangle, trapezoid, or parallelogram in the coordinate plane  
 geom437 Finding the area of a triangle or parallelogram in the coordinate plane

geom440 Finding the area of a right triangle using the Pythagorean Theorem  
geom068 Computing an area using the Pythagorean Theorem  
geom588 Informal proof of the Pythagorean Theorem  
geom344 Area involving rectangles and triangles  
alge724 Finding an area in terms of variables  
geom439 Using trigonometry to find the area of a right triangle  
pcalc646 Finding the area of a triangle using trigonometry  
geom319 Expressing the area of a triangle in terms of the sine of one of its angles  
pcalc647 Heron's formula  
geom517 Finding the area of a trapezoid on a grid by using triangles and rectangles  
geom023 Area of a trapezoid  
geom434 Area of a rhombus  
geom435 Finding the area of a rhombus using the Pythagorean Theorem  
geom438 Finding the area of a trapezoid, rhombus, or kite in the coordinate plane  
geom213 Area of a regular polygon  
geom479 Finding the area of a regular polygon using special right triangles  
geom481 Side lengths, perimeters, and areas of similar polygons  
geom347 Introduction to a circle: Diameter, radius, and chord  
geom016 Circumference of a circle  
geom218 Finding the radius or the diameter of a circle given its circumference  
geom427 Informal argument for the formula of the circumference of a circle  
geom838 Circumference ratios  
geom301 Perimeter involving rectangles and circles  
geom026 Area of a circle  
geom802 Circumference and area of a circle  
geom477 Circumference and area of a circle: Exact answers in terms of pi  
geom570 Distinguishing between the area and circumference of a circle  
geom428 Informal argument for the formula of the area of a circle  
geom302 Area involving rectangles and circles  
geom563 Area between two concentric circles  
geom036 Word problem involving the area between two concentric circles  
geom214 Area involving inscribed figures  
geom649 Area involving multiple inscribed figures  
geom212 Circles inscribed in and circumscribed about regular polygons  
geom126 Area of a sector of a circle: Exact answer in terms of pi  
geom429 Informal argument for the formula of the area of a sector  
geom868 Classifying solids  
geom348 Vertices, edges, and faces of a solid  
geom219 Nets of solids  
geom861 Nets of solids: Advanced  
geom830 Counting the cubes in a solid made of cubes  
geom816 Side views of a solid made of cubes  
geom550 Identifying horizontal and vertical cross sections of solids  
geom381 Identifying solids generated by rotations of two-dimensional regions  
geom443 Identifying geometric shapes that model real-world objects  
geom491 Identifying properties of Euclidean and spherical geometries  
geom031 Surface area of a cube or a rectangular prism  
geom632 Surface area of a rectangular prism made of unit cubes  
geom556 Using a net to find the surface area of a rectangular prism  
geom576 Word problem involving the surface area of a rectangular prism  
geom345 Surface area of a piecewise rectangular prism made of unit cubes  
geom091 Surface area of a triangular prism  
geom557 Using a net to find the surface area of a triangular prism  
geom621 Surface area of a cylinder  
geom034 Surface area of a cylinder: Exact answers in terms of pi  
geom578 Word problem involving the surface area of a cylinder  
geom484 Word problem involving the surface area of rectangular prisms and cylinders  
geom483 Word problem involving the surface area of rectangular prisms and pyramids  
geom354 Volume of a rectangular prism made of unit cubes  
geom311 Volume of a rectangular prism  
geom555 Distinguishing between surface area and volume  
geom518 Volume of a solid made of cubes with unit fraction edge lengths

geom535 Volume of a rectangular prism with fractional edge lengths  
 geom865 Measuring the net of a solid to find surface area or volume  
 geom382 Volume of an oblique rectangular prism  
 alge617 Writing equivalent expressions for the volume of a rectangular prism  
 geom565 Finding the side length of a cube given its volume  
 geom571 Word problem involving the volume of a rectangular prism  
 geom558 Word problem involving the rate of filling or emptying a rectangular prism  
 geom386 Computations involving density, mass, and volume  
 geom387 Word problem on density involving the volume of a rectangular solid  
 geom505 Volume of a piecewise rectangular prism  
 geom090 Volume of a triangular prism  
 geom572 Word problem involving the volume of a triangular prism  
 geom035 Volume of a cylinder  
 geom385 Informal argument for the formula of the volume of a cylinder  
 geom383 Volume of an oblique cylinder  
 geom573 Word problem involving the volume of a cylinder  
 geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom388 Word problem on density involving the volume of a cylindrical solid  
 geom384 Using cross sections to identify solids with the same volume  
 geom133 Ratio of volumes  
 geom033 Volume of a pyramid  
 geom637 Relating the volumes of a rectangular prism and a rectangular pyramid  
 geom638 Relating the volumes of a triangular prism and a triangular pyramid  
 geom622 Volume of a cone  
 geom086 Volume of a cone: Exact answers in terms of pi  
 geom654 Informal argument for the formula of the volume of a cone  
 geom639 Relating the volumes of a cylinder and a cone  
 geom575 Word problem involving the volume of a cone  
 geom842 Surface area of a sphere  
 geom841 Volume of a sphere  
 geom574 Word problem involving the volume of a sphere  
 geom488 Identifying similar solids  
 geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids  
 geom489 Computing side length, surface area, and volume for similar solids  
 geom490 Word problem involving volumes of similar solids

### Circles

geom464 Identifying chords, secants, and tangents of a circle  
 geom848 Tangents of a circle: Problem type 1  
 geom849 Tangents of a circle: Problem type 2  
 geom470 Constructing a tangent of a circle  
 geom465 Naming and finding measures of central angles, inscribed angles, and arcs of a circle  
 geom467 Applying properties of radii, diameters, and chords  
 geom814 Angle measure in a circle graph  
 geom466 Arc length  
 geom805 Arc length and area of a sector of a circle  
 geom653 Computing ratios of arc lengths to radii and describing the result  
 pcalc002 Converting between degree and radian measure: Problem type 1  
 geom468 Central angles and inscribed angles of a circle  
 geom469 Central angles and angles involving chords and tangents of a circle  
 geom666 Inscribed angles in relation to a diameter or a polygon inscribed in a circle  
 geom667 Inscribed angles and angles involving chords and tangents of a circle  
 geom492 Establishing facts about a quadrilateral inscribed in a circle  
 geom312 Inscribing an equilateral triangle or a regular hexagon in a circle  
 geom313 Inscribing a square in a circle  
 geom314 Inscribing a circle in a triangle  
 geom315 Circumscribing a circle about a triangle  
 geom567 Angles of intersecting secants and tangents  
 geom568 Lengths of chords, secants, and tangents



geom496 Identifying the center and radius to graph a circle given its equation in standard form  
 alge094 Completing the square  
 geom497 Identifying the center and radius to graph a circle given its equation in general form: Basic  
 geom668 Identifying the center and radius to graph a circle given its equation in general form: Advanced  
 geom499 Writing the equation of a circle centered at the origin given its radius or a point on the circle  
 geom495 Writing an equation of a circle and identifying points that lie on the circle  
 geom498 Writing an equation of a circle given its center and radius or diameter  
 geom493 Deriving the equation of a circle using the Pythagorean Theorem  
 pcalc065 Writing an equation of a circle given its center and a point on the circle  
 pcalc066 Writing an equation of a circle given the endpoints of a diameter  
 alge954 Graphing a parabola of the form  $y = ax^2$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 alge974 Finding the vertex, x-intercepts, and axis of symmetry from the graph of a parabola  
 pcalc566 Graphing a parabola of the form  $y^2 = ax$  or  $x^2 = ay$   
 geom494 Deriving the equation of a parabola given its focus and directrix

### Probability

mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 pcalc809 Introduction to permutations and combinations  
 pcalc810 Permutations and combinations: Problem type 1  
 pcalc089 Permutations and combinations: Problem type 2  
 stat790 Permutations, combinations, and the multiplication principle for counting  
 mstat099 Determining a sample space and outcomes for a simple event  
 mstat100 Determining a sample space and outcomes for a compound event  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat046 Experimental and theoretical probability  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat116 Probabilities of a permutation and a combination  
 mstat048 Odds of an event  
 mstat011 Area as probability  
 mstat085 Identifying outcomes in a random number table used to simulate a compound event  
 mstat086 Using a random number table to simulate a compound event  
 mstat047 Introduction to expectation  
 mstat114 Using a random number table to make a fair decision  
 mstat097 Constructing a two-way frequency table: Basic  
 mstat098 Constructing a two-way frequency table: Advanced  
 mstat049 Computing a percentage from a table of values  
 stat020 Calculating relative frequencies in a contingency table  
 mstat019 Identifying independent events given descriptions of experiments  
 stat850 Probability of independent events  
 stat851 Probability of dependent events  
 stat117 Probabilities of draws with replacement  
 stat118 Probabilities of draws without replacement  
 mstat115 Determining outcomes for compound events and complements of events  
 mstat110 Using a Venn diagram to understand the multiplication rule for probability  
 mstat107 Outcomes and event probability: Conditional probability  
 mstat104 Identifying independent events given values of probabilities  
 mstat105 Computing conditional probability using a two-way frequency table  
 mstat106 Computing conditional probability to make an inference using a two-way frequency table  
 mstat118 Conditional probability: Basic  
 mstat109 Using a Venn diagram to understand the addition rule for probability

mstat108 Outcomes and event probability: Addition rule  
 mstat032 Probability of the union of two events  
 mstat117 Probability of intersection or union: Word problems

## B.97 CC Algebra 2 Tutorial Lab (Intervention)

### Arithmetic Readiness

arith067 Simplifying a fraction  
 arith212 Equivalent fractions  
 arith711 Division involving zero  
 arith451 Word problem on unit rates associated with ratios of whole numbers: Whole number answers  
 arith070 Least common multiple of 2 numbers  
 arith804 Least common multiple of 3 numbers  
 arith801 Finding the LCD of two fractions  
 arith664 Introduction to addition or subtraction of fractions with different denominators  
 arith230 Addition or subtraction of fractions with different denominators  
 arith803 Addition and subtraction of 3 fractions with different denominators  
 arith079 Product of a unit fraction and a whole number  
 arith086 Product of a fraction and a whole number: Problem type 1  
 arith053 Fraction multiplication  
 arith812 Product of a fraction and a whole number: Problem type 2  
 arith813 Multiplication of 3 fractions  
 arith088 The reciprocal of a number  
 arith694 Division involving a whole number and a fraction  
 arith022 Fraction division  
 arith695 Complex fraction without variables: Problem type 1  
 arith015 Writing an improper fraction as a mixed number  
 arith619 Writing a mixed number as an improper fraction  
 arith808 Addition of mixed numbers with different denominators and carry  
 arith809 Subtraction of mixed numbers with different denominators and borrowing  
 arith807 Addition and subtraction of 3 mixed numbers with different denominators  
 arith815 Mixed number multiplication  
 arith816 Multiplication of a mixed number and a whole number  
 arith068 Mixed number division  
 arith110 Decimal place value: Tenths and hundredths  
 arith221 Rounding decimals  
 arith687 Fractional position on a number line  
 arith092 Using a common denominator to order fractions  
 arith830 Reading decimal position on a number line: Hundredths  
 arith129 Introduction to ordering decimals  
 arith608 Ordering decimals  
 arith733 Using a calculator to convert a fraction to a rounded decimal  
 arith609 Ordering fractions and decimals  
 arith624 Addition of aligned decimals  
 arith735 Decimal subtraction: Basic  
 arith736 Decimal subtraction: Advanced  
 arith739 Introduction to decimal multiplication  
 arith017 Multiplication of a decimal by a whole number  
 arith055 Decimal multiplication: Problem type 1  
 arith082 Multiplication of a decimal by a power of ten  
 arith081 Division of a decimal by a whole number  
 arith083 Division of a decimal by a power of ten  
 arith823 Writing ratios using different notations  
 arith663 Writing ratios for real-world situations  
 arith450 Identifying statements that describe a ratio  
 arith824 Simplifying a ratio of whole numbers: Problem type 1  
 arith825 Simplifying a ratio of decimals

arith827 Finding a unit price  
 arith455 Using tables to compare ratios  
 arith828 Computing unit prices to find the better buy  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 arith064 Solving a word problem on proportions using a unit rate  
 arith452 Finding missing values in a table of equivalent ratios  
 arith453 Using a table of equivalent ratios to find a missing quantity in a ratio  
 arith834 Converting between percentages and decimals  
 arith843 Using a calculator to convert a fraction to a rounded percentage  
 arith840 Finding a percentage of a whole number  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith844 Finding a percentage of a whole number without a calculator: Advanced  
 arith845 Finding a percentage of a total amount: Real-world situations  
 arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount  
 arith857 Estimating a tip without a calculator  
 arith686 Writing a ratio as a percentage  
 arith069 Writing a ratio as a percentage without a calculator  
 arith850 Finding the rate of a tax or commission  
 unit005 U.S. Customary unit conversion with whole number values  
 mstat035 Conversions involving measurements in feet and inches  
 mstat036 Adding measurements in feet and inches  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit012 Time unit conversion with whole number values  
 arith826 Simplifying a ratio of whole numbers: Problem type 2  
 unit034 Converting between metric and U.S. Customary unit systems

### Real Numbers

alge286 Plotting integers on a number line  
 arith691 Ordering integers  
 arith403 Finding opposites of integers  
 arith667 Plotting fractions on a number line  
 arith605 Plotting rational numbers on a number line  
 arith016 Square root of a perfect square  
 arith763 Using a calculator to approximate a square root  
 arith515 Approximating the location of irrational numbers on a number line  
 arith712 Ordering real numbers  
 arith071 Absolute value of a number  
 arith412 Finding all numbers with a given absolute value  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2  
 arith690 Integer subtraction: Problem type 3  
 arith754 Addition and subtraction with 3 integers  
 arith231 Integer multiplication and division  
 arith800 Multiplication of 3 or 4 integers  
 arith116 Signed fraction addition or subtraction: Basic  
 arith864 Signed fraction subtraction involving double negation  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith811 Addition and subtraction of 3 fractions involving signs  
 arith822 Signed fraction multiplication: Basic  
 arith105 Signed fraction multiplication: Advanced  
 arith814 Signed fraction division  
 arith117 Signed decimal addition and subtraction  
 arith234 Signed decimal addition and subtraction with 3 numbers

arith750 Signed decimal multiplication  
arith751 Signed decimal division  
arith440 Operations with absolute value: Problem type 1  
arith104 Operations with absolute value: Problem type 2  
alge694 Computing the distance between two integers on a number line  
arith233 Introduction to exponents  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
arith821 Exponents and fractions  
arith859 Order of operations with fractions: Problem type 1  
arith860 Order of operations with fractions: Problem type 2  
arith861 Order of operations with fractions: Problem type 3  
arith753 Squaring decimal bases: Products greater than 0.1  
arith720 Order of operations with decimals: Problem type 1  
arith746 Order of operations with decimals: Problem type 2  
arith747 Order of operations with decimals: Problem type 3  
arith702 Exponents and integers: Problem type 1  
arith703 Exponents and integers: Problem type 2  
arith704 Exponents and signed fractions  
arith118 Order of operations with integers  
arith600 Order of operations with integers and exponents  
alge284 Evaluating an algebraic expression: Whole number addition or subtraction  
alge683 Evaluating an algebraic expression: Whole number multiplication or division  
alge285 Evaluating an algebraic expression: Whole numbers with two operations  
alge649 Evaluating a formula  
alge648 Evaluating an algebraic expression: Whole numbers with one operation and an exponent  
alge832 Evaluating an algebraic expression: Whole number operations and exponents  
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
alge004 Evaluating a quadratic expression: Integers  
mstat065 Converting between temperatures in Fahrenheit and Celsius  
alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
alge001 Identifying numbers as integers or non-integers  
arith513 Identifying rational decimal numbers  
arith432 Identifying true statements about rational and irrational numbers  
alge002 Identifying numbers as rational or irrational  
alge700 Combining like terms: Whole number coefficients  
alge432 Introduction to adding fractions with variables and common denominators  
alge607 Combining like terms: Integer coefficients  
alge187 Properties of addition  
alge666 Combining like terms: Fractional coefficients  
alge665 Combining like terms: Decimal coefficients  
alge310 Multiplying a constant and a linear monomial  
alge606 Distributive property: Whole number coefficients  
alge604 Distributive property: Integer coefficients  
alge610 Distributive property: Fractional coefficients  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith516 Greatest common factor of 3 numbers  
alge605 Factoring a linear binomial  
alge612 Identifying parts in an algebraic expression  
alge613 Identifying equivalent algebraic expressions  
alge188 Properties of real numbers  
alge608 Using distribution and combining like terms to simplify: Univariate  
alge667 Identifying properties used to simplify an algebraic expression  
alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
alge293 Combining like terms in a quadratic expression

alge650 Identifying solutions to a one-step linear equation: Problem type 1  
alge651 Identifying solutions to a one-step linear equation: Problem type 2  
alge009 Additive property of equality with whole numbers  
alge800 Additive property of equality with decimals  
alge010 Additive property of equality with integers  
alge836 Additive property of equality with signed fractions  
alge008 Multiplicative property of equality with whole numbers  
alge646 Multiplicative property of equality with whole numbers: Fractional answers  
alge820 Multiplicative property of equality with fractions  
alge825 Multiplicative property of equality with decimals  
alge797 Multiplicative property of equality with integers  
alge012 Multiplicative property of equality with signed fractions  
geom151 Measuring an angle with the protractor  
geom300 Perimeter of a square or a rectangle  
geom221 Finding the missing length in a figure  
alge615 Writing algebraic expressions for the perimeter of a figure  
geom078 Sides of polygons having the same perimeter  
geom019 Area of a square or a rectangle  
geom350 Distinguishing between the area and perimeter of a rectangle  
geom340 Area of a piecewise rectangular figure  
geom562 Area between two rectangles  
alge616 Writing algebraic expressions for the area of a figure  
geom410 Word problem involving the area of a square or a rectangle  
geom142 Word problem involving the area between two rectangles  
geom022 Area of a parallelogram  
geom801 Area of a triangle  
geom023 Area of a trapezoid  
geom016 Circumference of a circle  
geom301 Perimeter involving rectangles and circles  
geom026 Area of a circle  
geom802 Circumference and area of a circle  
geom477 Circumference and area of a circle: Exact answers in terms of pi  
geom570 Distinguishing between the area and circumference of a circle  
geom302 Area involving rectangles and circles  
geom563 Area between two concentric circles  
geom036 Word problem involving the area between two concentric circles  
geom214 Area involving inscribed figures  
geom311 Volume of a rectangular prism  
geom571 Word problem involving the volume of a rectangular prism  
geom558 Word problem involving the rate of filling or emptying a rectangular prism  
geom090 Volume of a triangular prism  
geom035 Volume of a cylinder  
geom573 Word problem involving the volume of a cylinder  
geom092 Word problem involving the rate of filling or emptying a cylinder  
geom033 Volume of a pyramid  
geom622 Volume of a cone  
geom086 Volume of a cone: Exact answers in terms of pi  
geom841 Volume of a sphere  
geom031 Surface area of a cube or a rectangular prism  
geom555 Distinguishing between surface area and volume  
geom091 Surface area of a triangular prism  
geom621 Surface area of a cylinder  
geom034 Surface area of a cylinder: Exact answers in terms of pi  
geom842 Surface area of a sphere

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alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
alge803 Using two steps to solve an equation with whole numbers  
alge266 Additive property of equality with a negative coefficient

alge006 Solving a two-step equation with integers  
 alge815 Introduction to using substitution to solve a linear equation  
 alge200 Solving an equation to find the value of an expression  
 alge920 Introduction to solving an equation with parentheses  
 alge837 Solving a multi-step equation given in fractional form  
 alge986 Identifying properties used to solve a linear equation  
 alge824 Solving a two-step equation with signed decimals  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge611 Introduction to solving a linear equation with a variable on each side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge614 Clearing fractions in an equation  
 alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
 alge208 Solving a two-step equation with signed fractions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
 alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
 alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
 alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
 alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
 alge518 Solving for a variable inside parentheses in terms of other variables  
 alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
 alge603 Introduction to solving an absolute value equation  
 alge864 Solving an absolute value equation: Problem type 1  
 alge865 Solving an absolute value equation: Problem type 2  
 alge866 Solving an absolute value equation: Problem type 3  
 alge867 Solving an absolute value equation: Problem type 4  
 alge733 Writing a one-step expression for a real-world situation  
 alge831 Translating a phrase into a one-step expression  
 alge291 Translating a phrase into a two-step expression  
 alge016 Translating a sentence into a one-step equation  
 alge841 Translating a sentence into a multi-step equation  
 arith504 Writing an equation to represent a proportional relationship  
 alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
 alge671 Choosing stories that can be represented by given one-step equations  
 alge628 Writing an equation of the form  $Ax + B = C$  to solve a word problem  
 alge618 Comparing arithmetic and algebraic solutions to a word problem  
 alge672 Choosing stories that can be represented by given two-step equations  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge629 Writing an equation of the form  $A(x + B) = C$  to solve a word problem  
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge673 Writing an equation to represent a real-world problem: Variable on both sides  
 alge674 Writing and solving a real-world problem given an equation with the variable on both sides  
 alge730 Writing a multi-step equation for a real-world situation  
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge792 Solving a word problem with three unknowns using a linear equation  
 alge842 Solving a word problem involving consecutive integers  
 alge794 Solving a value mixture problem using a linear equation  
 alge218 Solving a word problem involving rates and time conversion  
 alge823 Solving a one-step word problem using the formula  $d = rt$

alge796 Solving a distance, rate, time problem using a linear equation  
unit035 Converting between compound units: Basic  
unit036 Converting between compound units: Advanced  
arith514 Converting a repeating decimal to a fraction  
alge819 Solving a proportion of the form  $x/a=b/c$ : Basic  
alge272 Solving a proportion of the form  $x/a = b/c$   
alge840 Solving a proportion of the form  $(x+a)\div b = c\div d$   
alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
alge658 Introduction to solving a rational equation  
alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
arith610 Word problem on proportions: Problem type 1  
arith611 Word problem on proportions: Problem type 2  
arith862 Applying the percent equation: Problem type 1  
arith863 Applying the percent equation: Problem type 2  
arith849 Finding the total amount given the percentage of a partial amount  
arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
arith851 Finding the final amount given the original amount and a percentage increase or decrease  
arith847 Finding the sale price given the original price and percent discount  
arith074 Finding the sale price without a calculator given the original price and percent discount  
arith848 Finding the total cost including tax or markup  
arith855 Finding the original amount given the result of a percentage increase or decrease  
arith031 Finding the original price given the sale price and percent discount  
arith858 Finding the percentage increase or decrease: Basic  
arith225 Finding the percentage increase or decrease: Advanced  
unit052 Finding the absolute error and percent error of a measurement  
arith854 Computing a percent mixture  
alge795 Solving a percent mixture problem using a linear equation  
arith232 Finding simple interest without a calculator  
arith853 Introduction to compound interest  
geom564 Finding side lengths of squares given an area and a perimeter  
geom648 Finding side lengths of rectangles given one dimension and an area or a perimeter  
geom444 Word problem on optimizing an area or perimeter  
geom561 Finding the dimensions of a rectangle given its perimeter and a relationship between sides  
geom143 Finding the perimeter or area of a rectangle given one of these values  
geom817 Finding a side length given the perimeter and side lengths with variables  
geom838 Circumference ratios  
geom039 Finding supplementary and complementary angles  
geom500 Solving equations involving vertical angles and linear pairs  
geom001 Finding an angle measure of a triangle given two angles  
geom628 Finding angle measures of a triangle given angles with variables  
geom629 Finding angle measures of an isosceles triangle given angles with variables  
geom037 Similar polygons  
geom038 Similar right triangles  
geom337 Indirect measurement  
alge015 Translating a sentence by using an inequality symbol  
alge845 Translating a sentence into a one-step inequality  
alge653 Introduction to identifying solutions to an inequality  
alge748 Writing an inequality for a real-world situation  
alge017 Graphing a linear inequality on the number line  
alge822 Writing an inequality given a graph on the number line  
alge186 Translating a sentence into a compound inequality  
alge166 Graphing a compound inequality on the number line  
alge847 Writing a compound inequality given a graph on the number line  
set001 Set builder notation  
set002 Union and intersection of finite sets  
alge652 Identifying solutions to a one-step linear inequality  
alge848 Additive property of inequality with whole numbers  
alge849 Additive property of inequality with integers  
alge852 Additive property of inequality with signed fractions  
alge853 Additive property of inequality with signed decimals  
alge809 Multiplicative property of inequality with whole numbers  
alge854 Multiplicative property of inequality with integers



alge964 Multiplicative property of inequality with signed fractions  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge636 Solving a two-step linear inequality with whole numbers  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge860 Solving inequalities with no solution or all real numbers as solutions  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge861 Solving a compound linear inequality: Graph solution, advanced  
 alge621 Solving a word problem using a one-step linear inequality  
 alge846 Translating a sentence into a multi-step inequality  
 alge619 Solving a word problem using a two-step linear inequality and describing the solution  
 alge623 Solving a word problem using a two-step linear inequality  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
 alge868 Solving an absolute value inequality: Problem type 1  
 alge943 Writing an absolute value inequality given a graph on the number line  
 alge869 Solving an absolute value inequality: Problem type 2  
 alge870 Solving an absolute value inequality: Problem type 3  
 alge871 Solving an absolute value inequality: Problem type 4  
 alge872 Solving an absolute value inequality: Problem type 5

### Graphing and Functions

alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge693 Plotting a point in the coordinate plane: Mixed number coordinates  
 arith404 Naming the quadrant or axis of a point given its graph  
 arith405 Naming the quadrant or axis of a point given its coordinates  
 arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
 alge695 Finding distances between points that share a common coordinate given the graph  
 alge696 Finding distances between points that share a common coordinate given their coordinates  
 alge282 Function tables with two-step rules  
 alge850 Table for a linear equation  
 fun005 Writing a function rule given a table of ordered pairs: One-step rules  
 fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
 arith454 Making a table and plotting points given a unit rate  
 alge873 Identifying solutions to a linear equation in two variables  
 alge066 Finding a solution to a linear equation in two variables  
 alge877 Graphing a linear equation of the form  $y = mx$   
 alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
 alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
 alge880 Graphing a line given its equation in standard form  
 alge198 Graphing a vertical or horizontal line  
 alge884 Finding x- and y-intercepts given the graph of a line on a grid  
 alge924 Finding x- and y-intercepts of a line given the equation: Basic  
 alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
 alge197 Graphing a line given its x- and y-intercepts  
 alge881 Graphing a line by first finding its x- and y-intercepts  
 mstat007 Interpreting a line graph  
 alge575 Finding slope given the graph of a line in quadrant 1 that models a real-world situation  
 alge875 Classifying slopes given graphs of lines  
 alge886 Finding slope given the graph of a line on a grid  
 alge887 Finding slope given two points on the line  
 alge885 Finding the slope of horizontal and vertical lines  
 alge888 Finding the coordinate that yields a given slope  
 alge259 Graphing a line given its slope and y-intercept

alge196 Graphing a line through a given point with a given slope  
alge625 Identifying linear equations: Basic  
alge876 Identifying linear equations: Advanced  
alge874 Identifying linear functions given ordered pairs  
alge891 Rewriting a linear equation in the form  $Ax + By = C$   
alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
alge882 Graphing a line by first finding its slope and y-intercept  
alge258 Writing an equation of a line given its slope and y-intercept  
alge892 Writing an equation and graphing a line given its slope and y-intercept  
alge314 Finding the slope, y-intercept, and equation for a linear function given a table of values  
alge893 Writing an equation in slope-intercept form given the slope and a point  
alge318 Finding the slope and a point on a line given its equation in point-slope form  
alge883 Graphing a line given its equation in point-slope form  
alge894 Writing an equation in point-slope form given the slope and a point  
alge313 Writing an equation in standard form given the slope and a point  
alge070 Writing an equation of a line given the y-intercept and another point  
alge072 Writing the equation of the line through two given points  
alge073 Writing the equations of vertical and horizontal lines through a given point  
alge322 Comparing linear functions to the parent function  $y = x$   
geom358 Identifying parallel and perpendicular lines  
geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
alge895 Identifying parallel and perpendicular lines from equations  
geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
geom462 Identifying parallel and perpendicular lines from coordinates  
alge630 Finding outputs of a one-step function that models a real-world situation: Two variable equation  
alge632 Finding outputs of a two-step function with decimals that models a real-world situation: Two variable equation  
alge633 Finding inputs and outputs of a two-step function that models a real-world situation: Two variable equation  
alge699 Comparing proportional relationships given in different forms  
alge655 Writing and evaluating a function that models a real-world situation: Basic  
alge897 Writing and evaluating a function that models a real-world situation: Advanced  
alge654 Graphing ordered pairs and writing an equation from a table of values in context  
alge656 Writing an equation and drawing its graph to model a real-world situation: Basic  
alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
alge817 Finding the initial amount and rate of change given a table for a linear function  
alge818 Finding the initial amount and rate of change given a graph of a linear function  
alge992 Combining functions to write a new function that models a real-world situation  
alge987 Comparing properties of linear functions given in different forms  
alge989 Interpreting the parameters of a linear function that models a real-world situation  
alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
alge806 Application problem with a linear function: Finding a coordinate given two points  
alge670 Identifying independent and dependent quantities from tables and graphs  
mstat052 Identifying independent and dependent variables from equations or real-world situations  
alge991 Solving a linear equation by graphing  
mstat094 Constructing a scatter plot  
mstat030 Sketching the line of best fit  
mstat023 Scatter plots and correlation  
mstat068 Predictions from the line of best fit  
mstat067 Approximating the equation of a line of best fit and making predictions  
mstat069 Computing residuals  
mstat070 Interpreting residual plots  
mstat093 Classifying linear and nonlinear relationships from scatter plots  
mstat071 Linear relationship and the correlation coefficient  
mstat096 Identifying outliers and clustering in scatter plots  
mstat074 Identifying correlation and causation  
alge982 Identifying direct variation equations  
alge938 Identifying direct variation from ordered pairs and writing equations  
alge904 Writing a direct variation equation  
alge175 Word problem on direct variation

alge828 Interpreting direct variation from a graph  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun016 Domain and range from ordered pairs  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 fun030 Evaluating a piecewise-defined function  
 alge294 Finding outputs of a one-step function that models a real-world situation: Function notation  
 alge295 Finding outputs of a two-step function with decimals that models a real-world situation: Function notation  
 alge296 Finding inputs and outputs of a two-step function that models a real-world situation: Function notation  
 alge990 Domain and range of a linear function that models a real-world situation  
 fun026 Finding an output of a function from its graph  
 pcalc761 Finding inputs and outputs of a function from its graph  
 fun007 Domain and range from the graph of a discrete relation  
 alge312 Finding domain and range from a linear graph in context  
 pcalc750 Finding intercepts of a nonlinear function given its graph  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 pcalc752 Finding local maxima and minima of a function given the graph  
 mstat018 Choosing a graph to fit a narrative: Basic  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge896 Graphing an integer function and finding its range for a given domain  
 alge570 Graphing a function of the form  $f(x) = ax + b$ : Integer slope  
 alge571 Graphing a function of the form  $f(x) = ax + b$ : Fractional slope  
 alge913 Graphing an absolute value equation of the form  $y = A - |x - h| + k$   
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge954 Graphing a parabola of the form  $y = ax^2$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge572 Graphing a function of the form  $f(x) = ax^2$   
 alge573 Graphing a function of the form  $f(x) = ax^2 + c$   
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 fun031 Graphing a piecewise-defined function: Problem type 1  
 alge997 Finding the average rate of change of a function given its equation  
 alge998 Finding the average rate of change of a function given its graph  
 alge953 Translating the graph of a parabola: One step  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge898 Translating the graph of an absolute value function: One step  
 alge899 Translating the graph of an absolute value function: Two steps  
 alge901 How the leading coefficient affects the graph of an absolute value function  
 alge185 Writing an equation for a function after a vertical translation  
 pcalc769 Translating the graph of a function: One step  
 pcalc770 Translating the graph of a function: Two steps  
 pcalc771 Transforming the graph of a function by reflecting over an axis  
 pcalc772 Transforming the graph of a function by shrinking or stretching  
 pcalc773 Transforming the graph of a function using more than one transformation  
 fun020 Writing an equation for a function after a vertical and horizontal translation

### Systems of Linear Equations and Inequalities

alge914 Identifying solutions to a system of linear equations  
 alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations  
 pcalc820 Using a graphing calculator to solve a system of linear equations: Basic  
 pcalc821 Using a graphing calculator to solve a system of linear equations: Advanced  
 alge317 Writing a system of linear equations given its graph  
 alge816 Solving a system of linear equations of the form  $y = mx + b$   
 alge751 Solving a system of linear equations using substitution

alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge916 Solving a system of linear equations with fractional coefficients  
 alge917 Solving a system of linear equations with decimal coefficients  
 alge634 Solving systems of linear equations with 0, 1, or infinitely many solutions  
 alge988 Identifying the operations used to create equivalent systems of equations  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge315 Writing an inequality given its graph in the plane: Horizontal or vertical boundary line  
 alge316 Writing an inequality given its graph in the plane: Slanted boundary line  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced  
 alge922 Graphing a system of three linear inequalities  
 alge729 Writing a multi-step inequality for a real-world situation  
 pcalc093 Solving a word problem using a system of linear inequalities: Problem type 1  
 pcalc037 Scalar multiplication of a matrix  
 pcalc038 Addition or subtraction of matrices  
 pcalc740 Linear combination of matrices  
 pcalc712 Gauss-Jordan elimination with a 2x2 matrix

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alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge311 Product rule with positive exponents: Univariate  
 alge030 Product rule with positive exponents: Multivariate  
 arith029 Ordering numbers with positive exponents  
 alge826 Understanding the power rules of exponents  
 alge306 Introduction to the power of a power rule of exponents  
 alge305 Introduction to the power of a product rule of exponents  
 alge307 Power rules with positive exponents: Multivariate products  
 alge308 Power rules with positive exponents: Multivariate quotients  
 alge756 Power and product rules with positive exponents  
 alge451 Simplifying a ratio of multivariate monomials: Basic  
 alge827 Introduction to the quotient rule of exponents  
 alge452 Simplifying a ratio of univariate monomials  
 alge026 Quotient of expressions involving exponents  
 alge453 Simplifying a ratio of multivariate monomials: Advanced  
 alge927 Power and quotient rules with positive exponents  
 alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 arith729 Evaluating an expression with a negative exponent: Whole number base  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge961 Introduction to the product rule with negative exponents  
 alge028 Product rule with negative exponents

alge755 Quotient rule with negative exponents: Problem type 1  
 alge926 Quotient rule with negative exponents: Problem type 2  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge928 Power and quotient rules with negative exponents: Problem type 1  
 alge929 Power and quotient rules with negative exponents: Problem type 2  
 alge757 Power, product, and quotient rules with negative exponents  
 scinot023 Introduction to scientific notation with positive exponents  
 arith036 Scientific notation with positive exponent  
 scinot024 Introduction to scientific notation with negative exponents  
 arith037 Scientific notation with negative exponent  
 scinot012 Converting between scientific notation and standard form in a real-world situation  
 scinot021 Expressing calculator notation as scientific notation  
 scinot008 Multiplying numbers written in scientific notation: Basic  
 scinot009 Multiplying numbers written in scientific notation: Advanced  
 scinot019 Multiplying numbers written in decimal form or scientific notation in a real-world situation  
 scinot010 Dividing numbers written in scientific notation: Basic  
 scinot011 Dividing numbers written in scientific notation: Advanced  
 alge971 Table for an exponential function  
 alge969 Graphing an exponential function:  $f(x) = ax$   
 alge970 Graphing an exponential function:  $f(x) = a(b)^x$   
 alge712 Graphing an exponential function and its asymptote:  $f(x) = a(b)^x$   
 alge321 Finding domain and range from the graph of an exponential function  
 pcalc922 Translating the graph of an exponential function  
 alge830 Evaluating an exponential function that models a real-world situation  
 alge301 Solving an exponential equation by finding common bases: Linear exponents  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest  
 alge966 Finding the initial amount and rate of change given an exponential function  
 alge968 Writing an equation that models exponential growth or decay  
 alge967 Writing an exponential function rule given a table of ordered pairs  
 mstat103 Choosing an exponential model and using it to make a prediction  
 alge993 Comparing linear, polynomial, and exponential functions

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alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge932 Simplifying a sum or difference of multivariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge081 Multiplying conjugate binomials: Multivariate  
 alge032 Squaring a binomial: Univariate  
 alge068 Squaring a binomial: Multivariate  
 alge973 Multiplying binomials with negative coefficients  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge759 Dividing a polynomial by a monomial: Univariate  
 alge760 Dividing a polynomial by a monomial: Multivariate  
 alge761 Polynomial long division: Problem type 1  
 alge762 Polynomial long division: Problem type 2  
 alge763 Polynomial long division: Problem type 3  
 alge985 Closure properties of integers and polynomials

alge736 Introduction to the GCF of two monomials  
 alge930 Greatest common factor of three univariate monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge949 Factoring out a binomial from a polynomial: GCF factoring, basic  
 alge923 Factoring a univariate polynomial by grouping: Problem type 1  
 alge950 Factoring a univariate polynomial by grouping: Problem type 2  
 alge951 Factoring a multivariate polynomial by grouping: Problem type 1  
 alge952 Factoring a multivariate polynomial by grouping: Problem type 2  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge942 Factoring a quadratic in two variables with leading coefficient 1  
 alge936 Factoring out a constant before factoring a quadratic  
 alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1  
 alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
 alge941 Factoring a quadratic with leading coefficient greater than 1: Problem type 3  
 alge978 Factoring a quadratic by the ac-method  
 alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
 alge937 Factoring a quadratic with a negative leading coefficient  
 alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge945 Factoring a perfect square trinomial with leading coefficient greater than 1  
 alge946 Factoring a perfect square trinomial in two variables  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge839 Factoring a difference of squares in two variables  
 alge948 Factoring a polynomial involving a GCF and a difference of squares: Univariate  
 alge833 Factoring a polynomial involving a GCF and a difference of squares: Multivariate  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge042 Factoring with repeated use of the difference of squares formula  
 alge044 Factoring a sum or difference of two cubes

### Quadratic Functions

alge681 Solving an equation written in factored form  
 alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge323 Finding the zeros of a quadratic function given its equation  
 alge163 Writing a quadratic equation given the roots and the leading coefficient  
 alge703 Solving a word problem using a quadratic equation with rational roots  
 arith601 Square root of a rational perfect square  
 arith760 Square roots of perfect squares with signs  
 arith093 Simplifying the square root of a whole number less than 100  
 arith762 Simplifying the square root of a whole number greater than 100  
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 alge958 Solving a quadratic equation using the square root property: Decimal answers, basic  
 alge959 Solving a quadratic equation using the square root property: Decimal answers, advanced  
 alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
 alge227 Solving a quadratic equation using the square root property: Exact answers, advanced  
 alge094 Completing the square  
 alge960 Solving a quadratic equation by completing the square: Decimal answers  
 alge780 Solving a quadratic equation by completing the square: Exact answers  
 alge095 Applying the quadratic formula: Exact answers  
 alge963 Applying the quadratic formula: Decimal answers  
 alge214 Discriminant of a quadratic equation  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge974 Finding the vertex, x-intercepts, and axis of symmetry from the graph of a parabola  
 alge569 Graphing a parabola of the form  $y = x^2 + bx + c$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients



pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients  
 alge320 Writing a quadratic function given its zeros  
 alge277 Finding the x-intercept(s) and the vertex of a parabola  
 pcalc714 Using a graphing calculator to find the zeros of a quadratic function  
 pcalc793 Using a graphing calculator to find the x-intercept(s) and vertex of a quadratic function  
 alge319 Rewriting a quadratic function in standard form  
 pcalc774 Rewriting a quadratic function to find the vertex of its graph  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge975 Domain and range from the graph of a parabola  
 alge976 Range of a quadratic function  
 pcalc680 Writing the equation of a quadratic function given its graph  
 alge957 Solving a quadratic equation by graphing  
 alge996 Comparing properties of quadratic functions given in different forms  
 alge702 Classifying the graph of a function  
 mstat102 Choosing a quadratic model and using it to make a prediction  
 pcalc748 Graphing a quadratic inequality: Problem type 1  
 pcalc749 Graphing a quadratic inequality: Problem type 2  
 alge994 Graphically solving a system of linear and quadratic equations  
 alge995 Solving a system of linear and quadratic equations  
 pcalc716 Using a graphing calculator to solve a system of linear and quadratic equations: Basic  
 fun019 Sum, difference, and product of two functions  
 alge716 Introduction to the composition of two functions  
 fun022 Composition of two functions: Basic  
 fun011 Horizontal line test  
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 pcalc114 Even and odd functions: Problem type 1

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alge413 Finding all square roots of a number  
 arith602 Estimating a square root  
 arith761 Square roots of integers raised to even exponents  
 alge415 Introduction to simplifying a radical expression with an even exponent  
 alge264 Square root of a perfect square monomial  
 alge537 Using absolute value to simplify square roots of perfect square monomials  
 arith094 Cube root of an integer  
 alge549 Finding nth roots of perfect nth powers with signs  
 arith768 Finding the nth root of a perfect nth power fraction  
 alge550 Finding the nth root of a perfect nth power monomial  
 alge539 Table for a square root function  
 alge565 Domain of a square root function: Basic  
 alge566 Domain of a square root function: Advanced  
 alge543 Graphing a square root function: Problem type 1  
 alge544 Graphing a square root function: Problem type 2  
 alge545 Graphing a square root function: Problem type 3  
 alge812 Converting between radical form and exponent form  
 alge560 Rational exponents: Unit fraction exponents and whole number bases  
 alge561 Rational exponents: Unit fraction exponents and bases involving signs  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge558 Rational exponents: Product rule  
 alge559 Rational exponents: Quotient rule  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge562 Rational exponents: Power of a power rule  
 alge249 Rational exponents: Powers of powers with negative exponents  
 alge080 Simplifying a radical expression with an even exponent  
 alge520 Introduction to simplifying a radical expression with an odd exponent  
 alge521 Simplifying a radical expression with an odd exponent  
 alge275 Simplifying a radical expression with two variables



alge273 Simplifying a higher root of a whole number  
 alge551 Introduction to simplifying a higher radical expression  
 alge552 Simplifying a higher radical expression: Univariate  
 alge811 Simplifying a higher radical expression: Multivariate  
 arith767 Introduction to square root addition or subtraction  
 arith032 Square root addition or subtraction  
 alge533 Square root addition or subtraction with three terms  
 arith764 Introduction to square root multiplication  
 arith765 Square root multiplication: Basic  
 arith039 Square root multiplication: Advanced  
 alge531 Introduction to simplifying a sum or difference of radical expressions: Univariate  
 alge532 Simplifying a sum or difference of radical expressions: Univariate  
 alge084 Simplifying a sum or difference of radical expressions: Multivariate  
 alge522 Introduction to simplifying a product of radical expressions: Univariate  
 alge523 Simplifying a product of radical expressions: Univariate  
 alge640 Simplifying a product of radical expressions: Multivariate  
 alge556 Introduction to simplifying a product of higher roots  
 alge557 Simplifying a product of higher radical expressions  
 alge525 Introduction to simplifying a product involving square roots using the distributive property  
 alge526 Simplifying a product involving square roots using the distributive property: Basic  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge984 Classifying sums and products as rational or irrational  
 arith766 Simplifying a quotient of square roots  
 alge527 Rationalizing a denominator: Quotient involving square roots  
 alge530 Simplifying a quotient involving a sum or difference with a square root  
 alge528 Rationalizing a denominator: Square root of a fraction  
 alge529 Rationalizing a denominator: Quotient involving a monomial  
 alge534 Rationalizing a denominator using conjugates: Integer numerator  
 alge535 Rationalizing a denominator using conjugates: Square root in numerator  
 alge400 Introduction to solving a radical equation  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge402 Solving a radical equation that simplifies to a linear equation: One radical, advanced  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge403 Solving a radical equation that simplifies to a quadratic equation: One radical, basic  
 alge404 Solving a radical equation that simplifies to a quadratic equation: One radical, advanced  
 alge411 Solving a radical equation with a quadratic expression under the radical  
 alge405 Solving a radical equation with two radicals that simplifies to  $\sqrt{x} = a$   
 alge182 Solving a radical equation that simplifies to a quadratic equation: Two radicals  
 alge412 Algebraic symbol manipulation with radicals  
 alge542 Word problem involving radical equations: Basic  
 alge409 Word problem involving radical equations: Advanced  
 alge698 Solving an equation of the form  $x^3 = a$  using integers  
 geom565 Finding the side length of a cube given its volume  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem  
 geom603 Identifying side lengths that give right triangles  
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alge049 Restriction on a variable in a denominator: Linear  
 alge467 Restriction on a variable in a denominator: Quadratic  
 alge468 Evaluating a rational function: Problem type 1  
 alge469 Evaluating a rational function: Problem type 2  
 pcalc682 Evaluating functions: Absolute value, rational, radical  
 alge715 Domain of a rational function: Excluded values  
 alge454 Simplifying a ratio of factored polynomials: Linear factors  
 alge455 Simplifying a ratio of factored polynomials: Factors with exponents

alge456 Simplifying a ratio of polynomials using GCF factoring  
 alge457 Simplifying a ratio of linear polynomials: 1, -1, and no simplification  
 alge458 Simplifying a ratio of polynomials by factoring a quadratic with leading coefficient 1  
 alge710 Simplifying a ratio of polynomials: Problem type 1  
 alge682 Simplifying a ratio of polynomials: Problem type 2  
 alge459 Simplifying a ratio of polynomials: Problem type 3  
 alge034 Simplifying a ratio of multivariate polynomials  
 alge053 Multiplying rational expressions involving multivariate monomials  
 alge460 Multiplying rational expressions made up of linear expressions  
 alge620 Multiplying rational expressions involving quadratics with leading coefficients of 1  
 alge461 Multiplying rational expressions involving quadratics with leading coefficients greater than 1  
 alge462 Multiplying rational expressions involving multivariate quadratics  
 alge054 Dividing rational expressions involving multivariate monomials  
 alge463 Dividing rational expressions involving linear expressions  
 alge766 Dividing rational expressions involving quadratics with leading coefficients of 1  
 alge464 Dividing rational expressions involving quadratics with leading coefficients greater than 1  
 alge465 Dividing rational expressions involving multivariate quadratics  
 alge466 Multiplication and division of 3 rational expressions  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge427 Finding the LCD of rational expressions with linear denominators: Relatively prime  
 alge428 Finding the LCD of rational expressions with linear denominators: Common factors  
 alge429 Finding the LCD of rational expressions with quadratic denominators  
 alge430 Writing equivalent rational expressions with monomial denominators  
 alge431 Writing equivalent rational expressions with polynomial denominators  
 alge304 Writing equivalent rational expressions involving opposite factors  
 alge433 Adding rational expressions with common denominators and monomial numerators  
 alge056 Adding rational expressions with common denominators and binomial numerators  
 alge434 Adding rational expressions with common denominators and GCF factoring  
 alge435 Adding rational expressions with common denominators and quadratic factoring  
 alge436 Adding rational expressions with different denominators and a single occurrence of a variable  
 alge437 Adding rational expressions with denominators  $ax$  and  $bx$ : Basic  
 alge438 Adding rational expressions with denominators  $ax$  and  $bx$ : Advanced  
 alge439 Adding rational expressions with denominators  $axn$  and  $bxm$   
 alge440 Adding rational expressions with multivariate monomial denominators: Basic  
 alge226 Adding rational expressions with multivariate monomial denominators: Advanced  
 alge441 Adding rational expressions with linear denominators without common factors: Basic  
 alge442 Adding rational expressions with linear denominators without common factors: Advanced  
 alge443 Adding rational expressions with linear denominators with common factors: Basic  
 alge444 Adding rational expressions with linear denominators with common factors: Advanced  
 alge445 Adding rational expressions with denominators  $ax-b$  and  $b-ax$   
 alge661 Adding rational expressions involving different quadratic denominators  
 alge446 Adding 3 rational expressions with different quadratic denominators  
 arith696 Complex fraction without variables: Problem type 2  
 alge470 Complex fraction involving univariate monomials  
 alge058 Complex fraction involving multivariate monomials  
 alge471 Complex fraction: GCF factoring  
 alge472 Complex fraction: Quadratic factoring  
 alge473 Complex fraction made of sums involving rational expressions: Problem type 1  
 alge474 Complex fraction made of sums involving rational expressions: Problem type 2  
 alge475 Complex fraction made of sums involving rational expressions: Problem type 3  
 alge476 Complex fraction made of sums involving rational expressions: Problem type 4  
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 alge478 Complex fraction made of sums involving rational expressions: Problem type 6  
 alge479 Complex fraction made of sums involving rational expressions: Multivariate  
 alge205 Solving a rational equation that simplifies to linear: Denominator  $x+a$   
 alge769 Solving a rational equation that simplifies to linear: Denominators  $a$ ,  $x$ , or  $ax$   
 alge421 Solving a rational equation that simplifies to linear: Denominators  $ax$  and  $bx$   
 alge422 Solving a rational equation that simplifies to linear: Like binomial denominators  
 alge206 Solving a rational equation that simplifies to linear: Unlike binomial denominators  
 alge423 Solving a rational equation that simplifies to linear: Factorable quadratic denominator  
 alge424 Solving a rational equation that simplifies to quadratic: Proportional form, basic

alge425 Solving a rational equation that simplifies to quadratic: Denominator x  
 alge212 Solving a rational equation that simplifies to quadratic: Binomial denominators, constant numerators  
 alge062 Solving a rational equation that simplifies to quadratic: Binomial denominators and numerators  
 alge426 Solving a rational equation that simplifies to quadratic: Factorable quadratic denominator  
 alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced  
 alge508 Solving for a variable in terms of other variables in a rational equation: Problem type 1  
 alge509 Solving for a variable in terms of other variables in a rational equation: Problem type 2  
 alge510 Solving for a variable in terms of other variables in a rational equation: Problem type 3  
 arith612 Word problem involving multiple rates  
 alge770 Solving a work problem using a rational equation  
 alge450 Solving a distance, rate, time problem using a rational equation  
 alge059 Ordering fractions with variables  
 alge905 Writing an inverse variation equation  
 alge903 Identifying direct and inverse variation equations  
 alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
 alge176 Word problem on inverse variation  
 alge220 Word problem on inverse proportions  
 pcalc681 Writing an equation that models variation  
 alge772 Word problem on combined variation  
 pcalc917 Finding the asymptotes of a rational function: Constant over linear  
 pcalc918 Finding the asymptotes of a rational function: Linear over linear  
 alge515 Graphing a rational function: Constant over linear  
 alge516 Graphing a rational function: Linear over linear

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alge644 Finding the first terms of an arithmetic sequence using an explicit rule  
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge908 Finding the first terms of a sequence using a recursive rule  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge910 Writing a recursive rule for an arithmetic sequence  
 alge645 Finding the first terms of a geometric sequence using an explicit rule  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge911 Writing recursive rules for arithmetic and geometric sequences  
 alge965 Identifying linear, quadratic, and exponential functions given ordered pairs  
 alge132 Distance between two points in the plane: Exact answers  
 alge324 Distance between two points in the plane: Decimal answers  
 alge191 Midpoint of a line segment in the plane  
 alge414 Finding an endpoint of a line segment given the other endpoint and the midpoint  
 pcalc566 Graphing a parabola of the form  $y^2 = ax$  or  $x^2 = ay$   
 geom494 Deriving the equation of a parabola given its focus and directrix  
 geom496 Identifying the center and radius to graph a circle given its equation in standard form  
 geom497 Identifying the center and radius to graph a circle given its equation in general form: Basic  
 geom668 Identifying the center and radius to graph a circle given its equation in general form: Advanced  
 geom499 Writing the equation of a circle centered at the origin given its radius or a point on the circle  
 geom495 Writing an equation of a circle and identifying points that lie on the circle  
 geom498 Writing an equation of a circle given its center and radius or diameter  
 geom493 Deriving the equation of a circle using the Pythagorean Theorem  
 pcalc065 Writing an equation of a circle given its center and a point on the circle  
 pcalc066 Writing an equation of a circle given the endpoints of a diameter

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mstat080 Choosing an appropriate method for gathering data: Problem type 1  
mstat081 Choosing an appropriate method for gathering data: Problem type 2  
mstat047 Introduction to expectation  
mstat097 Constructing a two-way frequency table: Basic  
mstat098 Constructing a two-way frequency table: Advanced  
mstat049 Computing a percentage from a table of values  
mstat087 Making an inference using a two-way frequency table  
stat020 Calculating relative frequencies in a contingency table  
stat805 Making a reasonable inference based on proportion statistics  
mstat037 Constructing a line plot  
mstat004 Constructing a histogram for numerical data  
mstat024 Interpreting a bar graph  
mstat044 Interpreting a double bar graph  
mstat031 Interpreting a stem-and-leaf plot  
arith856 Finding a percentage of a total amount in a circle graph  
stat801 Computations from a circle graph  
geom814 Angle measure in a circle graph  
mstat003 Mode of a data set  
mstat055 Finding the mode and range of a data set  
mstat092 Finding the mode and range from a line plot  
mstat001 Mean of a data set  
mstat077 Using a model to find the mean  
mstat091 Finding the mean of a symmetric distribution  
mstat079 Finding sample size and comparing samples for estimating the mean  
mstat089 Computations involving the mean, sample size, and sum of a data set  
stat803 Finding the value for a new score that will yield a given mean  
stat802 Rejecting unreasonable claims based on average statistics  
mstat066 Weighted mean  
mstat028 Mean and median of a data set  
mstat029 How changing a value affects the mean and median  
mstat095 Finding outliers in a data set  
mstat053 Choosing the best measure to describe data  
stat009 Percentiles  
mstat078 Comparing measures of center and variation  
mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
mstat072 Five-number summary and interquartile range  
mstat006 Constructing a box-and-whisker plot  
mstat073 Using box-and-whisker plots to compare data sets  
mstat090 Comparing sample means  
mstat082 Computing mean absolute deviation from a list of numerical values  
mstat042 Interpreting a Venn diagram of 2 sets  
mstat043 Interpreting a Venn diagram of 3 sets  
mstat041 Interpreting a tree diagram  
mstat040 Introduction to the counting principle  
mstat015 Counting principle  
pcalc082 Factorial expressions  
mstat017 Computing permutations and combinations  
mstat008 Word problem involving permutations  
mstat009 Word problem involving combinations  
stat790 Permutations, combinations, and the multiplication principle for counting  
mstat099 Determining a sample space and outcomes for a simple event  
mstat100 Determining a sample space and outcomes for a compound event  
mstat026 Introduction to the probability of an event  
mstat010 Probability of an event  
mstat046 Experimental and theoretical probability  
stat106 Outcomes and event probability  
stat112 Probabilities involving two dice  
mstat116 Probabilities of a permutation and a combination  
mstat048 Odds of an event

mstat011 Area as probability  
mstat019 Identifying independent events given descriptions of experiments  
mstat012 Probability of independent events  
mstat013 Probability of dependent events  
stat117 Probabilities of draws with replacement  
stat118 Probabilities of draws without replacement  
mstat115 Determining outcomes for compound events and complements of events  
mstat110 Using a Venn diagram to understand the multiplication rule for probability  
mstat107 Outcomes and event probability: Conditional probability  
mstat104 Identifying independent events given values of probabilities  
mstat105 Computing conditional probability using a two-way frequency table  
mstat106 Computing conditional probability to make an inference using a two-way frequency table  
mstat118 Conditional probability: Basic  
mstat109 Using a Venn diagram to understand the addition rule for probability  
mstat108 Outcomes and event probability: Addition rule  
mstat032 Probability of the union of two events  
mstat117 Probability of intersection or union: Word problems  
mstat085 Identifying outcomes in a random number table used to simulate a compound event  
mstat086 Using a random number table to simulate a compound event  
mstat114 Using a random number table to make a fair decision  
stat021 Population standard deviation  
stat852 Word problem involving calculations from a normal distribution  
pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
pcalc008 Finding trigonometric ratios given a right triangle  
geom317 Understanding trigonometric ratios through similar right triangles  
geom316 Relationship between the sines and cosines of complementary angles  
geom318 Using similar right triangles to find trigonometric ratios  
pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
pcalc642 Solving a right triangle  
geom860 Special right triangles: Decimal answers  
geom506 Special right triangles: Exact answers  
pcalc002 Converting between degree and radian measure: Problem type 1  
pcalc031 Solving a triangle with the law of sines: Problem type 1  
pcalc032 Solving a triangle with the law of sines: Problem type 2  
pcalc644 Solving a word problem using the law of sines  
geom320 Proving the law of sines  
pcalc033 Solving a triangle with the law of cosines  
pcalc645 Solving a word problem using the law of cosines  
geom409 Proving the law of cosines  
geom439 Using trigonometry to find the area of a right triangle  
pcalc646 Finding the area of a triangle using trigonometry  
geom319 Expressing the area of a triangle in terms of the sine of one of its angles  
pcalc647 Heron's formula  
pcalc060 Magnitude of a vector given in component form  
pcalc739 Multiplication of a vector by a scalar: Geometric approach  
pcalc063 Translation of a vector  
geom856 Vector addition and scalar multiplication: Component form  
vector008 Linear combination of vectors: Component form  
geom857 Vector addition: Geometric approach  
vector007 Vector subtraction: Geometric approach  
vector002 Finding the magnitude and direction of a vector given its graph  
vector005 Finding the components of a vector given its graph

## B.98 Accelerated CC Math 7

### Whole Numbers and Integers

arith124 Whole number place value: Problem type 1  
arith125 Whole number place value: Problem type 2  
arith066 Expanded form  
arith643 Expanded form with zeros  
arith028 Numeral translation: Problem type 1  
arith060 Numeral translation: Problem type 2  
arith630 Addition with carry to the hundreds place  
arith012 Addition of large numbers  
arith006 Subtraction with borrowing  
arith682 Subtraction with multiple regrouping steps  
arith637 Subtraction and regrouping with zeros  
arith613 Word problem with addition or subtraction of whole numbers  
mstat061 Describing an increasing or decreasing pattern from a table of values  
arith126 Multiplication as repeated addition  
arith004 Multiplication with carry  
arith615 Introduction to multiplication of large numbers  
arith675 Understanding multiplication of a one-digit number with a larger number  
arith014 Multiplication of large numbers  
arith641 Multiples: Problem type 1  
arith642 Multiples: Problem type 2  
arith614 Word problem with multiplication or division of whole numbers  
arith130 Word problem with multiplication and addition or subtraction of whole numbers  
arith451 Word problem on unit rates associated with ratios of whole numbers: Whole number answers  
arith243 Division of whole numbers given in fractional form  
arith711 Division involving zero  
arith005 Division with carry  
arith901 Whole number division: 2-digit by 2-digit, no remainder  
arith902 Whole number division: 3-digit by 2-digit, no remainder  
arith616 Quotient and remainder: Problem type 1  
arith617 Quotient and remainder: Problem type 2  
arith631 Quotient and remainder: Problem type 3  
arith650 Division involving quotients with intermediate zeros  
arith023 Word problem with division of whole numbers and rounding  
arith651 Introduction to inequalities  
arith652 Comparing a numerical expression with a number  
arith077 Ordering large numbers  
arith078 Rounding to tens or hundreds  
arith123 Rounding to hundreds or thousands  
arith061 Rounding to thousands, ten thousands, or hundred thousands  
arith101 Estimating a sum of whole numbers  
arith102 Estimating a difference of whole numbers  
arith677 Estimating a product  
arith678 Estimating a quotient  
arith692 Writing expressions using exponents  
arith233 Introduction to exponents  
arith683 Power of 10: Positive exponent  
arith645 Introduction to parentheses  
arith865 Comparing numerical expressions with parentheses  
arith681 Introduction to order of operations  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
arith646 Even and odd numbers  
arith647 Divisibility rules for 2, 5, and 10  
arith648 Divisibility rules for 3 and 9  
arith056 Factors



arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith516 Greatest common factor of 3 numbers  
arith409 Introduction to the distributive property  
arith657 Understanding the distributive property  
arith410 Introduction to factoring with numbers  
arith411 Factoring a sum or difference of whole numbers  
arith070 Least common multiple of 2 numbers  
arith804 Least common multiple of 3 numbers  
arith418 Word problem involving the least common multiple of 2 numbers  
arith240 Word problem with common multiples  
alge286 Plotting integers on a number line  
arith691 Ordering integers  
arith415 Using a number line to compare integers  
arith699 Writing a signed number for a real-world situation  
arith400 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 1  
arith511 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 2  
arith416 Comparing signed numbers relating to a real-world situation  
arith402 Plotting opposite integers on a number line  
arith403 Finding opposites of integers  
arith071 Absolute value of a number  
arith412 Finding all numbers with a given absolute value  
arith200 Integer addition: Problem type 1  
arith108 Integer addition: Problem type 2  
arith431 Identifying a sum as a point located a given distance from another point  
arith430 Identifying relative change when combining two quantities  
arith688 Integer subtraction: Problem type 1  
arith689 Integer subtraction: Problem type 2  
arith690 Integer subtraction: Problem type 3  
arith754 Addition and subtraction with 3 integers  
arith755 Addition and subtraction with 4 or 5 integers  
arith440 Operations with absolute value: Problem type 1  
arith104 Operations with absolute value: Problem type 2  
alge694 Computing the distance between two integers on a number line  
arith433 Computing and understanding distances between integers on a number line  
arith701 Word problem with addition or subtraction of integers  
arith231 Integer multiplication and division  
arith800 Multiplication of 3 or 4 integers  
arith952 Word problem with multiplication or division of integers  
arith702 Exponents and integers: Problem type 1  
arith703 Exponents and integers: Problem type 2  
arith118 Order of operations with integers  
arith600 Order of operations with integers and exponents  
alge284 Evaluating an algebraic expression: Whole number addition or subtraction  
alge683 Evaluating an algebraic expression: Whole number multiplication or division  
alge285 Evaluating an algebraic expression: Whole numbers with two operations  
alge649 Evaluating a formula  
alge648 Evaluating an algebraic expression: Whole numbers with one operation and an exponent  
alge832 Evaluating an algebraic expression: Whole number operations and exponents  
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
alge004 Evaluating a quadratic expression: Integers  
alge733 Writing a one-step expression for a real-world situation  
alge831 Translating a phrase into a one-step expression  
alge291 Translating a phrase into a two-step expression  
geom339 Perimeter of a polygon  
geom300 Perimeter of a square or a rectangle  
geom019 Area of a square or a rectangle  
geom866 Perimeter and area on a grid  
geom311 Volume of a rectangular prism  
alge650 Identifying solutions to a one-step linear equation: Problem type 1  
alge651 Identifying solutions to a one-step linear equation: Problem type 2



alge009 Additive property of equality with whole numbers  
 alge010 Additive property of equality with integers  
 alge008 Multiplicative property of equality with whole numbers  
 alge797 Multiplicative property of equality with integers

## Fractions

arith623 Introduction to fractions  
 arith665 Understanding equivalent fractions  
 arith212 Equivalent fractions  
 arith666 Introduction to simplifying a fraction  
 arith067 Simplifying a fraction  
 alge660 Identifying equivalent signed fractions  
 arith687 Fractional position on a number line  
 arith667 Plotting fractions on a number line  
 arith044 Ordering fractions with the same denominator  
 arith091 Ordering fractions with the same numerator  
 arith092 Using a common denominator to order fractions  
 arith079 Product of a unit fraction and a whole number  
 arith086 Product of a fraction and a whole number: Problem type 1  
 arith119 Introduction to fraction multiplication  
 arith053 Fraction multiplication  
 arith812 Product of a fraction and a whole number: Problem type 2  
 arith905 Determining if a quantity is increased or decreased when multiplied by a fraction  
 arith509 Modeling multiplication of proper fractions  
 arith813 Multiplication of 3 fractions  
 arith822 Signed fraction multiplication: Basic  
 arith105 Signed fraction multiplication: Advanced  
 arith818 Word problem involving fractions and multiplication  
 arith095 Multi-step word problem involving fractions and multiplication  
 arith088 The reciprocal of a number  
 arith694 Division involving a whole number and a fraction  
 arith022 Fraction division  
 arith507 Fact families for multiplication and division of fractions  
 arith508 Modeling division of a whole number by a fraction  
 arith814 Signed fraction division  
 arith819 Word problem involving fractions and division  
 arith618 Addition or subtraction of fractions with the same denominator  
 arith802 Addition or subtraction of fractions with the same denominator and simplification  
 alge432 Introduction to adding fractions with variables and common denominators  
 arith801 Finding the LCD of two fractions  
 arith109 Addition or subtraction of unit fractions  
 arith664 Introduction to addition or subtraction of fractions with different denominators  
 arith230 Addition or subtraction of fractions with different denominators  
 arith803 Addition and subtraction of 3 fractions with different denominators  
 arith116 Signed fraction addition or subtraction: Basic  
 arith864 Signed fraction subtraction involving double negation  
 arith106 Signed fraction addition or subtraction: Advanced  
 arith811 Addition and subtraction of 3 fractions involving signs  
 arith805 Word problem involving addition or subtraction of fractions with different denominators  
 arith100 Fractional part of a circle  
 arith662 Writing a mixed number and an improper fraction for a shaded region  
 arith015 Writing an improper fraction as a mixed number  
 arith619 Writing a mixed number as an improper fraction  
 arith605 Plotting rational numbers on a number line  
 arith215 Addition or subtraction of mixed numbers with the same denominator  
 arith084 Addition of mixed numbers with the same denominator and carry  
 arith216 Subtraction of mixed numbers with the same denominator and borrowing  
 arith806 Addition or subtraction of mixed numbers with different denominators and no carry or borrow  
 arith808 Addition of mixed numbers with different denominators and carry

arith809 Subtraction of mixed numbers with different denominators and borrowing  
arith807 Addition and subtraction of 3 mixed numbers with different denominators  
arith810 Word problem involving addition or subtraction of mixed numbers with different denominators  
arith815 Mixed number multiplication  
arith816 Multiplication of a mixed number and a whole number  
arith817 Division with a mixed number and a whole number  
arith068 Mixed number division  
arith820 Word problem involving multiplication or division with mixed numbers  
arith821 Exponents and fractions  
alge790 Evaluating expressions with exponents of zero  
arith704 Exponents and signed fractions  
arith859 Order of operations with fractions: Problem type 1  
arith860 Order of operations with fractions: Problem type 2  
arith861 Order of operations with fractions: Problem type 3  
arith695 Complex fraction without variables: Problem type 1  
alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
alge801 Additive property of equality with fractions and mixed numbers  
alge836 Additive property of equality with signed fractions  
alge646 Multiplicative property of equality with whole numbers: Fractional answers  
alge820 Multiplicative property of equality with fractions  
alge012 Multiplicative property of equality with signed fractions

## Decimals

arith127 Writing a decimal and a fraction for a shaded region  
arith110 Decimal place value: Tenths and hundredths  
arith220 Decimal place value: Hundreds to ten thousandths  
arith714 Writing a decimal number less than 1 given its name  
arith715 Writing a decimal number greater than 1 given its name  
arith716 Writing a decimal number given its name: Advanced  
arith829 Reading decimal position on a number line: Tenths  
arith830 Reading decimal position on a number line: Hundredths  
arith831 Understanding decimal position on a number line using zoom: Hundredths  
arith832 Understanding decimal position on a number line using zoom: Thousandths  
arith129 Introduction to ordering decimals  
arith608 Ordering decimals  
arith221 Rounding decimals  
arith717 Converting a decimal to a proper fraction without simplifying: Basic  
arith719 Converting a decimal to a proper fraction without simplifying: Advanced  
arith718 Converting a decimal to a proper fraction in simplest form: Basic  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith721 Converting a decimal to a mixed number and an improper fraction without simplifying  
arith722 Converting a decimal to a mixed number and an improper fraction in simplest form: Basic  
arith724 Converting a decimal to a mixed number and an improper fraction in simplest form: Advanced  
arith624 Addition of aligned decimals  
arith013 Decimal addition with 3 numbers  
arith734 Subtraction of aligned decimals  
arith735 Decimal subtraction: Basic  
arith736 Decimal subtraction: Advanced  
arith737 Decimal addition and subtraction with 3 or more numbers  
arith131 Estimating a decimal sum or difference  
arith117 Signed decimal addition and subtraction  
arith234 Signed decimal addition and subtraction with 3 numbers  
geom525 Computing distances between decimals on the number line  
arith132 Word problem with addition or subtraction of 2 decimals  
arith133 Word problem with addition of 3 or 4 decimals and whole numbers  
arith134 Word problem with subtraction of a whole number and a decimal: Regrouping with zeros  
arith739 Introduction to decimal multiplication  
arith017 Multiplication of a decimal by a whole number  
arith055 Decimal multiplication: Problem type 1

arith046 Decimal multiplication: Problem type 2  
 arith082 Multiplication of a decimal by a power of ten  
 arith738 Multiplication of a decimal by a power of 0.1  
 arith740 Multiplication of decimals that have a product less than 0.1  
 arith752 Estimating a product of decimals  
 arith750 Signed decimal multiplication  
 arith135 Word problem with multiplication of a decimal and a whole number  
 arith137 Word problem with multiplication of two decimals  
 arith628 Word problem with multiple decimal operations: Problem type 1  
 arith744 Whole number division with decimal answers  
 arith081 Division of a decimal by a whole number  
 arith743 Division of a decimal by a 1-digit decimal  
 arith019 Division of a decimal by a 2-digit decimal  
 arith083 Division of a decimal by a power of ten  
 arith742 Division of a decimal by a power of 0.1  
 arith745 Decimal division with rounding  
 arith751 Signed decimal division  
 arith136 Word problem with division of a decimal and a whole number  
 arith138 Word problem with division of two decimals  
 arith629 Word problem with multiple decimal operations: Problem type 2  
 arith103 Average of two numbers  
 arith725 Converting a fraction with a denominator of 10 or 100 to a decimal  
 arith726 Converting a fraction with a denominator of 100 or 1000 to a decimal  
 arith113 Converting a proper fraction with a denominator of 2, 4, or 5 to a decimal  
 arith114 Converting a mixed number with a denominator of 2, 4, or 5 to a decimal  
 arith727 Converting a fraction to a terminating decimal: Basic  
 arith728 Converting a fraction to a terminating decimal: Advanced  
 arith730 Converting a fraction to a repeating decimal: Basic  
 arith731 Converting a fraction to a repeating decimal: Advanced  
 arith733 Using a calculator to convert a fraction to a rounded decimal  
 arith111 Converting a mixed number to a terminating decimal: Basic  
 arith112 Converting a mixed number to a terminating decimal: Advanced  
 arith732 Converting a fraction or mixed number to a rounded decimal  
 arith609 Ordering fractions and decimals  
 alge001 Identifying numbers as integers or non-integers  
 arith513 Identifying rational decimal numbers  
 arith753 Squaring decimal bases: Products greater than 0.1  
 arith741 Exponents and decimals: Products less than 0.1  
 arith720 Order of operations with decimals: Problem type 1  
 arith746 Order of operations with decimals: Problem type 2  
 arith747 Order of operations with decimals: Problem type 3  
 arith748 Addition or subtraction with a decimal and a mixed number  
 arith749 Multiplication with a decimal and a fraction  
 alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
 alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
 alge800 Additive property of equality with decimals  
 alge825 Multiplicative property of equality with decimals

### **Ratios, Proportions, and Measurement**

arith823 Writing ratios using different notations  
 arith663 Writing ratios for real-world situations  
 arith450 Identifying statements that describe a ratio  
 arith824 Simplifying a ratio of whole numbers: Problem type 1  
 arith825 Simplifying a ratio of decimals  
 arith827 Finding a unit price  
 arith455 Using tables to compare ratios  
 arith828 Computing unit prices to find the better buy  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 arith505 Word problem on unit rates associated with ratios of fractions

arith506 Word problem on unit rates associated with ratios of mixed numbers  
 arith064 Solving a word problem on proportions using a unit rate  
 alge823 Solving a one-step word problem using the formula  $d = rt$   
 arith452 Finding missing values in a table of equivalent ratios  
 arith453 Using a table of equivalent ratios to find a missing quantity in a ratio  
 arith504 Writing an equation to represent a proportional relationship  
 alge819 Solving a proportion of the form  $x/a=b/c$ : Basic  
 alge272 Solving a proportion of the form  $x/a = b/c$   
 arith610 Word problem on proportions: Problem type 1  
 arith611 Word problem on proportions: Problem type 2  
 arith045 Word problem with powers of ten  
 arith500 Identifying proportional relationships in tables by calculating unit rates: Whole numbers  
 arith510 Identifying proportional relationships in tables by calculating unit rates: Fractions  
 geom359 Identifying congruent shapes on a grid  
 geom360 Identifying similar or congruent shapes on a grid  
 geom037 Similar polygons  
 geom038 Similar right triangles  
 geom337 Indirect measurement  
 geom538 Finding lengths using scale models  
 geom539 Finding a scale factor: Same units  
 geom541 Using a scale drawing to find actual area  
 geom542 Reproducing a scale drawing at a different scale  
 mstat058 Choosing a measuring tool  
 mstat059 Choosing U.S. Customary measurement units  
 mstat033 Measuring length to the nearest inch  
 mstat034 Measuring length to the nearest quarter or half inch  
 unit005 U.S. Customary unit conversion with whole number values  
 mstat035 Conversions involving measurements in feet and inches  
 mstat036 Adding measurements in feet and inches  
 unit006 U.S. Customary unit conversion with whole number values: Two-step conversion  
 unit007 U.S. Customary unit conversion with mixed number values: One-step conversion  
 unit008 U.S. Customary unit conversion with mixed number values: Two-step conversion  
 unit009 U.S. Customary area unit conversion with whole number values  
 mstat060 Choosing metric measurement units  
 mstat063 Measuring length to the nearest centimeter  
 mstat064 Measuring length to the nearest millimeter  
 unit001 Metric distance conversion with whole number values  
 unit002 Metric mass or capacity conversion with whole number values  
 unit003 Metric distance conversion with decimal values  
 unit004 Metric conversion with decimal values: Two-step problem  
 unit010 Metric area unit conversion with decimal values  
 unit012 Time unit conversion with whole number values  
 time009 Introduction to adding time  
 time006 Adding time  
 time011 Introduction to elapsed time  
 time007 Elapsed time  
 mstat062 Reading a positive temperature from a thermometer  
 mstat038 Reading the temperature from a thermometer  
 mstat065 Converting between temperatures in Fahrenheit and Celsius  
 arith826 Simplifying a ratio of whole numbers: Problem type 2  
 alge218 Solving a word problem involving rates and time conversion  
 unit034 Converting between metric and U.S. Customary unit systems  
 unit035 Converting between compound units: Basic  
 unit036 Converting between compound units: Advanced

### Percents

arith836 Converting a fraction with a denominator of 100 to a percentage  
 arith837 Converting a percentage to a fraction with a denominator of 100  
 arith674 Finding the percentage of a grid that is shaded

arith903 Representing benchmark percentages on a grid  
arith723 Introduction to converting a percentage to a decimal  
arith833 Introduction to converting a decimal to a percentage  
arith834 Converting between percentages and decimals  
arith841 Converting a mixed number percentage to a decimal  
arith835 Converting between percentages and decimals in a real-world situation  
arith090 Converting a percentage to a fraction in simplest form  
arith839 Converting a decimal percentage to a fraction  
arith838 Converting a fraction to a percentage: Denominator of 4, 5, or 10  
arith904 Finding benchmark fractions and percentages for a figure  
arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
arith843 Using a calculator to convert a fraction to a rounded percentage  
arith842 Converting a fraction to a percentage in a real-world situation  
arith840 Finding a percentage of a whole number  
arith030 Finding a percentage of a whole number without a calculator: Basic  
arith844 Finding a percentage of a whole number without a calculator: Advanced  
arith862 Applying the percent equation: Problem type 1  
arith863 Applying the percent equation: Problem type 2  
arith845 Finding a percentage of a total amount: Real-world situations  
arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount  
arith857 Estimating a tip without a calculator  
arith069 Writing a ratio as a percentage without a calculator  
arith850 Finding the rate of a tax or commission  
arith849 Finding the total amount given the percentage of a partial amount  
stat805 Making a reasonable inference based on proportion statistics  
stat804 Interpreting a circle graph or pie chart  
arith856 Finding a percentage of a total amount in a circle graph  
stat801 Computations from a circle graph  
arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
arith851 Finding the final amount given the original amount and a percentage increase or decrease  
arith847 Finding the sale price given the original price and percent discount  
arith074 Finding the sale price without a calculator given the original price and percent discount  
arith848 Finding the total cost including tax or markup  
arith855 Finding the original amount given the result of a percentage increase or decrease  
arith031 Finding the original price given the sale price and percent discount  
arith858 Finding the percentage increase or decrease: Basic  
arith225 Finding the percentage increase or decrease: Advanced  
unit052 Finding the absolute error and percent error of a measurement  
arith232 Finding simple interest without a calculator  
arith853 Introduction to compound interest  
arith915 Calculating income tax  
arith918 Comparing discounts  
arith909 Examining a savings plan for college  
arith914 Calculations involving paying for college  
arith920 Comparing total costs for attending different colleges  
arith922 Distinguishing between fixed and variable expenses  
arith916 Computing percentages for categories of a budget  
arith919 Computations involving cost of living and hourly wage  
arith921 Comparing annual salaries of different occupations  
arith911 Calculations involving purchases with debit and credit cards  
arith950 Comparing costs of checking accounts  
arith951 Balancing a check register  
arith912 Reading a credit report  
arith913 Understanding the impact of a credit score  
arith917 Computing a person's net worth  
arith906 Calculating and comparing monthly payments using the ALEKS loan calculator  
arith907 Calculating monthly payment, total payment, and interest using the ALEKS loan calculator  
arith908 Calculating and comparing total loan payments using the ALEKS loan calculator  
arith910 Calculating and comparing simple interest and compound interest

## Equations and Inequalities

alge647 Identifying like terms  
alge700 Combining like terms: Whole number coefficients  
alge607 Combining like terms: Integer coefficients  
arith655 Introduction to properties of addition  
alge187 Properties of addition  
alge666 Combining like terms: Fractional coefficients  
alge665 Combining like terms: Decimal coefficients  
alge310 Multiplying a constant and a linear monomial  
alge606 Distributive property: Whole number coefficients  
alge604 Distributive property: Integer coefficients  
alge610 Distributive property: Fractional coefficients  
alge605 Factoring a linear binomial  
alge612 Identifying parts in an algebraic expression  
alge613 Identifying equivalent algebraic expressions  
arith656 Introduction to properties of multiplication  
alge188 Properties of real numbers  
alge608 Using distribution and combining like terms to simplify: Univariate  
alge667 Identifying properties used to simplify an algebraic expression  
alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
alge293 Combining like terms in a quadratic expression  
alge436 Adding rational expressions with different denominators and a single occurrence of a variable  
alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
alge803 Using two steps to solve an equation with whole numbers  
alge266 Additive property of equality with a negative coefficient  
alge006 Solving a two-step equation with integers  
alge200 Solving an equation to find the value of an expression  
alge920 Introduction to solving an equation with parentheses  
alge837 Solving a multi-step equation given in fractional form  
alge986 Identifying properties used to solve a linear equation  
alge824 Solving a two-step equation with signed decimals  
alge838 Introduction to solving an equation with variables on the same side  
alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
alge611 Introduction to solving a linear equation with a variable on each side  
alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
alge614 Clearing fractions in an equation  
alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
alge208 Solving a two-step equation with signed fractions  
alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
alge742 Solving equations with zero, one, or infinitely many solutions  
alge840 Solving a proportion of the form  $(x+a) \div b = c \div d$   
alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
alge658 Introduction to solving a rational equation  
alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
alge603 Introduction to solving an absolute value equation  
alge864 Solving an absolute value equation: Problem type 1  
alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
alge518 Solving for a variable inside parentheses in terms of other variables  
alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
alge016 Translating a sentence into a one-step equation



alge671 Choosing stories that can be represented by given one-step equations  
 alge841 Translating a sentence into a multi-step equation  
 alge628 Writing an equation of the form  $Ax + B = C$  to solve a word problem  
 alge618 Comparing arithmetic and algebraic solutions to a word problem  
 alge672 Choosing stories that can be represented by given two-step equations  
 alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
 alge629 Writing an equation of the form  $A(x + B) = C$  to solve a word problem  
 alge014 Solving a word problem with two unknowns using a linear equation  
 alge673 Writing an equation to represent a real-world problem: Variable on both sides  
 alge674 Writing and solving a real-world problem given an equation with the variable on both sides  
 alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
 alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
 alge792 Solving a word problem with three unknowns using a linear equation  
 alge842 Solving a word problem involving consecutive integers  
 alge794 Solving a value mixture problem using a linear equation  
 alge795 Solving a percent mixture problem using a linear equation  
 alge796 Solving a distance, rate, time problem using a linear equation  
 alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge653 Introduction to identifying solutions to an inequality  
 alge748 Writing an inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line  
 alge652 Identifying solutions to a one-step linear inequality  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge809 Multiplicative property of inequality with whole numbers  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge621 Solving a word problem using a one-step linear inequality  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge636 Solving a two-step linear inequality with whole numbers  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge846 Translating a sentence into a multi-step inequality  
 alge619 Solving a word problem using a two-step linear inequality and describing the solution  
 alge623 Solving a word problem using a two-step linear inequality  
 alge749 Solving a decimal word problem using a two-step linear inequality

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alge278 Reading a point in quadrant 1  
 alge279 Plotting a point in quadrant 1  
 alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge692 Plotting a point in quadrant 1: Mixed number coordinates  
 alge693 Plotting a point in the coordinate plane: Mixed number coordinates  
 arith404 Naming the quadrant or axis of a point given its graph  
 arith405 Naming the quadrant or axis of a point given its coordinates  
 arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
 alge695 Finding distances between points that share a common coordinate given the graph



alge696 Finding distances between points that share a common coordinate given their coordinates  
alge191 Midpoint of a line segment in the plane  
alge282 Function tables with two-step rules  
alge850 Table for a linear equation  
fun005 Writing a function rule given a table of ordered pairs: One-step rules  
fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
alge873 Identifying solutions to a linear equation in two variables  
alge066 Finding a solution to a linear equation in two variables  
alge280 Graphing a line in quadrant 1  
alge877 Graphing a linear equation of the form  $y = mx$   
alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
alge880 Graphing a line given its equation in standard form  
alge198 Graphing a vertical or horizontal line  
alge884 Finding  $x$ - and  $y$ -intercepts given the graph of a line on a grid  
alge924 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Basic  
alge210 Finding  $x$ - and  $y$ -intercepts of a line given the equation: Advanced  
alge197 Graphing a line given its  $x$ - and  $y$ -intercepts  
alge881 Graphing a line by first finding its  $x$ - and  $y$ -intercepts  
alge874 Identifying linear functions given ordered pairs  
geom358 Identifying parallel and perpendicular lines  
mstat007 Interpreting a line graph  
arith454 Making a table and plotting points given a unit rate  
arith501 Identifying proportional relationships in graphs: Basic  
arith502 Identifying proportional relationships in graphs: Advanced  
arith512 Finding outputs and rate of increase given the graph of a line that models a real-world situation  
alge699 Comparing proportional relationships given in different forms  
alge575 Finding slope given the graph of a line in quadrant 1 that models a real-world situation  
alge875 Classifying slopes given graphs of lines  
alge886 Finding slope given the graph of a line on a grid  
alge887 Finding slope given two points on the line  
alge885 Finding the slope of horizontal and vertical lines  
alge814 Using right triangles to find the slope of a line  
alge888 Finding the coordinate that yields a given slope  
alge259 Graphing a line given its slope and  $y$ -intercept  
alge196 Graphing a line through a given point with a given slope  
alge982 Identifying direct variation equations  
alge938 Identifying direct variation from ordered pairs and writing equations  
alge904 Writing a direct variation equation  
alge175 Word problem on direct variation  
alge828 Interpreting direct variation from a graph  
alge905 Writing an inverse variation equation  
alge903 Identifying direct and inverse variation equations  
alge902 Identifying direct and inverse variation from ordered pairs and writing equations  
alge176 Word problem on inverse variation  
alge220 Word problem on inverse proportions  
alge625 Identifying linear equations: Basic  
alge891 Rewriting a linear equation in the form  $Ax + By = C$   
alge889 Finding the slope and  $y$ -intercept of a line given its equation in the form  $y = mx + b$   
alge890 Finding the slope and  $y$ -intercept of a line given its equation in the form  $Ax + By = C$   
alge882 Graphing a line by first finding its slope and  $y$ -intercept  
alge258 Writing an equation of a line given its slope and  $y$ -intercept  
alge892 Writing an equation and graphing a line given its slope and  $y$ -intercept  
alge893 Writing an equation in slope-intercept form given the slope and a point  
alge883 Graphing a line given its equation in point-slope form  
alge894 Writing an equation in point-slope form given the slope and a point  
alge070 Writing an equation of a line given the  $y$ -intercept and another point  
alge072 Writing the equation of the line through two given points  
alge073 Writing the equations of vertical and horizontal lines through a given point  
geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
alge895 Identifying parallel and perpendicular lines from equations

geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
 alge630 Finding outputs of a one-step function that models a real-world situation: Two variable equation  
 alge632 Finding outputs of a two-step function with decimals that models a real-world situation: Two variable equation  
 alge633 Finding inputs and outputs of a two-step function that models a real-world situation: Two variable equation  
 alge655 Writing and evaluating a function that models a real-world situation: Basic  
 alge897 Writing and evaluating a function that models a real-world situation: Advanced  
 alge654 Graphing ordered pairs and writing an equation from a table of values in context  
 alge656 Writing an equation and drawing its graph to model a real-world situation: Basic  
 alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
 alge817 Finding the initial amount and rate of change given a table for a linear function  
 alge818 Finding the initial amount and rate of change given a graph of a linear function  
 alge987 Comparing properties of linear functions given in different forms  
 alge989 Interpreting the parameters of a linear function that models a real-world situation  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 alge670 Identifying independent and dependent quantities from tables and graphs  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun016 Domain and range from ordered pairs  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 alge294 Finding outputs of a one-step function that models a real-world situation: Function notation  
 alge295 Finding outputs of a two-step function with decimals that models a real-world situation: Function notation  
 alge296 Finding inputs and outputs of a two-step function that models a real-world situation: Function notation  
 alge990 Domain and range of a linear function that models a real-world situation  
 fun026 Finding an output of a function from its graph  
 pcalc761 Finding inputs and outputs of a function from its graph  
 fun007 Domain and range from the graph of a discrete relation  
 alge896 Graphing an integer function and finding its range for a given domain  
 alge570 Graphing a function of the form  $f(x) = ax + b$ : Integer slope  
 alge571 Graphing a function of the form  $f(x) = ax + b$ : Fractional slope  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 mstat018 Choosing a graph to fit a narrative: Basic  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge913 Graphing an absolute value equation of the form  $y = A - x -$   
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge954 Graphing a parabola of the form  $y = ax^2$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge732 Finding patterns in shapes  
 alge644 Finding the first terms of an arithmetic sequence using an explicit rule  
 alge645 Finding the first terms of a geometric sequence using an explicit rule  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge914 Identifying solutions to a system of linear equations  
 alge725 Graphically solving a system of linear equations

alge815 Introduction to using substitution to solve a linear equation  
 alge816 Solving a system of linear equations of the form  $y = mx + b$   
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge634 Solving systems of linear equations with 0, 1, or infinitely many solutions  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 pcalc038 Addition or subtraction of matrices  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced

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alge686 Introduction to the product rule with positive exponents: Whole number base  
 alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge311 Product rule with positive exponents: Univariate  
 alge030 Product rule with positive exponents: Multivariate  
 alge690 Introduction to the power of a power rule with positive exponents: Whole number base  
 alge826 Understanding the power rules of exponents  
 alge306 Introduction to the power of a power rule of exponents  
 alge305 Introduction to the power of a product rule of exponents  
 alge307 Power rules with positive exponents: Multivariate products  
 alge308 Power rules with positive exponents: Multivariate quotients  
 alge451 Simplifying a ratio of multivariate monomials: Basic  
 alge688 Introduction to the quotient rule with positive exponents: Whole number base  
 alge827 Introduction to the quotient rule of exponents  
 alge452 Simplifying a ratio of univariate monomials  
 alge026 Quotient of expressions involving exponents  
 arith029 Ordering numbers with positive exponents  
 arith684 Power of 10: Negative exponent  
 arith729 Evaluating an expression with a negative exponent: Whole number base  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge687 Introduction to the product rule with negative exponents: Whole number base  
 alge961 Introduction to the product rule with negative exponents  
 alge689 Introduction to the quotient rule with negative exponents: Whole number base  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge691 Introduction to the power of a power rule with negative exponents: Whole number base  
 alge025 Power of a power rule with negative exponents  
 scinot023 Introduction to scientific notation with positive exponents  
 arith036 Scientific notation with positive exponent  
 scinot024 Introduction to scientific notation with negative exponents  
 arith037 Scientific notation with negative exponent  
 scinot012 Converting between scientific notation and standard form in a real-world situation  
 scinot025 Estimating numbers using scientific notation  
 scinot020 Choosing metric units and converting to the base unit in scientific notation  
 scinot021 Expressing calculator notation as scientific notation  
 scinot008 Multiplying numbers written in scientific notation: Basic  
 scinot009 Multiplying numbers written in scientific notation: Advanced

scinot019 Multiplying numbers written in decimal form or scientific notation in a real-world situation  
 scinot010 Dividing numbers written in scientific notation: Basic  
 scinot011 Dividing numbers written in scientific notation: Advanced  
 scinot013 Finding the scale factor between numbers given in scientific notation in a real-world situation  
 scinot015 Adding or subtracting numbers written in scientific notation: Same exponents, basic  
 scinot022 Adding or subtracting numbers written in scientific notation: Same exponents, advanced  
 scinot016 Adding or subtracting numbers written in scientific notation: Different exponents  
 scinot017 Estimating the sum or difference of two numbers written in scientific notation  
 alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge032 Squaring a binomial: Univariate  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge737 Introduction to the LCM of two monomials  
 alge055 Least common multiple of two monomials  
 alge736 Introduction to the GCF of two monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge290 Factoring a difference of squares in one variable: Basic  
 alge947 Factoring a difference of squares in one variable: Advanced  
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 arith016 Square root of a perfect square  
 arith601 Square root of a rational perfect square  
 alge413 Finding all square roots of a number  
 arith760 Square roots of perfect squares with signs  
 arith763 Using a calculator to approximate a square root  
 arith602 Estimating a square root  
 alge567 Using numerical methods to approximate a square root to the nearest tenth  
 alge568 Using numerical methods to approximate a square root to the nearest hundredth  
 arith515 Approximating the location of irrational numbers on a number line  
 arith712 Ordering real numbers  
 arith514 Converting a repeating decimal to a fraction  
 arith432 Identifying true statements about rational and irrational numbers  
 alge002 Identifying numbers as rational or irrational  
 alge415 Introduction to simplifying a radical expression with an even exponent  
 alge264 Square root of a perfect square monomial  
 arith093 Simplifying the square root of a whole number less than 100  
 arith762 Simplifying the square root of a whole number greater than 100  
 alge080 Simplifying a radical expression with an even exponent  
 arith767 Introduction to square root addition or subtraction  
 arith032 Square root addition or subtraction  
 arith764 Introduction to square root multiplication  
 arith765 Square root multiplication: Basic  
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 geom564 Finding side lengths of squares given an area and a perimeter  
 alge400 Introduction to solving a radical equation  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge542 Word problem involving radical equations: Basic  
 arith094 Cube root of an integer  
 alge698 Solving an equation of the form  $x^3 = a$  using integers  
 alge093 Solving an equation using the odd-root property: Problem type 1  
 geom565 Finding the side length of a cube given its volume  
 alge560 Rational exponents: Unit fraction exponents and whole number bases

alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem  
 geom862 Using the Pythagorean Theorem repeatedly  
 alge675 Using the Pythagorean Theorem to find distance on a grid  
 alge132 Distance between two points in the plane: Exact answers

### Angles, Lines, and Polygons

geom151 Measuring an angle with the protractor  
 geom152 Drawing an angle with the protractor  
 geom303 Acute, obtuse, and right angles  
 geom039 Finding supplementary and complementary angles  
 geom551 Finding the complement or supplement of an angle given a figure  
 geom552 Solving an equation involving complementary or supplementary angles  
 geom305 Identifying supplementary and vertical angles  
 geom553 Finding angle measures given two intersecting lines  
 geom530 Solving equations involving vertical angles  
 geom304 Identifying corresponding and alternate angles  
 geom349 Naming segments, rays, and lines  
 geom554 Finding angle measures given two parallel lines cut by a transversal  
 geom531 Solving equations involving angles and a pair of parallel lines  
 geom584 Establishing facts about the angles created when parallel lines are cut by a transversal  
 geom154 Constructing the perpendicular bisector of a line segment  
 geom158 Constructing an angle bisector  
 geom159 Constructing congruent angles  
 geom150 Constructing a pair of perpendicular lines  
 geom157 Constructing a pair of parallel lines  
 geom306 Acute, obtuse, and right triangles  
 geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles  
 geom001 Finding an angle measure of a triangle given two angles  
 geom860 Special right triangles: Decimal answers  
 geom908 Finding an angle measure for a triangle with an extended side  
 geom812 Finding an angle measure given extended triangles  
 geom813 Finding an angle measure given a triangle and parallel lines  
 geom623 Finding angle measures of a triangle given angles with variables  
 geom502 Finding angle measures of a right or isosceles triangle given angles with variables  
 geom309 Finding an angle measure for a triangle sharing a side with another triangle  
 geom586 Establishing facts about the interior angles of a triangle  
 geom587 Establishing facts about the interior and exterior angles of a triangle  
 geom543 Drawing a circle with a given radius or diameter  
 geom544 Creating triangles from given side lengths: Problem type 1  
 geom634 Creating triangles from given side lengths: Problem type 2  
 geom844 Using triangle inequality to determine if side lengths form a triangle  
 geom548 Determining if a triangle is possible based on given angle measures  
 geom549 Determining if given measurements define a unique triangle, more than one triangle, or no triangle  
 geom546 Drawing triangles with given conditions: Angle measures  
 geom547 Drawing triangles with given conditions: Side lengths and angle measures  
 geom545 Drawing triangles with given side lengths using a compass  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 geom361 Naming polygons  
 mstat042 Interpreting a Venn diagram of 2 sets

geom536 Drawing and identifying a polygon in the coordinate plane  
 geom867 Identifying parallelograms, rectangles, and squares  
 geom310 Properties of quadrilaterals  
 geom532 Classifying parallelograms  
 geom818 Finding the coordinates of a point to make a parallelogram  
 geom870 Sum of the angle measures of a quadrilateral  
 geom852 The sum of interior angle measures in a convex polygon

### Transformations

geom519 Identifying and naming congruent parts of congruent triangles  
 geom520 Identifying and naming congruent triangles  
 geom583 Finding angle measures of a triangle given two angles of a similar triangle  
 geom585 Finding angle measures and side ratios to determine if two triangles are similar  
 geom357 Identifying transformations  
 geom596 Translating a point and giving its coordinates: One step  
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 geom597 Properties of translated figures  
 geom598 Determining if figures are related by a translation  
 geom330 Translating a polygon  
 geom331 Using a translated point to find coordinates of other translated points  
 arith408 Reflecting a point across an axis  
 geom533 Reflecting a point across both coordinate axes  
 geom590 Reflecting a point across an axis and giving its coordinates  
 arith407 Finding the coordinates of a point reflected across an axis  
 geom560 Finding the coordinates of a point reflected across both axes  
 geom534 Reflecting a polygon across the x-axis or y-axis  
 geom591 Properties of reflected figures  
 geom592 Determining if figures are related by a reflection  
 geom332 Reflecting a polygon over a vertical or horizontal line  
 geom333 Finding the coordinates of three points reflected over an axis  
 geom334 Drawing lines of symmetry  
 geom602 Finding the coordinates of a point reflected across an axis and translated  
 geom815 Finding an angle of rotation  
 geom624 Identifying rotational symmetry and angles of rotation  
 geom593 Rotating a point and giving its coordinates  
 geom594 Properties of rotated figures  
 geom595 Determining if figures are related by a rotation  
 geom335 Rotating a figure about the origin  
 geom580 Determining if figures are congruent and related by a transformation  
 geom581 Determining if figures are congruent and related by a sequence of transformations  
 geom606 Dilating a segment and giving the coordinates of its endpoints  
 geom607 The effect of dilation on side length  
 geom608 Determining if figures are related by a dilation  
 geom636 The effect of dilation on area  
 geom336 Dilating a figure  
 geom582 Determining if figures are similar and related by a sequence of transformations

### Perimeters, Areas, and Volumes

geom618 Perimeter of a polygon involving mixed numbers and fractions  
 geom078 Sides of polygons having the same perimeter  
 geom221 Finding the missing length in a figure  
 geom353 Perimeter of a piecewise rectangular figure  
 alge615 Writing algebraic expressions for the perimeter of a figure  
 geom817 Finding a side length given the perimeter and side lengths with variables  
 geom217 Finding the side length of a rectangle given its perimeter or area  
 geom561 Finding the dimensions of a rectangle given its perimeter and a relationship between sides



geom620 Area of a rectangle involving fractions  
geom619 Area of a rectangle involving mixed numbers and fractions  
geom350 Distinguishing between the area and perimeter of a rectangle  
geom351 Areas of rectangles with the same perimeter  
geom869 Estimates and exact answers  
alge616 Writing algebraic expressions for the area of a figure  
geom410 Word problem involving the area of a square or a rectangle  
geom143 Finding the perimeter or area of a rectangle given one of these values  
geom340 Area of a piecewise rectangular figure  
geom562 Area between two rectangles  
geom142 Word problem involving the area between two rectangles  
geom501 Finding the area of a right triangle on a grid  
geom509 Finding the area of a right triangle or its corresponding rectangle  
geom801 Area of a triangle  
geom517 Finding the area of a trapezoid on a grid by using triangles and rectangles  
geom344 Area involving rectangles and triangles  
alge724 Finding an area in terms of variables  
geom022 Area of a parallelogram  
geom023 Area of a trapezoid  
geom537 Finding the perimeter or area of a rectangle in the coordinate plane  
geom832 Area of quadrilaterals in the coordinate plane  
geom603 Identifying side lengths that give right triangles  
geom589 Demonstrating the converse of the Pythagorean Theorem  
geom588 Informal proof of the Pythagorean Theorem  
geom347 Introduction to a circle: Diameter, radius, and chord  
geom343 Identifying central angles, inscribed angles, arcs, chords, and tangents of a circle  
geom016 Circumference of a circle  
geom218 Finding the radius or the diameter of a circle given its circumference  
geom838 Circumference ratios  
geom301 Perimeter involving rectangles and circles  
geom026 Area of a circle  
geom802 Circumference and area of a circle  
geom570 Distinguishing between the area and circumference of a circle  
geom302 Area involving rectangles and circles  
geom563 Area between two concentric circles  
geom036 Word problem involving the area between two concentric circles  
geom214 Area involving inscribed figures  
geom126 Area of a sector of a circle: Exact answer in terms of  $\pi$   
geom868 Classifying solids  
geom348 Vertices, edges, and faces of a solid  
geom830 Counting the cubes in a solid made of cubes  
geom816 Side views of a solid made of cubes  
geom550 Identifying horizontal and vertical cross sections of solids  
geom354 Volume of a rectangular prism made of unit cubes  
geom518 Volume of a solid made of cubes with unit fraction edge lengths  
geom535 Volume of a rectangular prism with fractional edge lengths  
alge617 Writing equivalent expressions for the volume of a rectangular prism  
geom571 Word problem involving the volume of a rectangular prism  
geom558 Word problem involving the rate of filling or emptying a rectangular prism  
geom505 Volume of a piecewise rectangular prism  
geom090 Volume of a triangular prism  
geom572 Word problem involving the volume of a triangular prism  
geom033 Volume of a pyramid  
geom637 Relating the volumes of a rectangular prism and a rectangular pyramid  
geom638 Relating the volumes of a triangular prism and a triangular pyramid  
geom035 Volume of a cylinder  
geom573 Word problem involving the volume of a cylinder  
geom092 Word problem involving the rate of filling or emptying a cylinder  
geom622 Volume of a cone  
geom086 Volume of a cone: Exact answers in terms of  $\pi$   
geom639 Relating the volumes of a cylinder and a cone  
geom575 Word problem involving the volume of a cone



geom841 Volume of a sphere  
 geom574 Word problem involving the volume of a sphere  
 geom133 Ratio of volumes  
 geom219 Nets of solids  
 geom031 Surface area of a cube or a rectangular prism  
 geom632 Surface area of a rectangular prism made of unit cubes  
 geom555 Distinguishing between surface area and volume  
 geom556 Using a net to find the surface area of a rectangular prism  
 geom576 Word problem involving the surface area of a rectangular prism  
 geom345 Surface area of a piecewise rectangular prism made of unit cubes  
 geom091 Surface area of a triangular prism  
 geom557 Using a net to find the surface area of a triangular prism  
 geom621 Surface area of a cylinder  
 geom034 Surface area of a cylinder: Exact answers in terms of pi  
 geom578 Word problem involving the surface area of a cylinder  
 geom842 Surface area of a sphere  
 geom338 Surface area involving prisms or cylinders  
 geom846 Computing ratios of side lengths, surface areas, and volumes for similar solids  
 geom847 Similar solids: Problem type 2

### Data Analysis and Probability

mstat088 Identifying statistical questions  
 mstat080 Choosing an appropriate method for gathering data: Problem type 1  
 mstat081 Choosing an appropriate method for gathering data: Problem type 2  
 mstat056 Interpreting a tally table  
 mstat097 Constructing a two-way frequency table: Basic  
 mstat098 Constructing a two-way frequency table: Advanced  
 mstat049 Computing a percentage from a table of values  
 mstat087 Making an inference using a two-way frequency table  
 stat020 Calculating relative frequencies in a contingency table  
 mstat025 Finding if a question can be answered by the data  
 mstat037 Constructing a line plot  
 mstat005 Constructing a bar graph for non-numerical data  
 mstat004 Constructing a histogram for numerical data  
 mstat024 Interpreting a bar graph  
 mstat044 Interpreting a double bar graph  
 mstat057 Interpreting a pictograph table  
 mstat031 Interpreting a stem-and-leaf plot  
 geom814 Angle measure in a circle graph  
 mstat094 Constructing a scatter plot  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 mstat068 Predictions from the line of best fit  
 mstat067 Approximating the equation of a line of best fit and making predictions  
 mstat093 Classifying linear and nonlinear relationships from scatter plots  
 mstat071 Linear relationship and the correlation coefficient  
 mstat096 Identifying outliers and clustering in scatter plots  
 mstat003 Mode of a data set  
 mstat055 Finding the mode and range of a data set  
 mstat092 Finding the mode and range from a line plot  
 mstat001 Mean of a data set  
 mstat077 Using a model to find the mean  
 mstat075 Understanding the mean graphically: Two bars  
 mstat076 Understanding the mean graphically: Four or more bars  
 mstat091 Finding the mean of a symmetric distribution  
 mstat079 Finding sample size and comparing samples for estimating the mean  
 mstat089 Computations involving the mean, sample size, and sum of a data set  
 stat803 Finding the value for a new score that will yield a given mean  
 stat802 Rejecting unreasonable claims based on average statistics

mstat066 Weighted mean  
 mstat028 Mean and median of a data set  
 mstat029 How changing a value affects the mean and median  
 mstat095 Finding outliers in a data set  
 mstat053 Choosing the best measure to describe data  
 mstat078 Comparing measures of center and variation  
 mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
 mstat072 Five-number summary and interquartile range  
 mstat006 Constructing a box-and-whisker plot  
 mstat073 Using box-and-whisker plots to compare data sets  
 mstat090 Comparing sample means  
 mstat082 Computing mean absolute deviation from a list of numerical values  
 mstat083 Computing mean absolute deviation from a bar graph  
 mstat084 Assessing the degree of overlap of two distributions  
 mstat043 Interpreting a Venn diagram of 3 sets  
 mstat041 Interpreting a tree diagram  
 mstat040 Introduction to the counting principle  
 mstat015 Counting principle  
 mstat099 Determining a sample space and outcomes for a simple event  
 mstat100 Determining a sample space and outcomes for a compound event  
 pcalc082 Factorial expressions  
 mstat017 Computing permutations and combinations  
 mstat008 Word problem involving permutations  
 mstat009 Word problem involving combinations  
 mstat054 Classifying likelihood  
 mstat026 Introduction to the probability of an event  
 mstat010 Probability of an event  
 mstat039 Understanding likelihood  
 mstat048 Odds of an event  
 stat106 Outcomes and event probability  
 stat112 Probabilities involving two dice  
 mstat011 Area as probability  
 mstat046 Experimental and theoretical probability  
 mstat047 Introduction to expectation  
 mstat012 Probability of independent events  
 mstat013 Probability of dependent events  
 mstat085 Identifying outcomes in a random number table used to simulate a compound event  
 mstat086 Using a random number table to simulate a compound event

## B.99 Accelerated CC Algebra 1

### Arithmetic Readiness

arith067 Simplifying a fraction  
 arith212 Equivalent fractions  
 arith711 Division involving zero  
 arith070 Least common multiple of 2 numbers  
 arith804 Least common multiple of 3 numbers  
 arith418 Word problem involving the least common multiple of 2 numbers  
 arith240 Word problem with common multiples  
 arith801 Finding the LCD of two fractions  
 arith664 Introduction to addition or subtraction of fractions with different denominators  
 arith230 Addition or subtraction of fractions with different denominators  
 arith803 Addition and subtraction of 3 fractions with different denominators  
 arith805 Word problem involving addition or subtraction of fractions with different denominators  
 arith100 Fractional part of a circle  
 arith079 Product of a unit fraction and a whole number  
 arith086 Product of a fraction and a whole number: Problem type 1

arith119 Introduction to fraction multiplication  
arith053 Fraction multiplication  
arith812 Product of a fraction and a whole number: Problem type 2  
arith905 Determining if a quantity is increased or decreased when multiplied by a fraction  
arith813 Multiplication of 3 fractions  
arith818 Word problem involving fractions and multiplication  
arith095 Multi-step word problem involving fractions and multiplication  
arith088 The reciprocal of a number  
arith694 Division involving a whole number and a fraction  
arith022 Fraction division  
arith695 Complex fraction without variables: Problem type 1  
arith819 Word problem involving fractions and division  
arith015 Writing an improper fraction as a mixed number  
arith619 Writing a mixed number as an improper fraction  
arith084 Addition of mixed numbers with the same denominator and carry  
arith216 Subtraction of mixed numbers with the same denominator and borrowing  
arith806 Addition or subtraction of mixed numbers with different denominators and no carry or borrow  
arith808 Addition of mixed numbers with different denominators and carry  
arith809 Subtraction of mixed numbers with different denominators and borrowing  
arith807 Addition and subtraction of 3 mixed numbers with different denominators  
arith810 Word problem involving addition or subtraction of mixed numbers with different denominators  
arith815 Mixed number multiplication  
arith816 Multiplication of a mixed number and a whole number  
arith817 Division with a mixed number and a whole number  
arith068 Mixed number division  
arith820 Word problem involving multiplication or division with mixed numbers  
arith110 Decimal place value: Tenths and hundredths  
arith078 Rounding to tens or hundreds  
arith123 Rounding to hundreds or thousands  
arith221 Rounding decimals  
arith687 Fractional position on a number line  
arith092 Using a common denominator to order fractions  
arith829 Reading decimal position on a number line: Tenths  
arith830 Reading decimal position on a number line: Hundredths  
arith129 Introduction to ordering decimals  
arith608 Ordering decimals  
arith733 Using a calculator to convert a fraction to a rounded decimal  
arith087 Converting a decimal to a proper fraction in simplest form: Advanced  
arith724 Converting a decimal to a mixed number and an improper fraction in simplest form: Advanced  
arith609 Ordering fractions and decimals  
arith624 Addition of aligned decimals  
arith013 Decimal addition with 3 numbers  
arith735 Decimal subtraction: Basic  
arith736 Decimal subtraction: Advanced  
arith737 Decimal addition and subtraction with 3 or more numbers  
arith101 Estimating a sum of whole numbers  
arith131 Estimating a decimal sum or difference  
arith133 Word problem with addition of 3 or 4 decimals and whole numbers  
arith134 Word problem with subtraction of a whole number and a decimal: Regrouping with zeros  
arith017 Multiplication of a decimal by a whole number  
arith055 Decimal multiplication: Problem type 1  
arith082 Multiplication of a decimal by a power of ten  
arith752 Estimating a product of decimals  
arith135 Word problem with multiplication of a decimal and a whole number  
arith137 Word problem with multiplication of two decimals  
arith628 Word problem with multiple decimal operations: Problem type 1  
arith081 Division of a decimal by a whole number  
arith743 Division of a decimal by a 1-digit decimal  
arith019 Division of a decimal by a 2-digit decimal  
arith083 Division of a decimal by a power of ten  
arith138 Word problem with division of two decimals  
arith727 Converting a fraction to a terminating decimal: Basic

arith728 Converting a fraction to a terminating decimal: Advanced  
 arith730 Converting a fraction to a repeating decimal: Basic  
 arith731 Converting a fraction to a repeating decimal: Advanced  
 arith823 Writing ratios using different notations  
 arith663 Writing ratios for real-world situations  
 arith450 Identifying statements that describe a ratio  
 arith824 Simplifying a ratio of whole numbers: Problem type 1  
 arith825 Simplifying a ratio of decimals  
 arith827 Finding a unit price  
 arith455 Using tables to compare ratios  
 arith828 Computing unit prices to find the better buy  
 arith228 Word problem on unit rates associated with ratios of whole numbers: Decimal answers  
 arith064 Solving a word problem on proportions using a unit rate  
 arith452 Finding missing values in a table of equivalent ratios  
 arith453 Using a table of equivalent ratios to find a missing quantity in a ratio  
 arith834 Converting between percentages and decimals  
 arith090 Converting a percentage to a fraction in simplest form  
 arith839 Converting a decimal percentage to a fraction  
 arith002 Converting a fraction to a percentage: Denominator of 20, 25, or 50  
 arith843 Using a calculator to convert a fraction to a rounded percentage  
 arith840 Finding a percentage of a whole number  
 arith030 Finding a percentage of a whole number without a calculator: Basic  
 arith844 Finding a percentage of a whole number without a calculator: Advanced  
 arith845 Finding a percentage of a total amount: Real-world situations  
 arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount  
 arith857 Estimating a tip without a calculator  
 arith686 Writing a ratio as a percentage  
 arith069 Writing a ratio as a percentage without a calculator  
 arith850 Finding the rate of a tax or commission  
 unit005 U.S. Customary unit conversion with whole number values  
 unit001 Metric distance conversion with whole number values  
 unit012 Time unit conversion with whole number values  
 arith826 Simplifying a ratio of whole numbers: Problem type 2  
 unit034 Converting between metric and U.S. Customary unit systems

## Real Numbers

alge286 Plotting integers on a number line  
 arith691 Ordering integers  
 arith415 Using a number line to compare integers  
 mstat038 Reading the temperature from a thermometer  
 arith699 Writing a signed number for a real-world situation  
 arith400 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 1  
 arith511 Interpreting a table of signed numbers that relate to a real-world situation: Problem type 2  
 arith416 Comparing signed numbers relating to a real-world situation  
 arith402 Plotting opposite integers on a number line  
 arith403 Finding opposites of integers  
 arith667 Plotting fractions on a number line  
 arith605 Plotting rational numbers on a number line  
 arith016 Square root of a perfect square  
 arith763 Using a calculator to approximate a square root  
 arith515 Approximating the location of irrational numbers on a number line  
 arith712 Ordering real numbers  
 arith071 Absolute value of a number  
 arith412 Finding all numbers with a given absolute value  
 arith200 Integer addition: Problem type 1  
 arith108 Integer addition: Problem type 2  
 arith430 Identifying relative change when combining two quantities  
 arith688 Integer subtraction: Problem type 1  
 arith689 Integer subtraction: Problem type 2

arith690 Integer subtraction: Problem type 3  
arith754 Addition and subtraction with 3 integers  
arith755 Addition and subtraction with 4 or 5 integers  
arith701 Word problem with addition or subtraction of integers  
arith231 Integer multiplication and division  
arith800 Multiplication of 3 or 4 integers  
arith952 Word problem with multiplication or division of integers  
alge660 Identifying equivalent signed fractions  
arith116 Signed fraction addition or subtraction: Basic  
arith864 Signed fraction subtraction involving double negation  
arith106 Signed fraction addition or subtraction: Advanced  
arith811 Addition and subtraction of 3 fractions involving signs  
arith822 Signed fraction multiplication: Basic  
arith105 Signed fraction multiplication: Advanced  
arith814 Signed fraction division  
arith117 Signed decimal addition and subtraction  
arith234 Signed decimal addition and subtraction with 3 numbers  
arith750 Signed decimal multiplication  
arith751 Signed decimal division  
arith440 Operations with absolute value: Problem type 1  
arith104 Operations with absolute value: Problem type 2  
alge694 Computing the distance between two integers on a number line  
arith692 Writing expressions using exponents  
arith233 Introduction to exponents  
arith683 Power of 10: Positive exponent  
arith048 Order of operations with whole numbers  
arith051 Order of operations with whole numbers and grouping symbols  
arith693 Order of operations with whole numbers and exponents: Basic  
arith713 Order of operations with whole numbers and exponents: Advanced  
arith821 Exponents and fractions  
arith859 Order of operations with fractions: Problem type 1  
arith860 Order of operations with fractions: Problem type 2  
arith861 Order of operations with fractions: Problem type 3  
arith753 Squaring decimal bases: Products greater than 0.1  
arith741 Exponents and decimals: Products less than 0.1  
arith720 Order of operations with decimals: Problem type 1  
arith746 Order of operations with decimals: Problem type 2  
arith747 Order of operations with decimals: Problem type 3  
arith702 Exponents and integers: Problem type 1  
arith703 Exponents and integers: Problem type 2  
arith704 Exponents and signed fractions  
arith118 Order of operations with integers  
arith600 Order of operations with integers and exponents  
alge284 Evaluating an algebraic expression: Whole number addition or subtraction  
alge683 Evaluating an algebraic expression: Whole number multiplication or division  
alge285 Evaluating an algebraic expression: Whole numbers with two operations  
alge649 Evaluating a formula  
alge648 Evaluating an algebraic expression: Whole numbers with one operation and an exponent  
alge832 Evaluating an algebraic expression: Whole number operations and exponents  
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction  
alge004 Evaluating a quadratic expression: Integers  
mstat065 Converting between temperatures in Fahrenheit and Celsius  
alge808 Evaluating a linear expression: Signed fraction multiplication with addition or subtraction  
alge302 Evaluating a linear expression: Signed decimal addition and subtraction  
alge303 Evaluating a linear expression: Signed decimal multiplication with addition or subtraction  
alge001 Identifying numbers as integers or non-integers  
arith513 Identifying rational decimal numbers  
arith432 Identifying true statements about rational and irrational numbers  
alge002 Identifying numbers as rational or irrational  
alge700 Combining like terms: Whole number coefficients  
alge432 Introduction to adding fractions with variables and common denominators  
alge607 Combining like terms: Integer coefficients

alge187 Properties of addition  
alge666 Combining like terms: Fractional coefficients  
alge665 Combining like terms: Decimal coefficients  
arith409 Introduction to the distributive property  
arith657 Understanding the distributive property  
alge310 Multiplying a constant and a linear monomial  
alge606 Distributive property: Whole number coefficients  
alge604 Distributive property: Integer coefficients  
alge610 Distributive property: Fractional coefficients  
arith056 Factors  
arith034 Prime numbers  
arith035 Prime factorization  
arith033 Greatest common factor of 2 numbers  
arith516 Greatest common factor of 3 numbers  
alge605 Factoring a linear binomial  
alge612 Identifying parts in an algebraic expression  
alge613 Identifying equivalent algebraic expressions  
alge188 Properties of real numbers  
alge608 Using distribution and combining like terms to simplify: Univariate  
alge667 Identifying properties used to simplify an algebraic expression  
alge609 Using distribution with double negation and combining like terms to simplify: Multivariate  
alge293 Combining like terms in a quadratic expression  
alge650 Identifying solutions to a one-step linear equation: Problem type 1  
alge651 Identifying solutions to a one-step linear equation: Problem type 2  
alge009 Additive property of equality with whole numbers  
alge801 Additive property of equality with fractions and mixed numbers  
alge800 Additive property of equality with decimals  
alge010 Additive property of equality with integers  
alge836 Additive property of equality with signed fractions  
alge008 Multiplicative property of equality with whole numbers  
alge646 Multiplicative property of equality with whole numbers: Fractional answers  
alge820 Multiplicative property of equality with fractions  
alge825 Multiplicative property of equality with decimals  
alge797 Multiplicative property of equality with integers  
alge012 Multiplicative property of equality with signed fractions  
geom300 Perimeter of a square or a rectangle  
geom221 Finding the missing length in a figure  
alge615 Writing algebraic expressions for the perimeter of a figure  
geom019 Area of a square or a rectangle  
geom340 Area of a piecewise rectangular figure  
geom562 Area between two rectangles  
alge616 Writing algebraic expressions for the area of a figure  
geom410 Word problem involving the area of a square or a rectangle  
geom142 Word problem involving the area between two rectangles  
geom022 Area of a parallelogram  
geom801 Area of a triangle  
geom023 Area of a trapezoid  
geom016 Circumference of a circle  
geom301 Perimeter involving rectangles and circles  
geom026 Area of a circle  
geom802 Circumference and area of a circle  
geom477 Circumference and area of a circle: Exact answers in terms of pi  
geom302 Area involving rectangles and circles  
geom563 Area between two concentric circles  
geom036 Word problem involving the area between two concentric circles  
geom214 Area involving inscribed figures  
geom311 Volume of a rectangular prism  
geom571 Word problem involving the volume of a rectangular prism  
geom558 Word problem involving the rate of filling or emptying a rectangular prism  
geom090 Volume of a triangular prism  
geom035 Volume of a cylinder  
geom573 Word problem involving the volume of a cylinder

geom092 Word problem involving the rate of filling or emptying a cylinder  
 geom033 Volume of a pyramid  
 geom622 Volume of a cone  
 geom086 Volume of a cone: Exact answers in terms of  $\pi$   
 geom841 Volume of a sphere  
 geom031 Surface area of a cube or a rectangular prism  
 geom091 Surface area of a triangular prism  
 geom621 Surface area of a cylinder  
 geom034 Surface area of a cylinder: Exact answers in terms of  $\pi$   
 geom842 Surface area of a sphere

### Linear Equations

alge834 Identifying solutions to a linear equation in one variable: Two-step equations  
 alge803 Using two steps to solve an equation with whole numbers  
 alge266 Additive property of equality with a negative coefficient  
 alge006 Solving a two-step equation with integers  
 alge815 Introduction to using substitution to solve a linear equation  
 alge200 Solving an equation to find the value of an expression  
 alge920 Introduction to solving an equation with parentheses  
 alge837 Solving a multi-step equation given in fractional form  
 alge986 Identifying properties used to solve a linear equation  
 alge824 Solving a two-step equation with signed decimals  
 alge838 Introduction to solving an equation with variables on the same side  
 alge862 Solving a linear equation with several occurrences of the variable: Variables on the same side  
 alge611 Introduction to solving a linear equation with a variable on each side  
 alge863 Solving a linear equation with several occurrences of the variable: Variables on both sides  
 alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution  
 alge013 Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution  
 alge209 Solving a linear equation with several occurrences of the variable: Variables on both sides and two distributions  
 alge614 Clearing fractions in an equation  
 alge420 Solving a linear equation with several occurrences of the variable: Fractional forms with monomial numerators  
 alge208 Solving a two-step equation with signed fractions  
 alge061 Solving a linear equation with several occurrences of the variable: Variables on both sides and fractional coefficients  
 alge179 Solving a linear equation with several occurrences of the variable: Fractional forms with binomial numerators  
 alge742 Solving equations with zero, one, or infinitely many solutions  
 alge511 Solving for a variable in terms of other variables using addition or subtraction: Basic  
 alge512 Solving for a variable in terms of other variables using addition or subtraction: Advanced  
 alge513 Solving for a variable in terms of other variables using multiplication or division: Basic  
 alge514 Solving for a variable in terms of other variables using multiplication or division: Advanced  
 alge517 Solving for a variable in terms of other variables using addition or subtraction with division  
 alge518 Solving for a variable inside parentheses in terms of other variables  
 alge507 Solving for a variable in terms of other variables in a linear equation with fractions  
 alge603 Introduction to solving an absolute value equation  
 alge864 Solving an absolute value equation: Problem type 1  
 alge865 Solving an absolute value equation: Problem type 2  
 alge866 Solving an absolute value equation: Problem type 3  
 alge867 Solving an absolute value equation: Problem type 4  
 alge733 Writing a one-step expression for a real-world situation  
 alge831 Translating a phrase into a one-step expression  
 alge291 Translating a phrase into a two-step expression  
 alge016 Translating a sentence into a one-step equation  
 alge841 Translating a sentence into a multi-step equation  
 arith504 Writing an equation to represent a proportional relationship



alge802 Solving a fraction word problem using a linear equation of the form  $Ax = B$   
alge671 Choosing stories that can be represented by given one-step equations  
alge628 Writing an equation of the form  $Ax + B = C$  to solve a word problem  
alge618 Comparing arithmetic and algebraic solutions to a word problem  
alge672 Choosing stories that can be represented by given two-step equations  
alge173 Solving a decimal word problem using a linear equation of the form  $Ax + B = C$   
alge629 Writing an equation of the form  $A(x + B) = C$  to solve a word problem  
alge014 Solving a word problem with two unknowns using a linear equation  
alge673 Writing an equation to represent a real-world problem: Variable on both sides  
alge674 Writing and solving a real-world problem given an equation with the variable on both sides  
alge730 Writing a multi-step equation for a real-world situation  
alge219 Solving a decimal word problem using a linear equation with the variable on both sides  
alge704 Solving a fraction word problem using a linear equation with the variable on both sides  
alge792 Solving a word problem with three unknowns using a linear equation  
alge842 Solving a word problem involving consecutive integers  
alge794 Solving a value mixture problem using a linear equation  
alge218 Solving a word problem involving rates and time conversion  
alge823 Solving a one-step word problem using the formula  $d = rt$   
alge796 Solving a distance, rate, time problem using a linear equation  
unit035 Converting between compound units: Basic  
unit036 Converting between compound units: Advanced  
arith514 Converting a repeating decimal to a fraction  
alge819 Solving a proportion of the form  $x/a=b/c$ : Basic  
alge272 Solving a proportion of the form  $x/a = b/c$   
alge840 Solving a proportion of the form  $(x+a)\div b = c\div d$   
alge271 Solving a proportion of the form  $a/(x+b) = c/x$   
alge658 Introduction to solving a rational equation  
alge060 Solving a rational equation that simplifies to linear: Denominator  $x$   
arith610 Word problem on proportions: Problem type 1  
arith611 Word problem on proportions: Problem type 2  
arith862 Applying the percent equation: Problem type 1  
arith863 Applying the percent equation: Problem type 2  
arith849 Finding the total amount given the percentage of a partial amount  
arith852 Finding the multiplier to give a final amount after a percentage increase or decrease  
arith851 Finding the final amount given the original amount and a percentage increase or decrease  
arith847 Finding the sale price given the original price and percent discount  
arith074 Finding the sale price without a calculator given the original price and percent discount  
arith848 Finding the total cost including tax or markup  
arith855 Finding the original amount given the result of a percentage increase or decrease  
arith031 Finding the original price given the sale price and percent discount  
arith858 Finding the percentage increase or decrease: Basic  
arith225 Finding the percentage increase or decrease: Advanced  
unit052 Finding the absolute error and percent error of a measurement  
arith854 Computing a percent mixture  
alge795 Solving a percent mixture problem using a linear equation  
arith232 Finding simple interest without a calculator  
arith853 Introduction to compound interest  
geom564 Finding side lengths of squares given an area and a perimeter  
geom648 Finding side lengths of rectangles given one dimension and an area or a perimeter  
geom444 Word problem on optimizing an area or perimeter  
geom561 Finding the dimensions of a rectangle given its perimeter and a relationship between sides  
geom143 Finding the perimeter or area of a rectangle given one of these values  
geom817 Finding a side length given the perimeter and side lengths with variables  
geom838 Circumference ratios  
geom039 Finding supplementary and complementary angles  
geom500 Solving equations involving vertical angles and linear pairs  
geom001 Finding an angle measure of a triangle given two angles  
geom628 Finding angle measures of a triangle given angles with variables  
geom037 Similar polygons  
geom038 Similar right triangles  
geom337 Indirect measurement  
geom538 Finding lengths using scale models

geom539 Finding a scale factor: Same units  
 geom541 Using a scale drawing to find actual area  
 geom542 Reproducing a scale drawing at a different scale

### Linear Inequalities

alge015 Translating a sentence by using an inequality symbol  
 alge845 Translating a sentence into a one-step inequality  
 alge653 Introduction to identifying solutions to an inequality  
 alge748 Writing an inequality for a real-world situation  
 alge017 Graphing a linear inequality on the number line  
 alge822 Writing an inequality given a graph on the number line  
 alge186 Translating a sentence into a compound inequality  
 alge166 Graphing a compound inequality on the number line  
 alge847 Writing a compound inequality given a graph on the number line  
 set001 Set builder notation  
 set002 Union and intersection of finite sets  
 alge652 Identifying solutions to a one-step linear inequality  
 alge848 Additive property of inequality with whole numbers  
 alge849 Additive property of inequality with integers  
 alge852 Additive property of inequality with signed fractions  
 alge853 Additive property of inequality with signed decimals  
 alge809 Multiplicative property of inequality with whole numbers  
 alge854 Multiplicative property of inequality with integers  
 alge964 Multiplicative property of inequality with signed fractions  
 alge844 Identifying solutions to a two-step linear inequality in one variable  
 alge636 Solving a two-step linear inequality with whole numbers  
 alge855 Solving a two-step linear inequality: Problem type 1  
 alge856 Solving a two-step linear inequality: Problem type 2  
 alge857 Solving a two-step linear inequality with a fractional coefficient  
 alge977 Solving a linear inequality with multiple occurrences of the variable: Problem type 1  
 alge858 Solving a linear inequality with multiple occurrences of the variable: Problem type 2  
 alge859 Solving a linear inequality with multiple occurrences of the variable: Problem type 3  
 alge860 Solving inequalities with no solution or all real numbers as solutions  
 alge746 Solving a compound linear inequality: Graph solution, basic  
 alge861 Solving a compound linear inequality: Graph solution, advanced  
 alge621 Solving a word problem using a one-step linear inequality  
 alge846 Translating a sentence into a multi-step inequality  
 alge619 Solving a word problem using a two-step linear inequality and describing the solution  
 alge623 Solving a word problem using a two-step linear inequality  
 alge749 Solving a decimal word problem using a two-step linear inequality  
 alge750 Solving a decimal word problem using a linear inequality with the variable on both sides  
 alge868 Solving an absolute value inequality: Problem type 1  
 alge943 Writing an absolute value inequality given a graph on the number line  
 alge869 Solving an absolute value inequality: Problem type 2  
 alge870 Solving an absolute value inequality: Problem type 3  
 alge871 Solving an absolute value inequality: Problem type 4  
 alge872 Solving an absolute value inequality: Problem type 5

### Functions and Lines

alge064 Reading a point in the coordinate plane  
 alge067 Plotting a point in the coordinate plane  
 alge693 Plotting a point in the coordinate plane: Mixed number coordinates  
 arith404 Naming the quadrant or axis of a point given its graph  
 arith405 Naming the quadrant or axis of a point given its coordinates  
 arith406 Naming the quadrant or axis of a point given the signs of its coordinates  
 alge695 Finding distances between points that share a common coordinate given the graph

alge696 Finding distances between points that share a common coordinate given their coordinates  
alge282 Function tables with two-step rules  
alge850 Table for a linear equation  
fun005 Writing a function rule given a table of ordered pairs: One-step rules  
fun006 Writing a function rule given a table of ordered pairs: Two-step rules  
alge873 Identifying solutions to a linear equation in two variables  
alge066 Finding a solution to a linear equation in two variables  
alge877 Graphing a linear equation of the form  $y = mx$   
alge878 Graphing a line given its equation in slope-intercept form: Integer slope  
alge879 Graphing a line given its equation in slope-intercept form: Fractional slope  
alge880 Graphing a line given its equation in standard form  
alge198 Graphing a vertical or horizontal line  
alge884 Finding x- and y-intercepts given the graph of a line on a grid  
alge924 Finding x- and y-intercepts of a line given the equation: Basic  
alge210 Finding x- and y-intercepts of a line given the equation: Advanced  
alge197 Graphing a line given its x- and y-intercepts  
alge881 Graphing a line by first finding its x- and y-intercepts  
mstat007 Interpreting a line graph  
alge575 Finding slope given the graph of a line in quadrant 1 that models a real-world situation  
alge875 Classifying slopes given graphs of lines  
alge886 Finding slope given the graph of a line on a grid  
alge887 Finding slope given two points on the line  
alge885 Finding the slope of horizontal and vertical lines  
alge888 Finding the coordinate that yields a given slope  
alge259 Graphing a line given its slope and y-intercept  
alge196 Graphing a line through a given point with a given slope  
alge625 Identifying linear equations: Basic  
alge876 Identifying linear equations: Advanced  
alge874 Identifying linear functions given ordered pairs  
alge891 Rewriting a linear equation in the form  $Ax + By = C$   
alge889 Finding the slope and y-intercept of a line given its equation in the form  $y = mx + b$   
alge890 Finding the slope and y-intercept of a line given its equation in the form  $Ax + By = C$   
alge882 Graphing a line by first finding its slope and y-intercept  
alge258 Writing an equation of a line given its slope and y-intercept  
alge892 Writing an equation and graphing a line given its slope and y-intercept  
alge314 Finding the slope, y-intercept, and equation for a linear function given a table of values  
alge893 Writing an equation in slope-intercept form given the slope and a point  
alge318 Finding the slope and a point on a line given its equation in point-slope form  
alge883 Graphing a line given its equation in point-slope form  
alge894 Writing an equation in point-slope form given the slope and a point  
alge313 Writing an equation in standard form given the slope and a point  
alge070 Writing an equation of a line given the y-intercept and another point  
alge072 Writing the equation of the line through two given points  
alge073 Writing the equations of vertical and horizontal lines through a given point  
alge322 Comparing linear functions to the parent function  $y=x$   
geom806 Finding slopes of lines parallel and perpendicular to a line given in slope-intercept form  
geom807 Finding slopes of lines parallel and perpendicular to a line given in the form  $Ax + By = C$   
alge895 Identifying parallel and perpendicular lines from equations  
geom808 Writing equations of lines parallel and perpendicular to a given line through a point  
geom462 Identifying parallel and perpendicular lines from coordinates  
alge630 Finding outputs of a one-step function that models a real-world situation: Two variable equation  
alge632 Finding outputs of a two-step function with decimals that models a real-world situation: Two variable equation  
alge633 Finding inputs and outputs of a two-step function that models a real-world situation: Two variable equation  
alge655 Writing and evaluating a function that models a real-world situation: Basic  
alge897 Writing and evaluating a function that models a real-world situation: Advanced  
alge656 Writing an equation and drawing its graph to model a real-world situation: Basic  
alge701 Writing an equation and drawing its graph to model a real-world situation: Advanced  
alge817 Finding the initial amount and rate of change given a table for a linear function  
alge818 Finding the initial amount and rate of change given a graph of a linear function  
alge992 Combining functions to write a new function that models a real-world situation

alge987 Comparing properties of linear functions given in different forms  
 alge989 Interpreting the parameters of a linear function that models a real-world situation  
 alge805 Application problem with a linear function: Finding a coordinate given the slope and a point  
 alge806 Application problem with a linear function: Finding a coordinate given two points  
 alge670 Identifying independent and dependent quantities from tables and graphs  
 mstat052 Identifying independent and dependent variables from equations or real-world situations  
 alge991 Solving a linear equation by graphing  
 mstat094 Constructing a scatter plot  
 mstat030 Sketching the line of best fit  
 mstat023 Scatter plots and correlation  
 mstat068 Predictions from the line of best fit  
 mstat067 Approximating the equation of a line of best fit and making predictions  
 mstat069 Computing residuals  
 mstat070 Interpreting residual plots  
 mstat093 Classifying linear and nonlinear relationships from scatter plots  
 mstat071 Linear relationship and the correlation coefficient  
 mstat096 Identifying outliers and clustering in scatter plots  
 mstat074 Identifying correlation and causation  
 alge982 Identifying direct variation equations  
 alge938 Identifying direct variation from ordered pairs and writing equations  
 alge904 Writing a direct variation equation  
 alge175 Word problem on direct variation  
 alge828 Interpreting direct variation from a graph  
 fun032 Identifying functions from relations  
 fun010 Vertical line test  
 fun016 Domain and range from ordered pairs  
 fun001 Table for a linear function  
 pcalc760 Evaluating functions: Linear and quadratic or cubic  
 fun033 Variable expressions as inputs of functions: Problem type 1  
 fun030 Evaluating a piecewise-defined function  
 alge294 Finding outputs of a one-step function that models a real-world situation: Function notation  
 alge295 Finding outputs of a two-step function with decimals that models a real-world situation: Function notation  
 alge296 Finding inputs and outputs of a two-step function that models a real-world situation: Function notation  
 alge990 Domain and range of a linear function that models a real-world situation  
 fun026 Finding an output of a function from its graph  
 pcalc761 Finding inputs and outputs of a function from its graph  
 fun007 Domain and range from the graph of a discrete relation  
 alge312 Finding domain and range from a linear graph in context  
 pcalc750 Finding intercepts of a nonlinear function given its graph  
 alge999 Finding where a function is increasing, decreasing, or constant given the graph  
 pcalc752 Finding local maxima and minima of a function given the graph  
 mstat018 Choosing a graph to fit a narrative: Basic  
 mstat051 Choosing a graph to fit a narrative: Advanced  
 alge896 Graphing an integer function and finding its range for a given domain  
 alge570 Graphing a function of the form  $f(x) = ax + b$ : Integer slope  
 alge571 Graphing a function of the form  $f(x) = ax + b$ : Fractional slope  
 alge913 Graphing an absolute value equation of the form  $y = A - |x - h| + k$   
 alge900 Graphing an absolute value equation in the plane: Basic  
 alge168 Graphing an absolute value equation in the plane: Advanced  
 alge954 Graphing a parabola of the form  $y = ax^2$   
 alge955 Graphing a parabola of the form  $y = ax^2 + c$   
 alge572 Graphing a function of the form  $f(x) = ax^2$   
 alge573 Graphing a function of the form  $f(x) = ax^2 + c$   
 alge253 Graphing a parabola of the form  $y = (x-h)^2 + k$   
 alge262 Graphing a cubic function of the form  $y = ax^3$   
 fun031 Graphing a piecewise-defined function: Problem type 1  
 alge997 Finding the average rate of change of a function given its equation  
 alge998 Finding the average rate of change of a function given its graph  
 alge953 Translating the graph of a parabola: One step  
 alge723 How the leading coefficient affects the shape of a parabola  
 alge898 Translating the graph of an absolute value function: One step

alge899 Translating the graph of an absolute value function: Two steps  
 alge901 How the leading coefficient affects the graph of an absolute value function  
 alge185 Writing an equation for a function after a vertical translation  
 pcalc769 Translating the graph of a function: One step  
 pcalc770 Translating the graph of a function: Two steps  
 pcalc771 Transforming the graph of a function by reflecting over an axis  
 pcalc772 Transforming the graph of a function by shrinking or stretching  
 pcalc773 Transforming the graph of a function using more than one transformation  
 fun020 Writing an equation for a function after a vertical and horizontal translation  
 alge644 Finding the first terms of an arithmetic sequence using an explicit rule  
 alge925 Finding the next terms of an arithmetic sequence with whole numbers  
 alge906 Finding the next terms of an arithmetic sequence with integers  
 alge908 Finding the first terms of a sequence using a recursive rule  
 alge979 Identifying arithmetic sequences and finding the common difference  
 alge931 Finding a specified term of an arithmetic sequence given the first terms  
 pcalc085 Finding a specified term of an arithmetic sequence given the common difference and first term  
 alge909 Writing an explicit rule for an arithmetic sequence  
 alge910 Writing a recursive rule for an arithmetic sequence

### Linear Systems

alge914 Identifying solutions to a system of linear equations  
 alge075 Classifying systems of linear equations from graphs  
 alge725 Graphically solving a system of linear equations  
 pcalc820 Using a graphing calculator to solve a system of linear equations: Basic  
 pcalc821 Using a graphing calculator to solve a system of linear equations: Advanced  
 alge317 Writing a system of linear equations given its graph  
 alge816 Solving a system of linear equations of the form  $y = mx + b$   
 alge751 Solving a system of linear equations using substitution  
 alge915 Solving a system of linear equations using elimination with addition  
 alge076 Solving a system of linear equations using elimination with multiplication and addition  
 alge916 Solving a system of linear equations with fractional coefficients  
 alge917 Solving a system of linear equations with decimal coefficients  
 alge634 Solving systems of linear equations with 0, 1, or infinitely many solutions  
 alge988 Identifying the operations used to create equivalent systems of equations  
 alge753 Solving a 3x3 system of linear equations: Problem type 1  
 pcalc037 Scalar multiplication of a matrix  
 pcalc038 Addition or subtraction of matrices  
 pcalc740 Linear combination of matrices  
 pcalc712 Gauss-Jordan elimination with a 2x2 matrix  
 alge263 Interpreting the graphs of two functions  
 alge078 Solving a word problem involving a sum and another basic relationship using a system of linear equations  
 alge919 Solving a word problem using a system of linear equations of the form  $Ax + By = C$   
 alge918 Solving a word problem using a system of linear equations of the form  $y = mx + b$   
 alge184 Solving a value mixture problem using a system of linear equations  
 alge192 Solving a percent mixture problem using a system of linear equations  
 alge224 Solving a distance, rate, time problem using a system of linear equations  
 alge172 Solving a tax rate or interest rate problem using a system of linear equations  
 alge793 Solving a word problem using a 3x3 system of linear equations: Problem type 1  
 alge912 Identifying solutions to a linear inequality in two variables  
 alge225 Graphing a linear inequality in the plane: Vertical or horizontal line  
 alge720 Graphing a linear inequality in the plane: Slope-intercept form  
 alge018 Graphing a linear inequality in the plane: Standard form  
 alge315 Writing an inequality given its graph in the plane: Horizontal or vertical boundary line  
 alge316 Writing an inequality given its graph in the plane: Slanted boundary line  
 alge079 Graphing a system of two linear inequalities: Basic  
 alge921 Graphing a system of two linear inequalities: Advanced  
 alge922 Graphing a system of three linear inequalities  
 alge729 Writing a multi-step inequality for a real-world situation  
 pcalc093 Solving a word problem using a system of linear inequalities: Problem type 1

### Exponents and Exponential Functions

alge821 Understanding the product rule of exponents  
 alge024 Introduction to the product rule of exponents  
 alge311 Product rule with positive exponents: Univariate  
 alge030 Product rule with positive exponents: Multivariate  
 arith029 Ordering numbers with positive exponents  
 alge826 Understanding the power rules of exponents  
 alge306 Introduction to the power of a power rule of exponents  
 alge305 Introduction to the power of a product rule of exponents  
 alge307 Power rules with positive exponents: Multivariate products  
 alge308 Power rules with positive exponents: Multivariate quotients  
 alge756 Power and product rules with positive exponents  
 alge451 Simplifying a ratio of multivariate monomials: Basic  
 alge827 Introduction to the quotient rule of exponents  
 alge452 Simplifying a ratio of univariate monomials  
 alge026 Quotient of expressions involving exponents  
 alge453 Simplifying a ratio of multivariate monomials: Advanced  
 alge927 Power and quotient rules with positive exponents  
 alge790 Evaluating expressions with exponents of zero  
 arith684 Power of 10: Negative exponent  
 arith729 Evaluating an expression with a negative exponent: Whole number base  
 arith042 Evaluating an expression with a negative exponent: Positive fraction base  
 arith043 Evaluating an expression with a negative exponent: Negative integer base  
 arith024 Ordering numbers with negative exponents  
 alge791 Rewriting an algebraic expression without a negative exponent  
 alge961 Introduction to the product rule with negative exponents  
 alge028 Product rule with negative exponents  
 alge755 Quotient rule with negative exponents: Problem type 1  
 alge926 Quotient rule with negative exponents: Problem type 2  
 alge025 Power of a power rule with negative exponents  
 alge799 Power rules with negative exponents  
 alge928 Power and quotient rules with negative exponents: Problem type 1  
 alge929 Power and quotient rules with negative exponents: Problem type 2  
 alge757 Power, product, and quotient rules with negative exponents  
 scinot023 Introduction to scientific notation with positive exponents  
 arith036 Scientific notation with positive exponent  
 scinot024 Introduction to scientific notation with negative exponents  
 arith037 Scientific notation with negative exponent  
 scinot012 Converting between scientific notation and standard form in a real-world situation  
 scinot021 Expressing calculator notation as scientific notation  
 scinot008 Multiplying numbers written in scientific notation: Basic  
 scinot009 Multiplying numbers written in scientific notation: Advanced  
 scinot019 Multiplying numbers written in decimal form or scientific notation in a real-world situation  
 scinot010 Dividing numbers written in scientific notation: Basic  
 scinot011 Dividing numbers written in scientific notation: Advanced  
 scinot013 Finding the scale factor between numbers given in scientific notation in a real-world situation  
 alge971 Table for an exponential function  
 alge969 Graphing an exponential function:  $f(x) = ax$   
 alge970 Graphing an exponential function:  $f(x) = a(b)x$   
 alge712 Graphing an exponential function and its asymptote:  $f(x) = a(b)x$   
 alge321 Finding domain and range from the graph of an exponential function  
 pcalc922 Translating the graph of an exponential function  
 alge830 Evaluating an exponential function that models a real-world situation  
 alge301 Solving an exponential equation by finding common bases: Linear exponents  
 alge177 Finding a final amount in a word problem on exponential growth or decay  
 alge741 Finding the final amount in a word problem on compound interest  
 alge966 Finding the initial amount and rate of change given an exponential function  
 alge968 Writing an equation that models exponential growth or decay  
 alge967 Writing an exponential function rule given a table of ordered pairs  
 mstat103 Choosing an exponential model and using it to make a prediction  
 alge993 Comparing linear, polynomial, and exponential functions



alge645 Finding the first terms of a geometric sequence using an explicit rule  
 alge933 Finding the next terms of a geometric sequence with whole numbers  
 alge907 Finding the next terms of a geometric sequence with signed numbers  
 alge981 Identifying arithmetic and geometric sequences  
 alge980 Identifying geometric sequences and finding the common ratio  
 alge934 Finding a specified term of a geometric sequence given the first terms  
 pcalc086 Finding a specified term of a geometric sequence given the common ratio and first term  
 pcalc713 Arithmetic and geometric sequences: Identifying and writing an explicit rule  
 alge911 Writing recursive rules for arithmetic and geometric sequences  
 alge965 Identifying linear, quadratic, and exponential functions given ordered pairs

### Polynomials and Factoring

alge758 Degree and leading coefficient of a univariate polynomial  
 alge031 Degree of a multivariate polynomial  
 alge798 Simplifying a sum or difference of two univariate polynomials  
 alge029 Simplifying a sum or difference of three univariate polynomials  
 alge932 Simplifying a sum or difference of multivariate polynomials  
 alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient  
 alge972 Multiplying a univariate polynomial by a monomial with a negative coefficient  
 alge835 Multiplying a multivariate polynomial by a monomial  
 alge033 Multiplying binomials with leading coefficients of 1  
 alge983 Multiplying binomials with leading coefficients greater than 1  
 alge765 Multiplying binomials in two variables  
 alge764 Multiplying conjugate binomials: Univariate  
 alge081 Multiplying conjugate binomials: Multivariate  
 alge032 Squaring a binomial: Univariate  
 alge068 Squaring a binomial: Multivariate  
 alge973 Multiplying binomials with negative coefficients  
 alge935 Multiplication involving binomials and trinomials in one variable  
 alge180 Multiplication involving binomials and trinomials in two variables  
 alge759 Dividing a polynomial by a monomial: Univariate  
 alge760 Dividing a polynomial by a monomial: Multivariate  
 alge761 Polynomial long division: Problem type 1  
 alge762 Polynomial long division: Problem type 2  
 alge763 Polynomial long division: Problem type 3  
 alge985 Closure properties of integers and polynomials  
 alge736 Introduction to the GCF of two monomials  
 alge930 Greatest common factor of three univariate monomials  
 alge037 Greatest common factor of two multivariate monomials  
 alge738 Factoring out a monomial from a polynomial: Univariate  
 alge739 Factoring out a monomial from a polynomial: Multivariate  
 alge949 Factoring out a binomial from a polynomial: GCF factoring, basic  
 alge923 Factoring a univariate polynomial by grouping: Problem type 1  
 alge950 Factoring a univariate polynomial by grouping: Problem type 2  
 alge951 Factoring a multivariate polynomial by grouping: Problem type 1  
 alge952 Factoring a multivariate polynomial by grouping: Problem type 2  
 alge039 Factoring a quadratic with leading coefficient 1  
 alge942 Factoring a quadratic in two variables with leading coefficient 1  
 alge936 Factoring out a constant before factoring a quadratic  
 alge939 Factoring a quadratic with leading coefficient greater than 1: Problem type 1  
 alge940 Factoring a quadratic with leading coefficient greater than 1: Problem type 2  
 alge941 Factoring a quadratic with leading coefficient greater than 1: Problem type 3  
 alge978 Factoring a quadratic by the ac-method  
 alge265 Factoring a quadratic in two variables with leading coefficient greater than 1  
 alge937 Factoring a quadratic with a negative leading coefficient  
 alge944 Factoring a perfect square trinomial with leading coefficient 1  
 alge945 Factoring a perfect square trinomial with leading coefficient greater than 1  
 alge946 Factoring a perfect square trinomial in two variables  
 alge290 Factoring a difference of squares in one variable: Basic



alge947 Factoring a difference of squares in one variable: Advanced  
 alge839 Factoring a difference of squares in two variables  
 alge948 Factoring a polynomial involving a GCF and a difference of squares: Univariate  
 alge833 Factoring a polynomial involving a GCF and a difference of squares: Multivariate  
 alge041 Factoring a product of a quadratic trinomial and a monomial  
 alge042 Factoring with repeated use of the difference of squares formula  
 alge044 Factoring a sum or difference of two cubes

### Quadratic Functions and Equations

alge681 Solving an equation written in factored form  
 alge956 Finding the roots of a quadratic equation of the form  $ax^2 + bx = 0$   
 alge045 Finding the roots of a quadratic equation with leading coefficient 1  
 alge048 Finding the roots of a quadratic equation with leading coefficient greater than 1  
 alge211 Solving a quadratic equation needing simplification  
 alge323 Finding the zeros of a quadratic function given its equation  
 alge163 Writing a quadratic equation given the roots and the leading coefficient  
 alge703 Solving a word problem using a quadratic equation with rational roots  
 arith601 Square root of a rational perfect square  
 arith760 Square roots of perfect squares with signs  
 arith093 Simplifying the square root of a whole number less than 100  
 arith762 Simplifying the square root of a whole number greater than 100  
 alge962 Solving an equation of the form  $x^2 = a$  using the square root property  
 alge958 Solving a quadratic equation using the square root property: Decimal answers, basic  
 alge959 Solving a quadratic equation using the square root property: Decimal answers, advanced  
 alge092 Solving a quadratic equation using the square root property: Exact answers, basic  
 alge227 Solving a quadratic equation using the square root property: Exact answers, advanced  
 alge094 Completing the square  
 alge960 Solving a quadratic equation by completing the square: Decimal answers  
 alge780 Solving a quadratic equation by completing the square: Exact answers  
 alge095 Applying the quadratic formula: Exact answers  
 alge963 Applying the quadratic formula: Decimal answers  
 alge214 Discriminant of a quadratic equation  
 alge524 Solving a word problem using a quadratic equation with irrational roots  
 alge974 Finding the vertex, x-intercepts, and axis of symmetry from the graph of a parabola  
 alge569 Graphing a parabola of the form  $y = x^2 + bx + c$   
 pcalc746 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Integer coefficients  
 pcalc747 Graphing a parabola of the form  $y = ax^2 + bx + c$ : Rational coefficients  
 alge320 Writing a quadratic function given its zeros  
 alge277 Finding the x-intercept(s) and the vertex of a parabola  
 pcalc714 Using a graphing calculator to find the zeros of a quadratic function  
 pcalc793 Using a graphing calculator to find the x-intercept(s) and vertex of a quadratic function  
 alge319 Rewriting a quadratic function in standard form  
 pcalc774 Rewriting a quadratic function to find the vertex of its graph  
 pcalc775 Finding the maximum or minimum of a quadratic function  
 alge785 Word problem involving the maximum or minimum of a quadratic function  
 alge975 Domain and range from the graph of a parabola  
 alge976 Range of a quadratic function  
 pcalc680 Writing the equation of a quadratic function given its graph  
 alge957 Solving a quadratic equation by graphing  
 alge996 Comparing properties of quadratic functions given in different forms  
 alge702 Classifying the graph of a function  
 mstat102 Choosing a quadratic model and using it to make a prediction  
 pcalc748 Graphing a quadratic inequality: Problem type 1  
 pcalc749 Graphing a quadratic inequality: Problem type 2  
 alge994 Graphically solving a system of linear and quadratic equations  
 alge995 Solving a system of linear and quadratic equations  
 pcalc716 Using a graphing calculator to solve a system of linear and quadratic equations: Basic  
 fun019 Sum, difference, and product of two functions  
 alge716 Introduction to the composition of two functions

fun022 Composition of two functions: Basic  
 fun011 Horizontal line test  
 fun012 Inverse functions: Linear, discrete  
 pcalc114 Even and odd functions: Problem type 1

## Radicals

alge413 Finding all square roots of a number  
 arith602 Estimating a square root  
 arith761 Square roots of integers raised to even exponents  
 alge415 Introduction to simplifying a radical expression with an even exponent  
 alge264 Square root of a perfect square monomial  
 alge537 Using absolute value to simplify square roots of perfect square monomials  
 arith094 Cube root of an integer  
 alge549 Finding  $n$ th roots of perfect  $n$ th powers with signs  
 arith768 Finding the  $n$ th root of a perfect  $n$ th power fraction  
 alge550 Finding the  $n$ th root of a perfect  $n$ th power monomial  
 alge539 Table for a square root function  
 alge565 Domain of a square root function: Basic  
 alge566 Domain of a square root function: Advanced  
 alge543 Graphing a square root function: Problem type 1  
 alge544 Graphing a square root function: Problem type 2  
 alge545 Graphing a square root function: Problem type 3  
 alge812 Converting between radical form and exponent form  
 alge560 Rational exponents: Unit fraction exponents and whole number bases  
 alge561 Rational exponents: Unit fraction exponents and bases involving signs  
 alge250 Rational exponents: Non-unit fraction exponent with a whole number base  
 alge251 Rational exponents: Negative exponents and fractional bases  
 alge558 Rational exponents: Product rule  
 alge559 Rational exponents: Quotient rule  
 alge773 Rational exponents: Products and quotients with negative exponents  
 alge562 Rational exponents: Power of a power rule  
 alge249 Rational exponents: Powers of powers with negative exponents  
 alge080 Simplifying a radical expression with an even exponent  
 alge520 Introduction to simplifying a radical expression with an odd exponent  
 alge521 Simplifying a radical expression with an odd exponent  
 alge275 Simplifying a radical expression with two variables  
 alge273 Simplifying a higher root of a whole number  
 alge551 Introduction to simplifying a higher radical expression  
 alge552 Simplifying a higher radical expression: Univariate  
 alge811 Simplifying a higher radical expression: Multivariate  
 arith767 Introduction to square root addition or subtraction  
 arith032 Square root addition or subtraction  
 alge533 Square root addition or subtraction with three terms  
 alge531 Introduction to simplifying a sum or difference of radical expressions: Univariate  
 alge532 Simplifying a sum or difference of radical expressions: Univariate  
 alge084 Simplifying a sum or difference of radical expressions: Multivariate  
 arith764 Introduction to square root multiplication  
 arith765 Square root multiplication: Basic  
 arith039 Square root multiplication: Advanced  
 alge522 Introduction to simplifying a product of radical expressions: Univariate  
 alge523 Simplifying a product of radical expressions: Univariate  
 alge640 Simplifying a product of radical expressions: Multivariate  
 alge556 Introduction to simplifying a product of higher roots  
 alge557 Simplifying a product of higher radical expressions  
 alge525 Introduction to simplifying a product involving square roots using the distributive property  
 alge526 Simplifying a product involving square roots using the distributive property: Basic  
 alge276 Simplifying a product involving square roots using the distributive property: Advanced  
 alge774 Special products of radical expressions: Conjugates and squaring  
 alge984 Classifying sums and products as rational or irrational

arith766 Simplifying a quotient of square roots  
 alge530 Simplifying a quotient involving a sum or difference with a square root  
 alge527 Rationalizing a denominator: Quotient involving square roots  
 alge528 Rationalizing a denominator: Square root of a fraction  
 alge529 Rationalizing a denominator: Quotient involving a monomial  
 alge534 Rationalizing a denominator using conjugates: Integer numerator  
 alge535 Rationalizing a denominator using conjugates: Square root in numerator  
 alge400 Introduction to solving a radical equation  
 alge089 Solving a radical equation that simplifies to a linear equation: One radical, basic  
 alge402 Solving a radical equation that simplifies to a linear equation: One radical, advanced  
 alge090 Solving a radical equation that simplifies to a linear equation: Two radicals  
 alge403 Solving a radical equation that simplifies to a quadratic equation: One radical, basic  
 alge404 Solving a radical equation that simplifies to a quadratic equation: One radical, advanced  
 alge411 Solving a radical equation with a quadratic expression under the radical  
 alge405 Solving a radical equation with two radicals that simplifies to  $\sqrt{x} = a$   
 alge182 Solving a radical equation that simplifies to a quadratic equation: Two radicals  
 alge412 Algebraic symbol manipulation with radicals  
 alge542 Word problem involving radical equations: Basic  
 alge409 Word problem involving radical equations: Advanced  
 alge698 Solving an equation of the form  $x^3 = a$  using integers  
 geom565 Finding the side length of a cube given its volume  
 alge407 Introduction to the Pythagorean Theorem  
 geom044 Pythagorean Theorem  
 alge408 Word problem involving the Pythagorean Theorem  
 geom862 Using the Pythagorean Theorem repeatedly  
 geom603 Identifying side lengths that give right triangles  
 geom588 Informal proof of the Pythagorean Theorem  
 alge713 Using the Pythagorean Theorem and a quadratic equation to find side lengths of a right triangle  
 alge132 Distance between two points in the plane: Exact answers  
 alge324 Distance between two points in the plane: Decimal answers  
 alge191 Midpoint of a line segment in the plane  
 alge414 Finding an endpoint of a line segment given the other endpoint and the midpoint  
 pcalc609 Sine, cosine, and tangent ratios: Numbers for side lengths  
 pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths  
 pcalc616 Using a calculator to approximate sine, cosine, and tangent values  
 pcalc606 Using the Pythagorean Theorem to find a trigonometric ratio  
 pcalc008 Finding trigonometric ratios given a right triangle  
 geom317 Understanding trigonometric ratios through similar right triangles  
 geom318 Using similar right triangles to find trigonometric ratios  
 pcalc607 Using a trigonometric ratio to find a side length in a right triangle  
 pcalc610 Using trigonometry to find a length in a word problem with one right triangle  
 pcalc608 Using a trigonometric ratio to find an angle measure in a right triangle  
 pcalc611 Using trigonometry to find angles of elevation or depression in a word problem  
 pcalc642 Solving a right triangle

### Data Analysis and Probability

mstat088 Identifying statistical questions  
 mstat080 Choosing an appropriate method for gathering data: Problem type 1  
 mstat081 Choosing an appropriate method for gathering data: Problem type 2  
 mstat047 Introduction to expectation  
 mstat097 Constructing a two-way frequency table: Basic  
 mstat098 Constructing a two-way frequency table: Advanced  
 mstat049 Computing a percentage from a table of values  
 mstat087 Making an inference using a two-way frequency table  
 stat020 Calculating relative frequencies in a contingency table  
 mstat025 Finding if a question can be answered by the data  
 stat805 Making a reasonable inference based on proportion statistics  
 mstat037 Constructing a line plot  
 mstat004 Constructing a histogram for numerical data

mstat024 Interpreting a bar graph  
mstat044 Interpreting a double bar graph  
mstat031 Interpreting a stem-and-leaf plot  
stat804 Interpreting a circle graph or pie chart  
arith856 Finding a percentage of a total amount in a circle graph  
stat801 Computations from a circle graph  
geom814 Angle measure in a circle graph  
mstat003 Mode of a data set  
mstat055 Finding the mode and range of a data set  
mstat092 Finding the mode and range from a line plot  
mstat001 Mean of a data set  
mstat077 Using a model to find the mean  
mstat091 Finding the mean of a symmetric distribution  
mstat079 Finding sample size and comparing samples for estimating the mean  
mstat089 Computations involving the mean, sample size, and sum of a data set  
stat803 Finding the value for a new score that will yield a given mean  
stat802 Rejecting unreasonable claims based on average statistics  
mstat066 Weighted mean  
mstat028 Mean and median of a data set  
mstat029 How changing a value affects the mean and median  
mstat095 Finding outliers in a data set  
mstat053 Choosing the best measure to describe data  
stat009 Percentiles  
mstat027 Using back-to-back stem-and-leaf plots to compare data sets  
mstat072 Five-number summary and interquartile range  
mstat006 Constructing a box-and-whisker plot  
mstat073 Using box-and-whisker plots to compare data sets  
mstat082 Computing mean absolute deviation from a list of numerical values  
mstat042 Interpreting a Venn diagram of 2 sets  
mstat043 Interpreting a Venn diagram of 3 sets  
mstat041 Interpreting a tree diagram  
mstat040 Introduction to the counting principle  
mstat015 Counting principle  
pcalc082 Factorial expressions  
mstat017 Computing permutations and combinations  
mstat008 Word problem involving permutations  
mstat009 Word problem involving combinations  
stat790 Permutations, combinations, and the multiplication principle for counting  
mstat099 Determining a sample space and outcomes for a simple event  
mstat100 Determining a sample space and outcomes for a compound event  
mstat026 Introduction to the probability of an event  
mstat010 Probability of an event  
mstat046 Experimental and theoretical probability  
stat106 Outcomes and event probability  
stat112 Probabilities involving two dice  
mstat116 Probabilities of a permutation and a combination  
mstat048 Odds of an event  
mstat011 Area as probability  
mstat019 Identifying independent events given descriptions of experiments  
mstat012 Probability of independent events  
mstat013 Probability of dependent events  
stat117 Probabilities of draws with replacement  
stat118 Probabilities of draws without replacement  
mstat115 Determining outcomes for compound events and complements of events  
mstat110 Using a Venn diagram to understand the multiplication rule for probability  
mstat107 Outcomes and event probability: Conditional probability  
mstat104 Identifying independent events given values of probabilities  
mstat105 Computing conditional probability using a two-way frequency table  
mstat106 Computing conditional probability to make an inference using a two-way frequency table  
mstat118 Conditional probability: Basic  
mstat109 Using a Venn diagram to understand the addition rule for probability  
mstat108 Outcomes and event probability: Addition rule

mstat032 Probability of the union of two events  
 mstat117 Probability of intersection or union: Word problems  
 mstat085 Identifying outcomes in a random number table used to simulate a compound event  
 mstat086 Using a random number table to simulate a compound event  
 mstat114 Using a random number table to make a fair decision  
 stat021 Population standard deviation  
 stat852 Word problem involving calculations from a normal distribution

### Rational Expressions

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