Instructor's Manual

for K-12 Education

Advanced Customer Solutions

ALEKS Corporation

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Preface

Welcome to ALEKS, one of the most powerful educational tools available for learning mathematics. ALEKS combines advanced learning technology with the flexibility of the Internet, and provides an interactive tutoring system with unmatched features and capabilities.

The innovative features of ALEKS open new horizons for educators and learners alike in any educational context. The ALEKS class management system enables instructors and administrators to efficiently monitor student progress and provide focused instruction. With its unprecedented use of Artificial Intelligence, ALEKS determines quickly and precisely what your students know and what they need to learn, guiding them down individualized learning paths to mastery. The programs used are customizable, letting you conveniently add or subtract topics. As ALEKS is accessed on the Internet, no complicated technical preparation is needed—and your students can work at any time, from home or from the classroom! ALEKS can also be integrated with a variety of textbooks.

It's a personal tutor for each of your students, at a fraction of what such services normally cost.

The benefits of using ALEKS are dramatic. Students work in a dynamic, interactive learning environment on precisely those materials that they are individually ready to learn, building momentum toward mastery. Students can access their ALEKS account around their own schedules and work on what they are ready to learn now. It is the personalized, "just-in-time" learning system.

ALEKS may be used in a variety of classroom situations—whether in a traditional classroom, or in a self-directed or distance-learning environment.

Using the Student Access Code along with the Course Code provided by the instructor, the student registers on the ALEKS website.

This Instructor's Manual is intended to provide complete information on the functioning of ALEKS. A description of its contents can be found in Chapter 1.

Please also take time to explore the ALEKS website: it is a valuable source of information (https://www.aleks.com, Fig. 3.1). The website includes tours, overviews of ALEKS course products, troubleshooting and support information, training resources,

and user guides. It also contains information on the theory and research behind ALEKS, forums for the exchange of ideas with other educators, and brief, recorded on-line training segments. To find the resources specific to the educational field you are in, click on the appropriate link on the ALEKS home page.

Chapter 1

Introduction

1.1 What is ALEKS?

The ALEKS system is the product of years of cutting-edge research into the mathematical modeling of human knowledge (Chap. 9). The creators of ALEKS are cognitive scientists, software engineers, and university professors. In designing ALEKS, their goal was to achieve the utmost simplicity of use without compromising the depth, rigor, or richness of mathematics instruction at its inspirational best. ALEKS is a tool to empower both instructors and learners of math. It opens doors into the assessment and representation of knowledge, and it breaks down barriers to success by recognizing the vast diversity of paths that lead to mastery. The ALEKS system can make a radical difference in how math learning is experienced.

ALEKS is an online system for the assessment and individualized teaching of mathematics. It can be accessed on the Internet from virtually any computer and is designed to allow the monitoring and management of students and classes at the instructor, school, and system levels.

The core of the system is an efficient, adaptive assessment engine that determines quickly and precisely what an individual student knows (an assessment is also called a knowledge check). Based on assessment data, the system is able to offer material that the student is ready to learn.

The ALEKS Learning Mode includes explanations and algorithmically generated practice problems, ongoing assessment of student knowledge, an online math dictionary, and facilities for review and collaborative help. It can be used on an independent basis or as a supplement to classroom instruction.

1.2 The ALEKS Instructor's Manual

The purpose of the ALEKS Instructor's Manual is to provide instructors with complete information on the operation of the system. Even though ALEKS is not complex, our goal is to offer instructors a clear idea of everything ALEKS does, how it works, and where to find answers to questions.

ALEKS is user-friendly, and may be used without help from the Instructor's Guide. Feel free to use the system now. If questions arise, or if you want to learn more about ALEKS, this Instructor's Guide is intended as a convenient and comprehensive reference.

NOTE. For a brief, comprehensive overview of ALEKS, turn directly to the "Frequently Asked Questions" in Chapter 10.

- The first chapters are those most likely to be used by instructors new to ALEKS. Chapter 2, "Quick Start," contains a concise checklist for those new to ALEKS. Chapter 3, "Setup Guide for Instructors," provides all of the information necessary for preparing to use ALEKS with one or more classes. This ranges from technical and installation requirements through the students' first ALEKS session (which typically involves registration, tutorial, the Initial Assessment (or Knowledge Check), and entry into the Learning Mode).
- Chapters 4 through 7 contain descriptions of the principal parts of the ALEKS system: Assessment Mode, Learning Mode, and the Instructor Module.
- QuickTables, a tool for mastering math facts, is described in Chapter 6.
- The Instructor Module is discussed in Chapter 7.
- Chapter 8 is a brief guide to teaching with ALEKS, describing a range of scenarios and the ALEKS features that support them.
- Chapters 9 through 11 provide additional information that may be necessary or of interest to instructors using ALEKS. Chapter 9, "Knowledge Spaces and the Theory Behind ALEKS," explains the history of Knowledge Space theory and its fundamental concepts, along with the evolution of ALEKS itself. Also included is a bibliography for those seeking to understand the theory behind ALEKS in greater depth. Chapter 10 provides answers to frequently asked questions about ALEKS. Chapter 11 gives the information necessary for obtaining technical and other support.
- Appendix A contains the complete text of the ALEKS Student User Guide. Appendix B contains content summaries for ALEKS course products.

Chapter 2

Quick Start

The purpose of this chapter is to provide a summary of the steps involved in starting a class with ALEKS.

2.1 Obtaining a Class Code

In order to use ALEKS with your class, you will need to have a Class Code. You give this code to the students in your class; they will use this Class Code to register. The Class Code is all your students need to register with ALEKS. When they register, they will receive a Login Name and Password; after this they will no longer need the Class Code. Students should not use the Class Code to register a second time, as doing so will create a new account in their name, unconnected with the first.

You can have as many classes and sections as you need or want in ALEKS. For each class or section, there is one unique Class Code. Students who register using this code will be enrolled in the corresponding class. Students who accidentally enroll in the wrong class can easily be moved to the right one at any time. (Please note that moving a student from one class to another in ALEKS may trigger a new assessment or knowledge check.) **To obtain the Class Code for any class, log on to your instructor account,** on the **Instructor Administration** menu, select **Class List** (Sec. 7.4.34). The Class Code will appear in the right-hand part of the screen.

You will normally be provided with an instructor Login Name and Password by ALEKS Corporation; otherwise, a colleague at your school with administrator privileges in ALEKS can also create an instructor account for you. Once you are logged on to ALEKS as an instructor, you can create one or more classes through selecting **New Class**.

2.2 Registering Students

Students should use the following steps to register.

1. Go to the ALEKS website.

   https://www.aleks.com

2. Click on the **SIGN UP NOW!** link to the left of the page, under the space for Registered Users. (This is the only time they will click on that button.)
3. On the page that follows, enter the Class Code in the spaces provided for "Using ALEKS with a Class?" (to the left of the window). **Do not use the button on the right-hand side.**
4. Confirm enrollment information.
5. Enter other information as prompted and choose a password.
6. Record the Login Name provided by the system.
7. Wait for the instructor to authorize the registration. They can log off at this point and log back in later, using the Login Name and Password provided. As soon as the instructor authorizes their registration, they will be able to use their new ALEKS account.

   NOTE. For a complete description of how instructors authorize the registration of their students, see Sec. 3.6.
8. Begin using ALEKS by taking the student tutorial and an Initial Assessment (Knowledge Check).

Students will subsequently use their Login Name and Password to enter their accounts.

Chapter 3

Setup Guide for Instructors

3.1 Instructor Preparation

Figure 3.1: The ALEKS Website

ALEKS has been designed to be user-friendly and intuitive. However, taking the time to study all materials provided to you, including the Instructor's Guide, and trying out the system, can provide valuable insight into the system's functioning and underlying ideas. The administrator for ALEKS can contact ALEKS Customer Support for assistance at any time (Chap. 11).

3.2 System Requirements

The following table presents the system requirements for ALEKS in summary form.

	PC	Macintosh	Chromebook
Operating System	Windows 7+	MacOS 10.7+	Chrome OS
Processor	Any	Any	Any
RAM Memory	64+ MB	64+ MB	Any
Browser	Explorer 11+, Firefox 25+, Chrome 30+	Safari 6+, Firefox 25+, Chrome 30+	Chrome 30+
Screen Resolution	800x600 (1024x768 for Chemistry)	800x600 (1024x768 for Chemistry)	Any

Figure 3.2: System Requirements

Tablets. All courses are desktop and tablet compatible with the exception of AP Statistics (Quantitative), High School Prep for Statistics, Business Math, Fundamentals of Accounting, and Introduction to Statistics. These courses are not compatible with tablet devices.

Note that any kind of Internet connection (cable, ISDN, DSL, or wireless) usually available in a computer lab is adequate for use with ALEKS.

3.3 Instructor Module

To enter the ALEKS Instructor Module, log on to ALEKS with your Instructor Login Name and Password. The Instructor Module lets you monitor and manage your ALEKS classes. The Instructor Module is designed for ease of use; it guides users through the steps needed to accomplish tasks in such a way that no separate training is needed and mistakes or confusion are unlikely. See Chapter 7 for a complete description of the Instructor Module.

3.4 Student Orientation

It is strongly recommended that the first ALEKS session be conducted under supervision, perhaps with another instructor on hand, to help your students get started. It is not generally necessary to schedule a separate orientation meeting before the students begin using the system. It is also advisable for students to have pencil and paper for assessments (knowledge checks) in ALEKS. A calculator is included in ALEKS when

needed. Remind your students that help is not permitted during the assessment, because this will impair the accuracy of the results, and consequently hinder that student's progress in the Learning Mode.

If possible, the students' first session with ALEKS should allow them to complete their knowledge checks (assessments) and begin work in the Learning Mode. If the students are unable to finish their assessments during this time, ALEKS will automatically keep their place. The next time the students log on to ALEKS they may continue without any loss of work.

3.5 Registration

Students register with ALEKS by going to the ALEKS website and clicking on **SIGN UP NOW!** This will be expedited if the browsers used by the students have **Bookmarks** or **Favorites** pointing to the website.

NOTE. In order to register, all students must have the Class Code for the class that you are teaching. The Class Code will either be sent to you by ALEKS Corporation (in your ALEKS Inbox), or be obtained when you create the class (Sec. 7.4.1). You are responsible for giving this code to the students at the time of the first session (Sec. 2.1).

The student registration process is described in detail in the Student User Guide (Appendix A). There are complete online instructions for every step of this simple procedure. Among other information, students can supply their Student ID number (if you wish to have this in the system). Special care should be taken in entering the latter, as the system cannot detect mistyping. The Student ID is optional information.

Near the conclusion of Registration students receive a Login Name and choose a Password. These should be noted carefully, as they will be essential for all further work with ALEKS. Students should choose a password they will remember easily but that will be hard for others to guess. Login Name and Password can be typed with upper or lower-case letters. Neither may contain spaces or punctuation. The Password must contain at least 6 characters.

At the end of Registration, students are asked to wait for their instructor's authorization. For a complete description of how instructors authorize the registration of their students, see Sec. 3.6. The students can log off at this point and log back in later, using the Login Name and Password provided. As soon as the instructor authorizes their registration they can start using ALEKS.

3.6 Instructor Authorization of Student Registration

The following is a more detailed description of the student registration process, highlighting the actions by which you authorize students' registration.

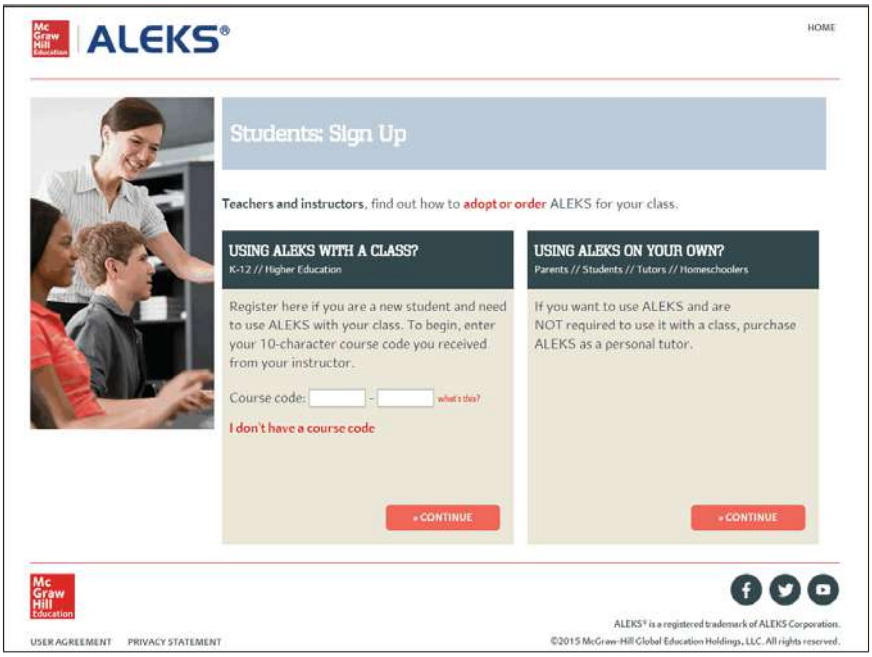


Figure 3.3: Registration

A student wishing to register with ALEKS begins on the ALEKS home page by clicking on the link marked **SIGN UP NOW**, located to the left of the home page, under the space for Registered Users (Fig. 3.1).

Next the student is asked to enter the Class Code which has been provided by the instructor (Fig. 3.3). Since each Class Code is assigned to a class defined by grade level, the Class Code entered by the student tells ALEKS the grade level at which the student is seeking to register. The spaces for this code are in the left-hand part of the window. Do not use the button on the right-hand side of the window.

Following entry of the Class Code, the student is given information on the class selected and on the process of beginning to use ALEKS.

Subsequently, ALEKS asks for full first and last names, and then provides a Login Name consisting of the student's first initial, last name, and usually a number (Fig. 3.4). The student is also provided with a password.

Students have the opportunity to enter an email address and a Student ID number. Students are not required to provide this information.

At this point the student is told that authorization is needed from the instructor before registration can be completed (Fig. 3.5). Until the instructor logs onto ALEKS and provides authorization, the student will not be able to get further than this page.

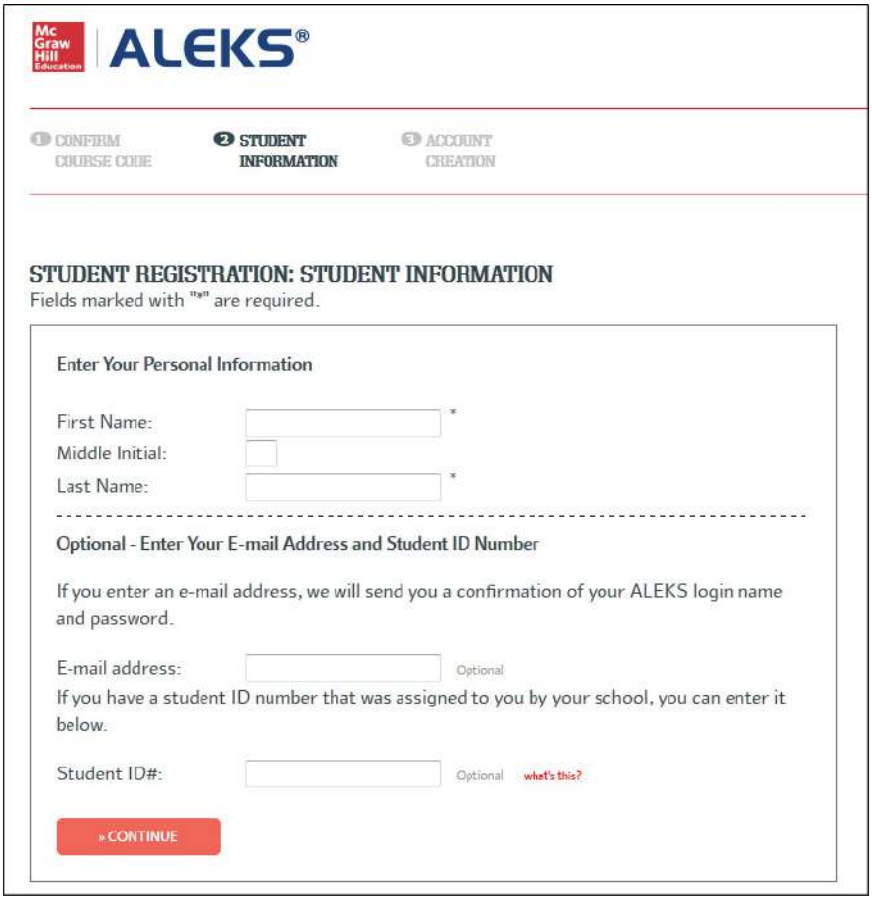


Figure 3.4: Registration (continued)

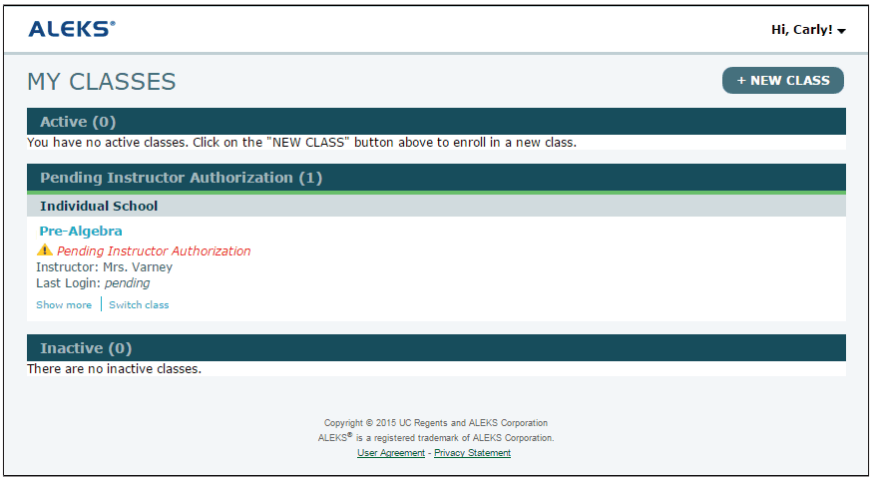


Figure 3.5: Registration (continued)

Once authorization is provided, the student will be able to click **Next** and begin using ALEKS. If the instructor cannot authorize immediately, the student is able to log off at this point and log back on at a later time using the Login Name and Password provided; if the instructor has authorized registration, the student will then begin using ALEKS.

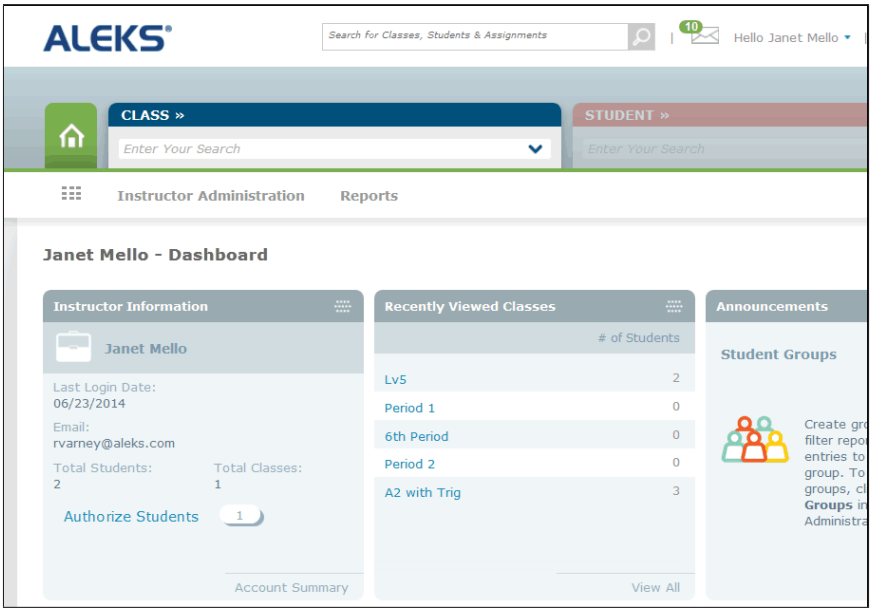


Figure 3.6: Registration (continued)

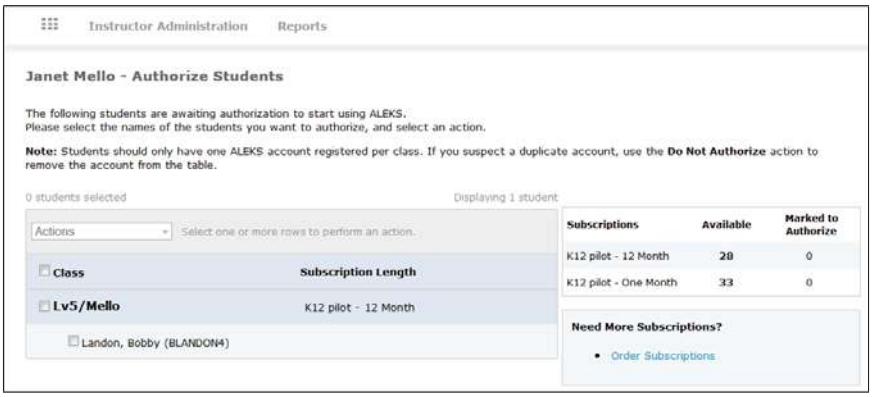


Figure 3.7: Registration (continued)

In order to authorize registration, log on to your instructor account using the Login Name and Password received at registration or from ALEKS Corporation. If there are students in the class awaiting registration, on your Dashboard, you will see **Authorize Students** (Fig. 3.6). To authorize students, select **Authorize Students** from the **Instructor Administration** menu (Fig. 3.7).

3.7 Pre-Registration

The ALEKS Pre-Registration function allows teachers to register a group of students at the same time, without the students' needing to register themselves individually. To use this feature, from **Home**, select **Instructor Administration**, followed by **Enroll/Pre-Register**. This link is also available on the **Class Administration** menu.

You have the option of copying and pasting data from an existing Excel document or other electronic spreadsheet or of entering the students' information manually. In either case, the minimum information required is the first and last names of the students; other information is optional. If you choose to copy-and-paste, there is a text box that allows you to paste the data directly. The information will then be organized into rows and columns, and you can select the headings for each column. Once the data is saved, the Login Names and Passwords for the new accounts will be displayed, and will also be sent to you as a message.

If the **By Typing** option is selected, you will see a spreadsheet where you can enter the First Names, Last Names, and other data for your students. The procedure is otherwise as described above.

NOTE. When registering students in this manner, the school must have the appropriate number and type of subscriptions available to register all of the students in the class.

3.8 Batch Registration

ALEKS school and district administrators can quickly register multiple students using the School and District Batch Registration feature. The Batch Registration feature is intended to be used when registering 100 or more students. If registering less than 100 students, the ALEKS Pre-Registration feature is preferable to Batch Registration.

ALEKS Batch Registration allows ALEKS administrators to:

- Generate new ALEKS classes.
- Register new students in the appropriate classes.
- Generate new ALEKS instructors accounts.

3.8.1 Batch Registration Process

The Batch Registration feature can be accessed through your ALEKS administrator account as follows:

School Administrators

- To batch register students, select **Home**, **Institution Administration**, followed by **Batch Registration**.

District Administrators

- To batch register students at more than one school in the district, select **Home**, **Institution Administration**, followed by **Batch Registration**.
- To batch register students at a school, select a school from the Institution tab, select **Subscriptions**, followed by **Batch Registration**.

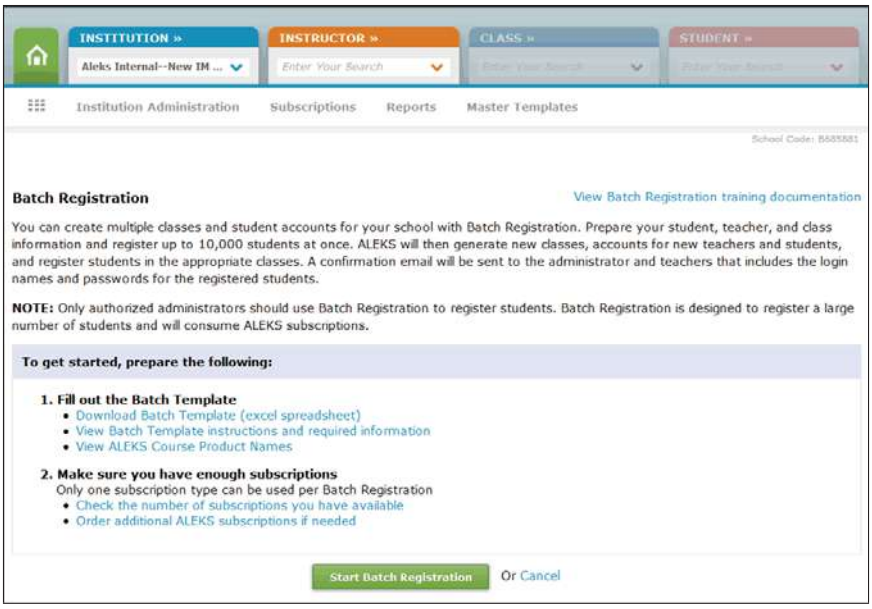


Figure 3.8: School Batch Registration

Before you begin:

1. Download and complete the Batch Template (See Sec. 3.8.2).
2. Check the number of subscriptions you have available (Fig. 3.8).

STEP 1. Begin Batch Registration

- Select a starting term from the drop-down menu.
- Select a subscription type. **Use one subscription type per Batch Registration process.**
- When more subscriptions are needed you can use the link available to order more.

STEP 2. Upload the Batch Template

- Use the **Browse** button to upload the Batch Template file (only the extensions .xls and .xlsx are accepted).

- Click on the **Next** button to begin the upload.

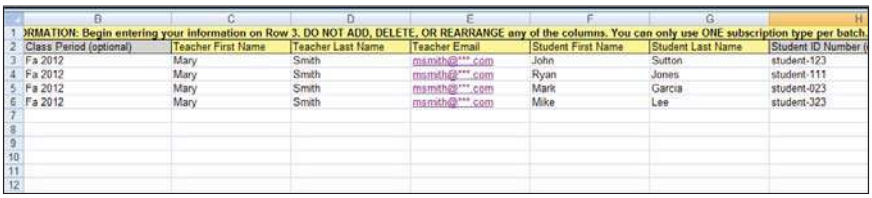
STEP 3. Summary of information

- Review the information displayed on the screen after the upload.
- If satisfied with the data entered, click to authorize the use of the required subscriptions or cancel the Batch Registration process.

After the administrator authorizes the batch to be processed, they will receive an email indicating that a Batch Registration is in process. The email is a summary of the subscription type being used and approximately how long the process will take.

NOTE. Students already registered, but included in the Batch Template, will not be registered twice. These students will appear in red.

3.8.2 Batch Template



	B	C	D	E	F	G	H
1	)RMATION: Begin entering your information on Row 3. DO NOT ADD, DELETE, OR REARRANGE any of the columns. You can only use ONE subscription type per batch.						
2	Class Period (optional)	Teacher First Name	Teacher Last Name	Teacher Email	Student First Name	Student Last Name	Student ID Number (
3	Fa 2012	Mary	Smith	msmth@*** com	John	Sutton	student-123
4	Fa 2012	Mary	Smith	msmth@*** com	Ryan	Jones	student-111
5	Fa 2012	Mary	Smith	msmth@*** com	Mark	Garcia	student-023
6	Fa 2012	Mary	Smith	msmth@*** com	Mike	Lee	student-323
7							
8							
9							
10							
11							
12							

Figure 3.9: Batch Template

The Batch Template is a preformatted spreadsheet that contains column headers based on the required information needed to process a Batch Registration. Administrators should not edit, add, delete, or rearrange any of the columns in the spreadsheet. Administrators must click on the **Download the Batch Template (excel spreadsheet)** link and save it to their computer (Fig. 3.8). If you need guidance on how to fill out the Batch Template, click on the **View Batch Template instructions and required information** link. Clicking on this link will open a pop-up. Administrators can refer to this pop-up while entering data into the Batch Template.

ALEKS administrators must enter required information in all column headers highlighted in yellow (Fig. 3.9). Once the Batch Template is filled out, it is important for you to check the spreadsheet for any incomplete data before processing the Batch Registration. A correctly completed spreadsheet will help prevent having to correct errors that may be found during the registration process. Batch Registration allows instructors to register up to 10,000 students per batch process.

3.8.3 Batch Confirmation

ALEKS automatically sends a confirmation message to the administrator when the Batch Registration is completed. Instructors of each newly created class will receive a message containing the login names and passwords for the registered students. The administrator will also receive a copy of each message.

3.9 Tutorial

Following Registration, the students enter a brief tutorial on the use of ALEKS input tools, also called the **Answer Editor Tutorial** (Sec. 4.4). There are separate tutorials for different subjects, since the specific tools for them differ somewhat. The ALEKS Tutorial provides ample feedback to ensure that students complete it successfully.

3.10 First Assessment

Immediately after the tutorial, students proceed to their Initial Assessment or Knowledge Check (Chap. 4). To reiterate, no help of any kind should be given to students being assessed, not even rephrasing a problem. It is also advisable for students to have pencil and paper for assessments in ALEKS. A calculator is included in ALEKS when needed.

The ALEKS assessment is adaptive and variable in length. Consistency of effort and concentration may influence the length of an assessment.

NOTE. All students will be assessed on their first use of the system. This will provide you with a baseline picture of your class and of each individual student.

3.11 Report Tutorial

At the conclusion of the Initial Knowledge Check (Assessment), the student is given a brief tutorial on how to interpret the Assessment Report.

3.12 Beginning the Learning Mode

Students enter the Learning Mode by clicking on one of the topics they are **ready to learn**. If at all possible, the students should be given sufficient time in their first ALEKS session to use the Learning Mode and begin to **add concepts to their pie.** If they have this experience, their interest in using ALEKS will be more favorable. You should also be present to answer questions regarding the Learning Mode and to

help your students familiarize themselves with its varied features. This is particularly important for when they will have to use ALEKS unsupervised.

Chapter 4

Assessment Mode

The Assessment Mode is the heart of the ALEKS system. The program quickly and accurately determines a student's knowledge, in order to deliver individualized instruction on the exact topics the student is ready to learn. In ALEKS, learning is powered and optimized by assessment. The terms "knowledge check" and "assessment" are synonymous and will be used interchangeably.

4.1 Assessments in ALEKS

The ALEKS assessment (knowledge check) uses open-ended problems (no multiple-choice questions). The assessment uses adaptive questioning, so that problem types are selected based on all the previous answers the student has given. It is impossible to predict which types of problems will appear, or in what order. Moreover, the problems themselves are generated algorithmically, with randomly-selected values (as is the case also in the Learning Mode). Consequently, students cannot "learn the assessment," teachers are unable to "teach to the assessment," and some types of cheating are impossible. In the unlikely event that two students sitting next to one another were given the same problem-type at the same time, the problem parameters and values would be different, and so would the correct answer. Certain assessments should be supervised, however, such as the first, interim, and final assessments in a class. Without supervision, students could use a textbook, receive systematic help, or have someone else take the assessment in their place. (There is no reason for a student who has begun using ALEKS to cheat on a "progress" assessment, as this will simply cause the system to suggest problems that are too difficult, and thus hinder the student's own work.)

The student will be given an Initial Assessment immediately following completion of the ALEKS Tutorial (Sec. 3.10). The student is clearly informed that the assessment (knowledge check) is beginning. Next, a series of mathematical problems is posed to the student. The student provides the solution to each problem using the Answer Editor (or clicks **I don't know**). In Assessment Mode, the system does not inform the student

whether their answer is correct or incorrect. The assessment continues until the system has determined the student's precise knowledge of the class materials, at which time the assessment ends and a report is presented to the student. The number of questions asked cannot be known in advance, although consistent effort and attention may contribute to shorter assessments.

Information on the reports available to students, including reports on knowledge checks (assessments), can be found in Appendix A.

4.2 Guidelines for Assessments

ALEKS assessments are an important part of the ALEKS program. It is essential that assessments be conducted according to certain guidelines. If there is an atmosphere permitting disturbances or distractions, students may not do their best. If assessment results are inaccurate, the system will give the student inappropriate problems and progress will initially be impaired. The system will recover and find the right level, but the student may still experience a degree of frustration. In order to avoid this, it is strongly recommended that the first assessment be taken under the instructor's supervision (Sec. 3.10).

All students being assessed need paper and pencil. A basic calculator is part of ALEKS, and will be available when appropriate. It is important that no assistance be given to the student. Explaining or rephrasing a problem should be avoided; this is considered inappropriate help. Students should be instructed to use the **I don't know** button only when they are completely unfamiliar with the topic. It is not possible to return to previous assessment questions. **Students should not click their browser's Back or Forward buttons when using ALEKS.**

4.3 How Assessments are Triggered

All ALEKS knowledge checks (assessments) work in much the same way, though they are triggered for different reasons, as explained in the following sections.

4.3.1 Initial Assessment

The Initial Assessment takes place at the outset of a student's use of ALEKS, immediately after Registration and the ALEKS Tutorial (Sec. 3.10). We strongly recommend that students take this Initial Assessment in a supervised computer lab setting, to ensure that they do not receive help or collaborate. In creating or editing a class account, the instructor can stipulate that the Initial Assessment be allowed only from school (Sec. 7.4.24).

4.3.2 Automatic Assessments

Additional assessments (knowledge checks) after the Initial Assessment are triggered automatically by the system based on the student's rate of progress and on the amount of time the student has spent working in ALEKS. ALEKS triggers the following automatic assessments:

Progress Assessment
when the student has mastered approximately 20 topics in the Learning Mode **and** spent at least 5 hours working in ALEKS since the last assessment.

Login Time Assessment
when the student has spent 10 hours working in the Learning Mode since the last assessment.

Periodic Assessment
when 60 days have passed since the last assessment.

Objective Completion Assessment
when the student completes the material of a textbook chapter or objective or reaches the assigned Mastery Level (Sec. 7.4.6).

Goal Completion Assessment
when the student has completed the final topic of the pie chart. If the assessment does not confirm the student's mastery of the class materials, the student will return to the Learning Mode. Consequently, more than one Goal Completion Assessment is possible, but ALEKS will not reassess the student if a only small number of topics need to be relearned.

These are all **Progress**-style assessments. Some modification of the parameters given above is possible; contact ALEKS Corporation Customer Support for assistance if you would like to adjust them.

Students can see when their next Knowledge Check is coming up by clicking on the Knowledge Check icon on their Home page, next to the Timeline/ALEKS Pie switch. When it is time for the Knowledge Check, they will see a notification, and they will have 24 hours to begin it (the exact period may be different if you set it differently for your class). Before beginning the Knowledge Check, the student should be encouraged to review by clicking on **Review for Knowledge Check**; this option appears under the Knowledge Check notification and on the student's Primary Guidance Menu.

Note that a Progress, Login Time, or Periodic Assessment (Knowledge Check) "resets the clock," so that assessments do not occur one on top of another. In general, ALEKS will avoid triggering unnecessary re-assessments.

Progress made by the student through the Learning Mode, or as the result of an assessment, periodically updates the list of available topics, displaying a new pie chart and new choices of concepts the student is "ready to learn." The automatic assessments

check the students' retention of recently learned material, and may also include topics the student is ready to learn.

NOTE. Automatic assessments may be postponed due to a scheduled assignment. This occurs when the assignment has the **Prevent automatic assessments** box checked (Sec. 7.5.6). Also, to avoid the over-assessment of students, all automatic assessments will be prevented for students with 10 or fewer items remaining in an Objective or in the 48 hours preceding the Objective end date.

For Objectives without end dates, automatic assessments will be prevented for students with 10 or fewer items remaining to complete the current Objective, regardless of the mastery levels set (Sec. 7.4.6).

4.3.3 Scheduled Assessments

To schedule an assessment for the entire class or for specific students, select a class, click on the Assignment tab, then again on **Assignments**, and then select Scheduled Assessment under **New Assignment**. For example, the instructor, department, or school may wish to have "interim" assessments under supervision to guarantee reliable results. They have the option of selecting the style of assessment as Progress or Comprehensive. Progress Assessments are slightly shorter and focus on the student's most recent learning history; Comprehensive Assessments are slightly longer and probe more deeply into the student's overall knowledge of the class content.

ALEKS allows the instructor to choose the availability of Scheduled Assessments by specifying a beginning and ending date and time and how students access that assessment when it becomes available. Also among the options for a Scheduled Assessment is one to prevent automatic assessments within a certain number of days prior to the Scheduled Assessment. Note that any assessment scheduled by the instructor "resets the clock" for automatic assessments, so that students will not be assessed too frequently.

For additional information about Scheduled Assessments, see Sec. 7.5.9.

4.3.4 Requested Assessments for a Single Student

As an instructor, you can also request an assessment for a single student. To do this, select the student, and then on the Assignments menu, select **Request Assessment**. When a Requested Assessment is triggered, the assessment will take place immediately the next time the student logs in (compared to the Scheduled Assessment, where the student is only prompted to take the assessment after the date or time specified by the instructor). Like the Scheduled Assessment, a Requested Assessment for a single student "resets the clock" for automatic assessments. The results of this assessment will not be included in the Gradebook.

The style of a Requested Assessment can also be set to Progress or Comprehensive. Progress Assessments are slightly shorter and focus on the student's most recent learning

history; Comprehensive Assessments are slightly longer and probe more deeply into the student's overall knowledge of the class content.

For additional information about Requested Assessments, see Sec. 7.8.9.

4.4 Answer Editor

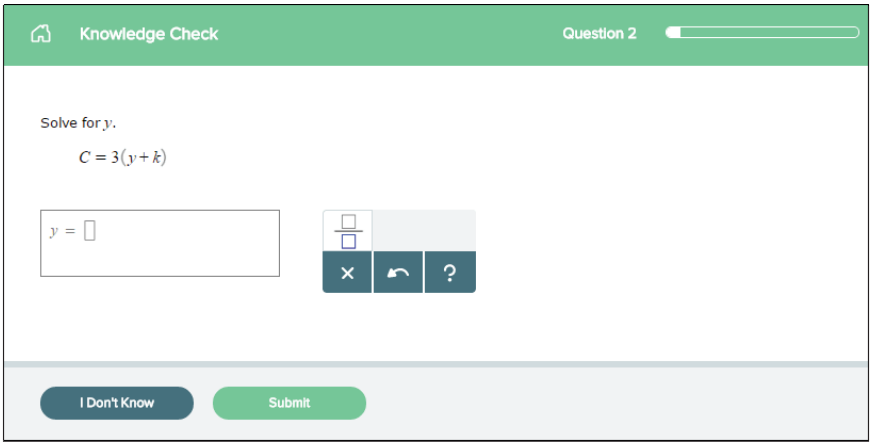


Figure 4.1: The Answer Editor for Mathematical Expressions (Assessment)

Input to the ALEKS system is always in the form of proper mathematical expressions and constructions, never multiple choice. A critical reason for this is to check students' knowledge accurately. Another purpose is to train students in the skills needed for conventional, paper-and-pencil communication of solutions and results. The sophistication of the ALEKS input tools provides additional advantages. The presentation of results is always neat and clear. The ALEKS graphing tools allow students to draw accurate graphs and geometrical constructions. Immediate feedback is provided on the formal completeness of solutions.

The general term for the input tools used in ALEKS is the **Answer Editor.** This encompasses a variety of actual modes for user input, including: an Answer Editor for mathematical expressions, an Answer Editor for the number line, and an Answer Editor for graphing in the Cartesian plane (with x and y coordinate axes). A student beginning to use ALEKS is trained in how to use the features of the Answer Editor that are relevant to the subject (Sec. 3.9). Also, context-sensitive help is available on use of Answer Editor through the **?** icon next to the buttons on the tool palette.

In much of what follows, emphasis is on the **Answer Editor for mathematical expressions,** as this is the section which involves the greatest degree of interplay between mouse, keyboard, and on-screen buttons and icons.

4.5 Manipulators for Mathematical Expressions

The Answer Editor for mathematical expressions consists of two parts: a rectangular field where mathematical expressions are entered (the **entry field**) is to the left, and a **keypad** made of buttons with mathematical symbols is to the right (Fig. 4.1). Mathematical expressions are entered and edited using the buttons of the Answer Editor keypad, as well as the basic keyboard, the Left and Right arrow keys, the Tab, Enter, and Backspace keys, and the mouse.

NOTE. Buttons are displayed to correspond with the kind of problem being solved. The selection is made in such a way as to avoid giving a hint to the correct answer. Keyboard shortcuts (Fig. 4.2) work only when the corresponding button is displayed.

Expression	Answer Editor keypad button	Keyboard equivalent
Square Root	$[\ ]\sqrt{[\ ]}$	(none)
Fraction	$\frac{[\ ]}{[\ ]}$	/
Mixed Number	$[\ ]\frac{[\ ]}{[\ ]}$	(none)
Repeating Decimal	$[\ ]\overline{[\ ]}$	(none)
Absolute Value	$[\ ]\,\vert[\ ]\vert$	(none)
List of Expressions	$[\ ],[\ ],\ldots$	,
Exponent	$[\ ]^{[\ ]}$	$\wedge$ (before exponent)
Multiplication Expression	$[\ ]\times[\ ]$	*
Percentage	%	%
Greater-Than	$[\ ]>[\ ]$	>
Less-Than	$[\ ]<[\ ]$	<
Greater-Than-or-Equal-To	$[\ ]\geq[\ ]$	(none)
Less-Than-or-Equal-To	$[\ ]\leq[\ ]$	(none)
Equal-To	$[\ ]=[\ ]$	=
Not-Equal-To	$[\ ]\neq[\ ]$	(none)
AND	AND	(none)
OR	OR	(none)

Figure 4.2: Mathematical Expressions Produced by the Answer Editor

4.5.1 Basic Input

When a new page is opened and contains a problem whose solution is a mathematical expression, the entry field initially contains at least one blue box. Each blue box represents a mathematical expression forming part of the complete answer. To enter a mathematical expression the student must first click on a blue box. When this is done, the cursor (or "caret") appears inside the box. The cursor marks the point at which something is entered. Material can be entered using the basic keyboard or the buttons

Key	Effect
Right arrow - Tab - Enter - Spacebar	moves the cursor one place to the right (ahead)
Left arrow	moves the cursor one place to the left (back)
Backspace	deletes input immediately preceding (to the left of) the cursor and moves the cursor one place to the left (back) OR deletes selected input

Figure 4.3: Using Special Keys in the Answer Editor

of the keypad. Individual digits can be entered only from the keyboard. Symbols can be entered using the buttons of the keypad or sometimes from the keyboard (Fig. 4.2).

4.5.2 Basic Editing Tools

The cursor, showing the point at which material is entered, can be moved using the Left and Right arrows, the Tab and Enter keys, as well as the Spacebar. It can also be positioned using the mouse. Input can be deleted using the Backspace key (Fig. 4.3).

4.5.3 Selecting Input

It is possible to select a continuous portion of input by dragging the pointer with the mouse button held down. A segment that has been selected by dragging in this way can be deleted by pressing Backspace, replaced by typing, or replaced by clicking the buttons of the Answer Editor keypad. It can also be inserted into a mathematical expression such as a fraction or a square root (the selected portion is placed in the numerator position or under the square root sign, respectively).

4.5.4 Clear and Undo

After material has been entered, the field can be returned to its empty state by clicking **Clear.** Clicking **Undo** cancels the most recent action. Clicking **Undo** a second time restores the effect of the canceled action (including a **Clear** command).

4.6 Mathematical Expressions

The purpose of the Answer Editor for mathematical expressions is to process user input in the form of correct mathematical expressions. One important way in which the Answer Editor guides the user in constructing such expressions is by means of the blue

boxes. If a blue box remains on the screen, you know that the input typed so far is not yet complete.

4.6.1 Entering Expressions from the Keyboard

For expressions that do not require the use of the Answer Editor keypad, the user can place the cursor within a blue box and enter the mathematical expression from the keyboard. For many expressions, however, the Answer Editor keypad must be used. Some types of expressions can be entered by either keypad or keyboard (Fig. 4.2).

4.6.2 Using the Answer Editor Keypad to Structure Simple Expressions

To form a simple mathematical expression, the user places the cursor in an empty blue box and clicks on the appropriate button from the Answer Editor keypad. The initial blue box disappears and new blue boxes may appear (depending on the button), accompanied by all of the necessary signs. The user can now fill in the new boxes.

4.6.3 Entering Complex Expressions

Sometimes it is necessary to enter more complex mathematical expressions, where multiple boxes are used. By placing the cursor in one of these boxes, an expression can be entered from the keyboard, or, by clicking on a button of the Answer Editor keypad, replace it with the structure of a new mathematical expression. Expressions of any degree of complexity can be created in this way.

NOTE. The Answer Editor does not supply parentheses automatically. The user must know when they are necessary. In particular, when there is an expression consisting of more than one symbol that must be raised to a power, the student may need to enclose it in parentheses, just as in writing; otherwise, only the final symbol (the one just before the exponent) will be raised to the given power.

4.6.4 Alternate Ways of Entering Expressions

The buttons of the Answer Editor keypad can be used in other ways as well. In particular, users can select some portion of the input in the entry field which constitutes a complete mathematical expression, and then click on a keypad button. This will create a new mathematical expression within which the expression selected is one component. The same basic rule applies: the minimum unit of manipulation is a complete mathematical expression.

4.6.5 Other Mathematical Signs

The following mathematical signs can be entered only from the keyboard:

- The plus sign (+).
- The minus sign (-), both for connecting the two parts of a subtraction expression and for designating a negative number.
- The period (.) used in decimals.
- The comma (,) used to punctuate numbers of more than three places.

4.6.6 The Asterisk for Multiplication

This is a special case. The "x" character on the keyboard cannot be used to enter a multiplication sign. Only the asterisk (*) serves this purpose. (The multiplication sign on the Answer Editor keypad, however, is the traditional x-shaped symbol.)

4.6.7 Mixed Numbers

This is another special case. Although fractions can be entered from the keyboard using the front slash character (/), mixed numbers **cannot** be entered this way. In other words, the Answer Editor does not automatically regard a whole number followed by a fraction as a mixed number. The mixed number button on the Answer Editor keypad **must** be used to enter mixed numbers.

4.7 Types of Mathematical Expressions

The following set of directions is intended to illustrate the variety of ways in which mathematical expressions can be entered using the Answer Editor.

Here, **Button** will always refer to a button on the Answer Editor keypad. By **select** we mean drag the mouse over the expression to be selected with the mouse button depressed.

Percentage 48%

Here you can use either the Answer Editor keypad or the regular keyboard to enter signs:

- Enter the expression you wish to express as a percentage and click on the percent button; **OR**
- Enter the expression you wish to express as a percentage and then enter the (keyboard) percent sign.

Fraction $\frac{7}{10}$

Fractions can be entered in at least three ways:

- Enter the numerator, enter a (keyboard) forward slash character, and enter the denominator; **OR**
- Enter the numerator, click on the fraction button, and enter the denominator; **OR**
- Click on the fraction button, enter the numerator, then click on the blue square in the position of the denominator and enter the denominator. You can also advance the cursor to the position of the denominator using the keyboard.

Mixed Number $5\,\frac{7}{8}$

Mixed numbers can be entered in more than one way, but each way requires use of the mixed number button:

- Enter the whole number part, click on the mixed number button, enter the numerator, press Enter, and enter the denominator; **OR**
- Click on the mixed number button, enter the whole number part, press the right arrow, enter the numerator, move the cursor to the denominator position, and enter the denominator (i.e., fill in the boxes).

Repeating Decimal $1.\overline{27}$

- Enter all digits that precede the repeating pattern, including the decimal point (a period on the keyboard) and any decimal places preceding the pattern, click on the bar button, and enter the repeating pattern; **OR**
- Enter all digits, including the decimal point (a period on the keyboard) and all decimal positions following it, select the repeating pattern only, and click on the bar button.

Fraction in square root followed by multiplier $\sqrt{\frac{5}{8}} \times 3$

For this example only one input method is given, but others could be suggested:

- Click on the square root sign button, click on the fraction button, enter the numerator, tab, enter the denominator, then tab, enter an asterisk (from the keyboard), and enter the multiplier.

List $1, 2, 3$

For the purposes of the following example, assume that there is a list consisting of three components to be entered:

- Enter the first expression, click on the list button (or press the keyboard comma), enter the second expression, click on the list button, enter the third expression, click on the list button, and enter the fourth expression; **OR**
- Click on the list button (or press the keyboard comma) twice, click on the first blue box, enter the first expression, move the cursor right, enter the second expression, move the cursor right, and enter the third expression.

Answers with Units 10 *cups*

There are also some cases where the Answer Editor does part of the formatting. For example, in problems where answers must be expressed in some kind of units, such as dollars or meters, the unit expression needed may appear in advance.

Square Root $\sqrt{81}$

- Click on the square root button and enter the expression into the square root sign; **OR**
- Enter the expression you wish to appear under the square root sign, select it, and click on the square root button.

In the simple example just given the second method reverses the sequence of steps of the first method. Such complementary methods are typical.

Absolute Value $|-6|$

Another pair of complementary methods:

- Click on the absolute value button and enter the expression whose absolute value you wish to express; **OR**
- Enter the expression whose absolute value you wish to express, highlight the entire expression, and click on the absolute value button.

Exponent 3^2

- Enter the expression you wish to raise to a power, click on the exponent button, and enter the exponent; **OR**
- Click on the Exponent button, enter the base, then move the cursor to the exponent box and enter the exponent.

NOTE. If the number you wish to raise to a power is more complex, it may need to be enclosed in parentheses (Sec. 4.6.3).

Square Root Preceded by Multiplier $2\sqrt{6}$

With more complex expressions, you can use the mouse to place the cursor in the needed position, as in the second method:

- Enter the multiplier, click on the square root button, and enter the expression you wish to be under the square root sign; **OR**
- Click on the square root button, click to the left of the square root sign, enter the multiplier, tab (or press the right arrow, or press Enter, or press the Spacebar, or click on the blue box under the square root sign), and enter the expression you wish to be under the square root sign.

4.8 Advanced Mathematical Expressions

The following types of mathematical expressions occur in more advanced subjects.

To create a matrix, click on an icon corresponding to the dimensions desired (2×2, 2×3, *etc.*), then fill in the cells with appropriate values.

For topics involving set notation, there will appear icons for each of the special symbols required, such as curly braces, "belongs to," "such that," the real numbers, the integers, and so forth.

4.9 The Answer Editor for Graphing

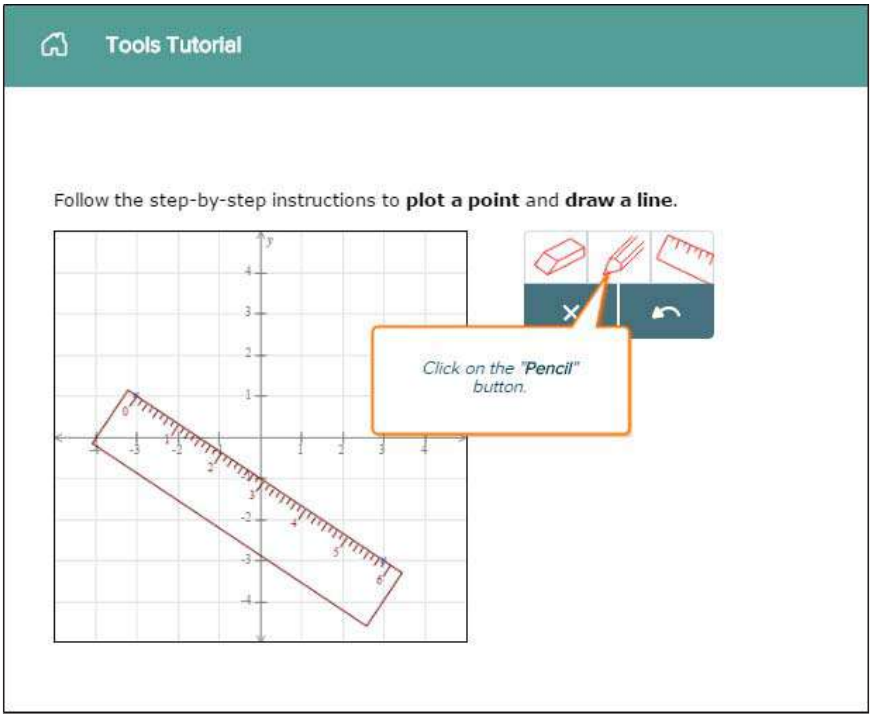


Figure 4.4: The Answer Editor for Graphing

The Answer Editor for graphing consists of a Cartesian plane with $x-$ and $y-$ coordinate axes and a selection of other tools for graphing lines and regions of the plane (Fig. 4.4).

To graph a line, use the pencil tool to plot two points. Then, align the straightedge (ruler) on the two points (it is a "grabby" tool and will jump to a point when it is near it). Then use the pencil tool to draw the line. Note that the effect of the straightedge continues past its ends, so there is no need to move it to make a line

going from edge to edge of the depicted plane. The line should be started within the graph area, however.

To fill in a region, first, draw all the lines defining the region. Then use the region tool and click in the desired region of the plane. In order for one or more of the lines defining a region to be dotted (as in the graph of a system containing one or more strict inequalities), click on the line with the dotted line tool. This may be done before or after the region is filled.

To draw a graph, use the pencil tool to plot a point. Then, click on the Plot point button twice.

To plot a point where the coordinates are non-integers, use the Plot point button. Using the keyboard, type the numerical values into the coordinate boxes and click **Plot point.**

To draw a graph requiring an asymptote, use the asymptote tool (broken horizontal or vertical line) to place the asymptote as needed. A slanted asymptote may be placed by first drawing two points and then using the tool with a broken diagonal line. Plot the additional points needed for the graph, and then click on the graph button (curved line connecting "X"s).

For each type of conic section, there is a special tool allowing the construction of its graph. Normally, the user clicks once with the tool to establish the center or vertex of the graph, and then one or more additional times to determine its final form.

As with the number line, select the eraser tool and click on any part of a line, arc, or other component to remove it.

4.10 The Answer Editor for Histograms

The Answer Editor for histograms consists of a space for drawing histograms and icons (buttons) for creating and adjusting bars (Fig. 4.5).

Initially, the histogram appears with a small number of bars (e.g., two). The height of the bars is adjusted by clicking on the top edge of each and holding the mouse button down while dragging to the desired height. To add bars, click on the icon with the plus sign; to subtract bars, click on the icon with the minus sign. Each bar has a space beneath it where an appropriate label can be typed in.

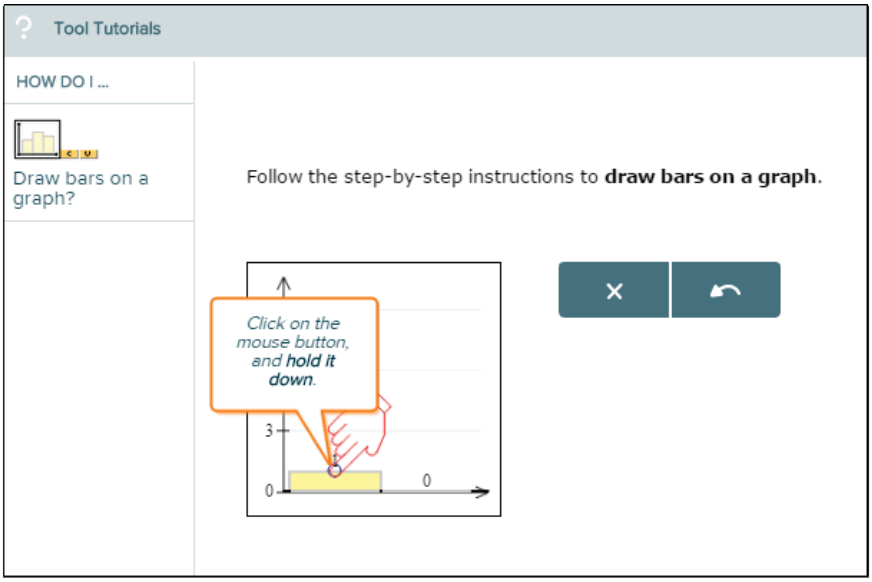


Figure 4.5: The Answer Editor for Histograms

Any bar may be set to any integer height by dragging. To set the height of a bar at a non-integer value, enter the value in the white area to the upper right of the histogram, then click on the icon with the broken horizontal line. This will place a broken line on the histogram at that height. Any bar may then be dragged to the height of any broken line that has been placed.

Chapter 5

Learning Mode

5.1 The ALEKS Learning Mode

The purpose of the Learning Mode is to assist students in mastering mathematical concepts. Students using ALEKS choose which concepts they wish to work on from the pool of available topics in the pie slices. This list of available topics is constantly being updated through progress made by the student in Learning Mode or as the result of an assessment. As students are only presented with material the system has determined they are most ready to learn, the benefit of their work is maximized.

In the Learning Mode students always work on one concept at a time. The Learning Mode provides students with a rich array of resources to help in mastering concepts. This includes explanations, references to a textbook if one has been integrated with ALEKS, links to supplemental tutorial material and interactive applications, practice problems, diagnostic feedback on problem solutions, and access to a student mathematical dictionary. Moreover, the Learning Mode is designed to monitor the progress made by students toward mastery of a given concept and advise them on continuing or changing concepts. A student is required to solve an appropriate number of practice problems correctly before the system will conclude that the concept has been mastered. (If the student makes mistakes, additional practice will be required.) Once the concept has been mastered, the student is encouraged to choose a new concept from the (updated) pie chart, but more practice is available if desired.

If the student has difficulty, the system may suggest that the student pay closer attention to the explanations. A new selection may also be encouraged. The student continues to work in the Learning Mode until a new assessment is triggered, either by the instructor or automatically. Automatic assessments are triggered when the student has either spent a certain amount of time in ALEKS or made a certain amount of progress since the last assessment (Sec. 4.3.2).

5.2 Interface Features

The features of the Learning Mode interface allow the student to edit personal information related to their account, view reports and gradebook information, and access helpful tools such as the ALEKS Dictionary, Calculator, and Review.

Students also have the ability to print certain screens in ALEKS. The **Print** feature will be available when the student generates a worksheet, views their reports, or utilizes the **Explain** page in Learning Mode. More detailed explanations of these options can be found below.

For a detailed description of the features of the student interface in ALEKS, please see Appendix A, the Student User Guide.

5.3 The Learning Mode Workflow

The ALEKS Learning Mode allows students to practice topics they are ready to learn. When students successfully solve a series of problems of the same type, ALEKS will add this problem type or "topic" to the student's pie chart. If a student experiences difficulty with a topic, ALEKS will attempt to help the student in several ways. Students receive immediate feedback on their answers. Examples of how to solve the problems will be displayed on the "Explain" pages. The "Explain" pages link to definitions of terms and a comprehensive dictionary.

5.3.1 Practice Page

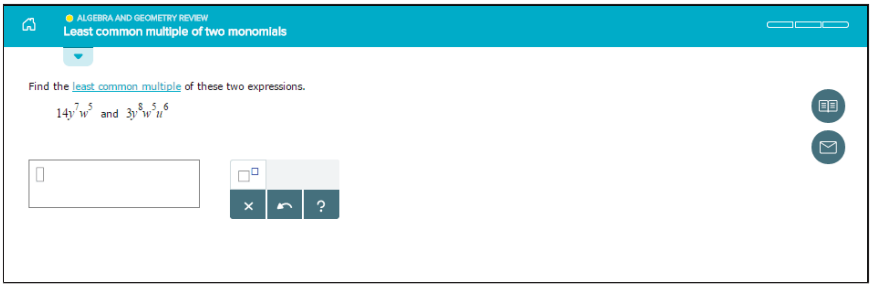


Figure 5.1: Practice Page

When a student chooses to begin work on a topic, ALEKS will display a page containing an instance of the problem, followed by the Answer Editor. This is where a solution to the problem can be attempted (Fig. 5.1). All practice problems are generated by algorithms, with randomly selected numerical values, so that the variety of problem instances for any topic is very high.

Below the Answer Editor are buttons labeled **Explanation** and **Check**. Clicking on **Check** has the same effect as described for the Assessment Mode: it submits the answer. Here, however, the user is given immediate feedback on their answer (Sec. 5.4). If correct, the student will receive a congratulatory message.

When the student clicks **Next**, a new problem is presented. In the case where the topic is considered mastered, the student will receive a congratulatory message and the system will offer to suggest new topics.

When the student enters an incorrect answer, ALEKS will return the presentation of the original problem with feedback on the student's error. Students can then click the **Explanation** button.

5.3.2 Explanation Page

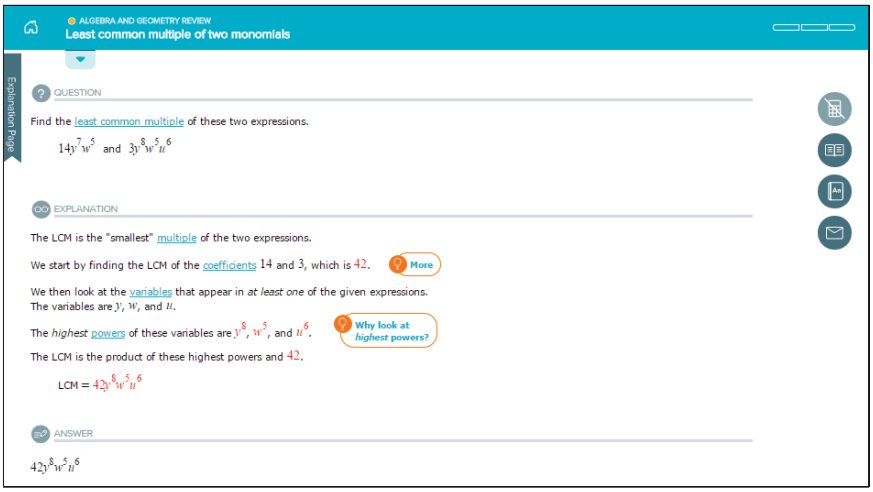


Figure 5.2: Explanation Page

The Explanation Page (Fig. 5.2) begins with the title of the current item and an instance of that item. The answer to the problem is given at the end of the explanation.

When ALEKS is used with textbook integration,

an icon will appear on the right of the Explanation page, linking to a reference or to an online textbook. Additional tutorial material and interactive applications may also be found through other icons at the right of the Explanation Page.

Certain parts of the Explanation may be expanded by clicking on a **More** icon. Here again, mathematical terms are linked to dictionary definitions. The system may suggest looking up certain key terms to help with the explanation (especially if the explanation has already been visited). At the bottom of the page is the **Start** button. Clicking on this button produces a new instance of the same problem-type. Sometimes there may also be a button for **Additional Explanation** or **Detailed Explanation**.

5.3.3 Wrong Answer Page

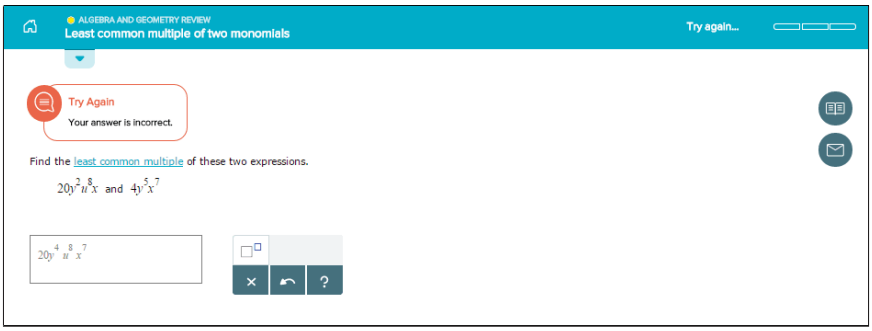


Figure 5.3: Wrong Answer Page

The Wrong Answer Page will appear only after an incorrect answer has been submitted on the practice page (Fig. 5.3). The system may explain why the answer is incorrect and offer advice on the error. Underlined words (hypertext links) may also appear on the screen for students to look up in the Dictionary.

The old, incorrect answer appears in the Answer Editor, where it can be corrected and resubmitted. Again, clicking on **Explanation** is an option that leads to an explanation of the problem. Please note that the system may also take the student directly to the "Explain" page if an item has been missed too many times.

5.4 Feedback in Learning Mode

In the Learning Mode, feedback is integrated into a sophisticated system of guidance for the student. Some errors prompt ALEKS to give specific hints and suggestions (Fig. 5.3). For example, it may say that a fractional answer needs to be reduced or that a list of expressions is incomplete. After a correct answer, the system will ask a limited number of questions for the same concept before judging that it has been mastered. If an item is missed too many times, however, a new topic will be suggested. If a concept has been left without mastery being attained, the system may suggest returning to it after one or two other topics have been covered.

5.5 Review

A student using ALEKS can review topics recently mastered in the Learning Mode or Assessment by selecting the **Review** filter in the topic carousel (Fig. 5.4). Clicking on any of these topics provides the chance for additional practice; this is particularly useful when the student knows that a new assessment (knowledge check) is imminent.

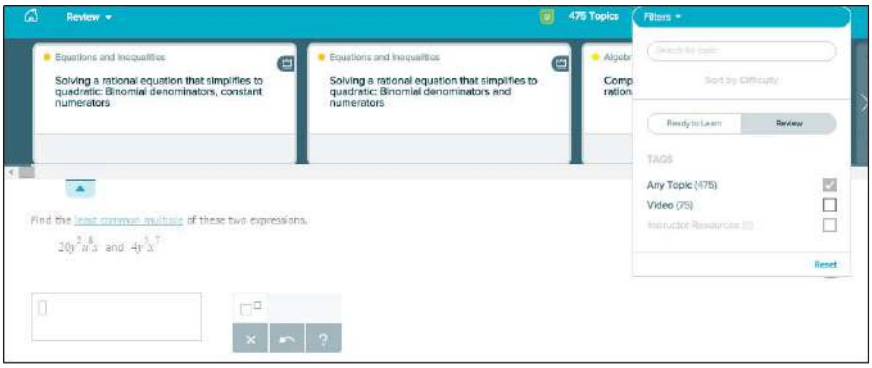


Figure 5.4: Review

NOTE. Work done in Review mode does not affect the student's pie chart or progress records.

5.6 Worksheet

Clicking the **Worksheet** button in the Main Navigation Menu (upper left) lets the student generate an individualized, printable homework sheet (in PDF format) containing a number of questions based on the student's most recent work in ALEKS (Fig. 5.5). When the student does this, a sheet containing answers for this individual worksheet (labeled with the student's name and the date) is sent to the instructor via the ALEKS message system (Sec. 7.2.2). The instructor may permit students access to their worksheet answers.

A record will be kept on the Worksheet page of all worksheets produced by the student. The student can click on the link for any past worksheet in order to obtain that worksheet again. If the instructor has permitted access to worksheet answers, there will also be links on this page to answer keys for each of the worksheets.

NOTE. In order to view or print documents in PDF format, such as the ALEKS worksheet, Adobe Acrobat or Adobe Acrobat Reader must be installed on your computer. Most computers have this software. If for any reason your computer does not, there is a link on the ALEKS Worksheet page to download it. Also, because the worksheet is opened in a new browser window, it may be necessary to disable your pop-up blocker temporarily in order to view or print the ALEKS worksheet.

ALEKS® Worksheet

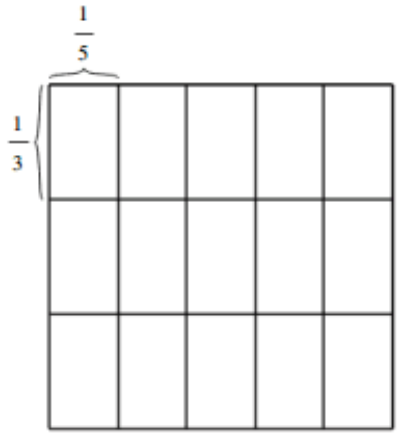
Carly Palmer - Worksheet #1 - 06/25/2015 8:48 AM
Pre-Algebra / Period 2 (CPALMER508)

Review Questions

1. Estimate $21{,}535 - 11{,}566$ by first rounding each number to the nearest thousand.

2. Shade a region whose area is $\frac{2}{3} \times \frac{2}{5}$.

Then use the figure to compute $\frac{2}{3} \times \frac{2}{5}$.



$\frac{2}{3} \times \frac{2}{5} = \square$

3. Evaluate.

$4 \cdot 4^2 \div 8$

Figure 5.5: Worksheet

Chapter 6

QuickTables

QuickTables is a special tool for mastery of Arithmetic facts (Addition, Subtraction, Multiplication, Division). It is available as part of some ALEKS course products and as an independent ALEKS course product. QuickTables uses individually configured, progressive, paced-response drills to develop mastery of the math facts, in a supportive, colorful interactive environment. Among many other features, it offers a series of games which the students "earn" through the progress that they make toward mastery of the various fact tables.

6.1 Setting Up QuickTables for your Class

In any ALEKS class where you choose to include QuickTables, you can select one or more of the following tables: Addition, Subtraction, Multiplication, and Division. The selection may be changed at any time; for example, you may start out with only Addition, then add Subtraction and the others one at a time as the students work their way through these tables.

Some ALEKS course products have QuickTables enabled by default, others not. Depending on the selected class, you will be prompted to add QuickTables at different times during the setup.

When creating a class in ALEKS, **if the class has QuickTables included by default**, you can add the QuickTables tables as part of the class creation process. **If the class does not have QuickTables included by default**, you will need to create and save the class before adding the QuickTables via the **Class Summary** (Sec. 7.4.15) and then **Set QuickTables** (Sec. 6.1.2).

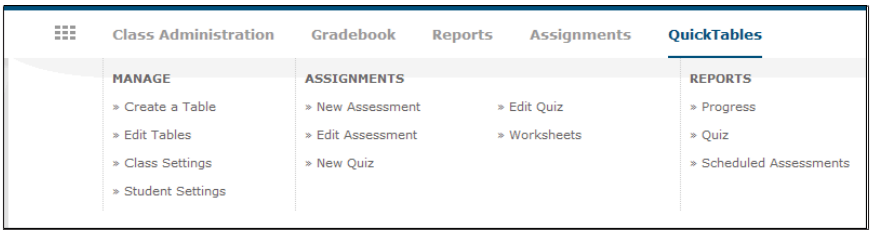


Figure 6.1: QuickTables Menu

6.1.1 QuickTables Sub-Navigation

From the **QuickTables** sub-navigation for the given class, instructors can add tables, modify existing tables, view or update the QuickTables settings, and view reports (Fig. 6.1).

The available options are:

- Create a Table (Sec. 6.1.2)
- Edit Tables (Sec. 6.1.3)
- QuickTables Class Settings (Sec. 6.1.4)
- QuickTables Game Settings (Sec. 6.1.5)
- QuickTables Retention Assessment Settings (Sec. 6.1.6)
- QuickTables Student Settings (Sec. 6.1.7)
- QuickTables Assignments (Sec. 6.2)
- QuickTables Reports (Sec. 6.3)

6.1.2 Create a Table

To create a table for the selected class, from the **QuickTables** sub-navigation, select **Create a table**.

On the **Create a new table** page (Fig. 6.2), you will need to:

1. Select the operation for the table (Addition, Subtraction, Multiplication, Division).
2. Select the range of numbers to be used.
3. Make the table available to all students in this class (the default) or only to selected students.
4. Click **Save & Activate Table**.

After you have clicked to confirm your choice, the table will be listed under **Tables Currently Active for this Class**. If you wish to make changes to the table(s), select **Edit tables** (Sec. 6.1.3).

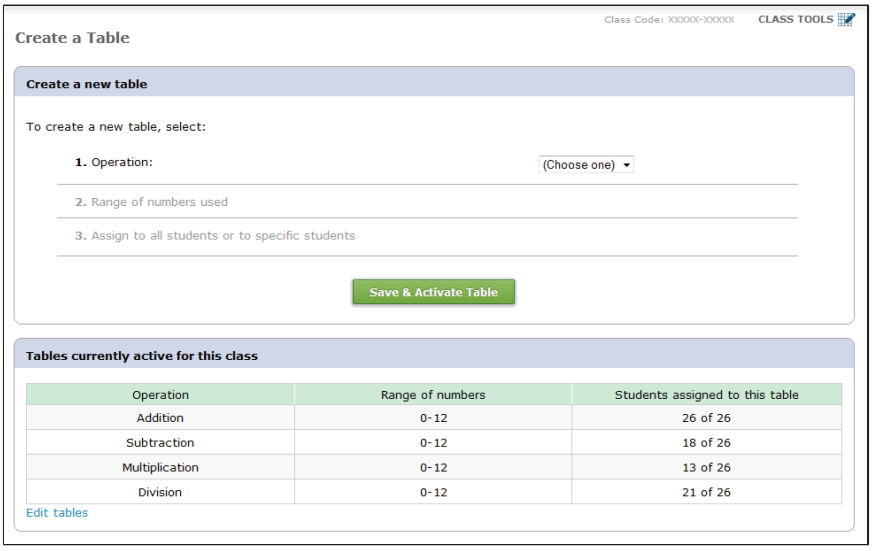


Figure 6.2: Create a Table

NOTE. A student's QuickTables records move with the account, regardless of the class. In order for the records to appear, however, the new class needs to have the same QuickTables configuration as the original class.

6.1.3 Edit Tables

To edit a table, from the **QuickTables** sub-navigation, select **Edit Tables**.

On the **Edit Tables** page, instructors can do the following:

- Reassign Students to a table(s).
- Delete a table.
- Create a table.

6.1.4 QuickTables Class Settings

The QuickTables Class Settings affect all QuickTables use for the given class. After you gain some experience using QuickTables, you may decide to change some of the default settings (Fig. 6.3).

The available options are:

- The daily time limit for the entire QuickTables session (default 15 minutes).
- The maximum number of days QuickTables can be used each week (default 3 days).

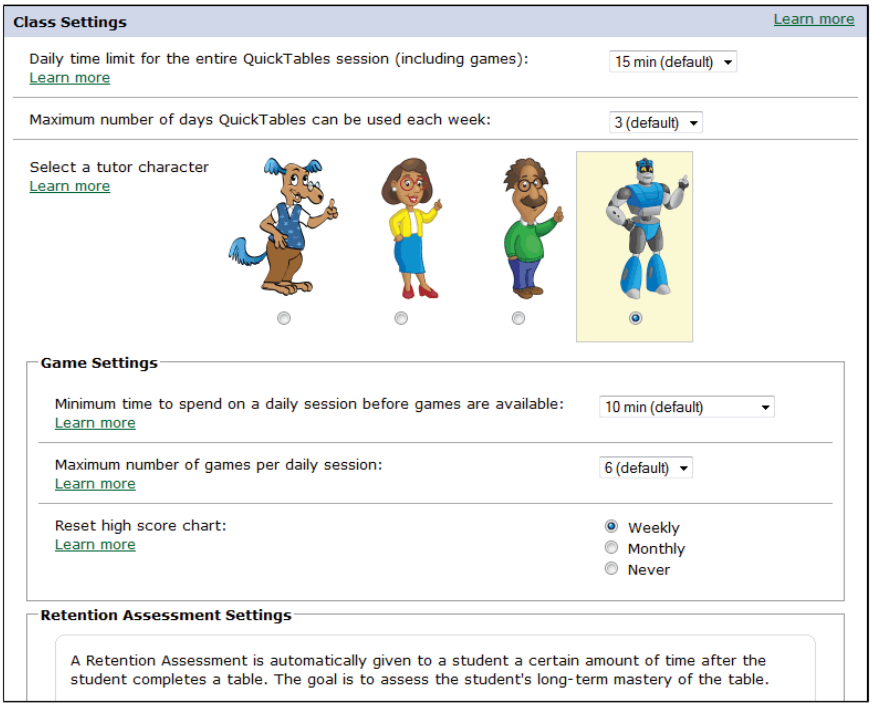


Figure 6.3: QuickTables Class Settings

- The tutor character.
- The Game Settings (Sec. 6.1.5).
- The Retention Assessment Settings (Sec. 6.1.6).

Use of QuickTables should be limited to ensure that students also spend time working in the regular ALEKS class (if applicable). The benefits of using the type of drills that QuickTables provides are greatest when concentrated in relatively short and well-spaced sessions. These short "bursts" of activity help keep the students' concentration sharp.

6.1.5 Game Settings

As an incentive and teaching tool, QuickTables offers several short games in which students practice the facts they have been learning.

To access the **Game Settings**, from the **QuickTables** sub-navigation, select **Class Settings**.

Minimum time to spend on a daily session before games are available
: This is the minimum time students must spend in QuickTables before games become available. Please note that if this is set to a length of time greater than the daily time limit for QuickTables (first setting at the top of the QuickTables Course Settings screen), the student will never have access to the games.

Maximum number of games per daily session

As students progress in QuickTables, they are given access to a greater variety of games. You can limit the number of times a student can play the games in a daily QuickTables session (default 6).

Reset high score chart

The final option for the Game Settings, is to reset the "high score chart" at regular intervals. Playing QuickTables games, students earn numerical scores that are compared with the scores of other students in the class. The current "high score" is reset at the interval that you choose (default weekly), to establish a regular period of competition among students for added motivation.

6.1.6 Retention Assessment Settings

To access the the **Retention Assessment Settings**, from the **QuickTables** sub-navigation, select **Class Settings**.

Retention Assessments are given to students when they complete a table in QuickTables. Their goal is to assess the student's long-term mastery of the table. QuickTables does not have Progress Assessments. By default, the number of Retention Assessments per table is two. Additionally, by default, the number of days between when a student completes a table and a Retention Assessment is 30 days. Both these settings can be adjusted, as can a location setting for the Retention Assessment. When a Retention Assessment is triggered, QuickTables will force the student to take it so that they are not able to work in any other table until the assessment is completed.

After a Retention Assessment, the system behaves as it would after an Initial Assessment: if the result of the Retention Assessment is 100%, ALEKS displays the congratulations screen. If not, the student can continue in the Learning Mode. The system will use the result of the Retention Assessment as a starting state for the Learning Mode. The student does NOT have to work in this table and can choose another available table.

NOTE. By default, ALEKS gives two Retention Assessments per table 30 days after completion, no matter the result of the previous assessment. (Even if the student scored 100% after the first Retention Assessment, the student will have another one 30 days later.) Selecting **None** means that there will be no Retention Assessment for the class. Please be aware that if this option was set to one or more, and a Retention Assessment has been triggered, it cannot be canceled. Switching the option to **None** will not cancel a Retention Assessment that has already started.

6.1.7 QuickTables Student Settings

To modify student settings, from the **QuickTables** sub-navigation, select **Student Settings**.

- **On-screen keypad** is a numeric keypad that appears and is controlled using the mouse. You can hide or show this keypad. It can be made available for students who have trouble using the keyboard.
- **On-screen timer** is the the display of the time elapsed for a problem. You can hide or show this timer.
- **Timer setting** is the time that the student is given to input a correct answer. For effective practice, this number should be as low as reasonable. The Timer setting, for an individual student, cannot be modified until the keyboard exercise is completed.

6.2 QuickTables Assignments

Like the regular ALEKS course products, instructors can create assignments for QuickTables such as assessments, quizzes, and worksheets for the class. QuickTables Assessments and Worksheets are individualized to each student's current progress. Instructors can also produce customized Worksheets on selected facts from the tables.

6.2.1 QuickTables Scheduled Assessments

In addition to automatic Retention Assessments, instructors can schedule new assessments for an individual student or for the entire class, to assess students on their most recent knowledge of any tables.

To schedule an assessment:

1. From the **QuickTables** sub-navigation, select **New Assessment**.
2. Complete the Basic Options and Advanced Options for the quiz and click on **Save & Continue**.
3. Click **Done** to confirm the information.

To edit an assessment:

1. From the **QuickTables** sub-navigation, select **Edit Assessment**.
2. Select the assessment you would like to edit.
3. On the screen that follows, make your changes or create extension. You can also cancel the assessment by clicking on **Cancel this Assessment**.
4. Click **Done** to confirm the information.

6.2.2 QuickTables Quiz

Instructors can create a QuickTables quiz for a single student or for the entire class.

To schedule a Quiz:

1. From the **QuickTables** sub-navigation, select **New Quiz**.
2. Choose the table operation and math fact range, and then click **Next**.
3. On the following page, click on a math fact to add it to the quiz and then click **Next >>**. (Please note that you will need to add a minimum of 10 math facts for each quiz.)
4. Complete the Basic Options and Advanced Options for the quiz and click on **Save & Continue**.
5. Click **Done** to confirm the information.

To edit a Quiz:

1. From the **QuickTables** sub-navigation, select **Edit Quiz**.
2. Select the quiz you would like to edit.
3. On the screen that follows, make your changes or create extension. You can also delete a quiz by clicking on **Delete this Quiz**.
4. Click **Done** to confirm the information.

NOTE. Students that joined the class after a QuickTables quiz was created will not be prompted to take the quiz.

6.2.3 QuickTables Worksheets

Instructors can provide additional practice offline by generating QuickTables worksheets for the students.

To access QuickTables worksheets, from the **QuickTables** sub-navigation, select **Worksheets**.

View/Create Worksheets for a Single Student
This option allows you to choose a table and automatically create a customized worksheet for a single student, or view all such worksheets created so far.

View/Create Worksheets for all Students
This option allows you to choose a table and automatically create a customized worksheet for each student based on the student's progress, or view all such worksheets created so far.

View/Create Selected Math Fact Worksheets
This option allows you to choose one or more tables and design your own worksheet by selecting facts from the tables, or view all such worksheets created so far.

6.3 Reporting your Students' Progress in QuickTables

Reports for QuickTables may be accessed via the **QuickTables** sub-navigation.

Three types of report are available in QuickTables:

- Progress
- Quiz
- Scheduled Assessments

6.3.1 QuickTables Progress Reports

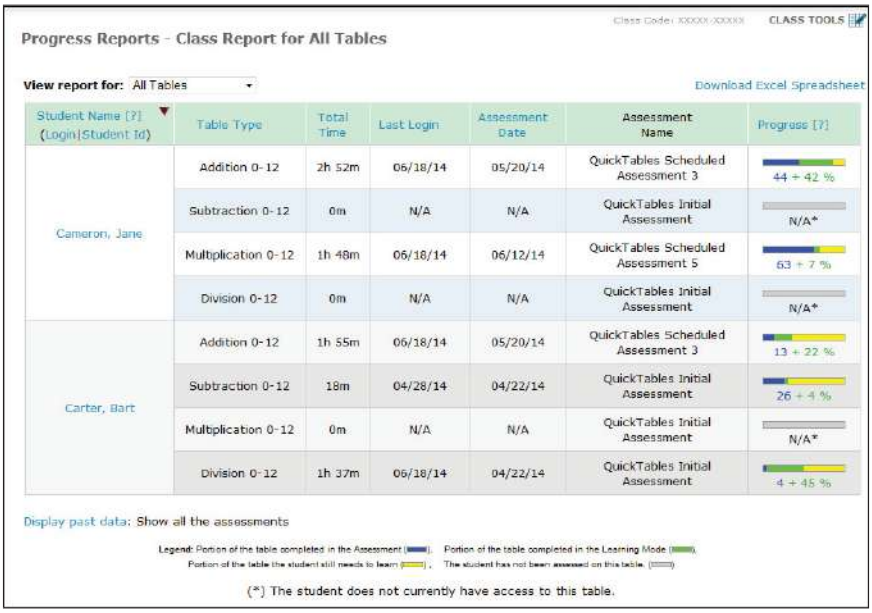


Figure 6.4: QuickTables Reporting

To view QuickTables Progress Reports:

1. From the **QuickTables** sub-navigation, select **Progress**.
2. Use the drop-down menu to select either **All Tables** or a specific table.

The Progress Report view for QuickTables shows, for each student (Fig. 6.4):

- The total time spent in QuickTables since completion of the typing tutorial.
- The last login date.
- The assessment date, which is the date the assessment was completed.
- The bar graph, which is a representation of the student's progress in QuickTables. The bar graph displays percent mastery of the table contents in blue for the most recent assessment, with an additional segment in green showing what was added since that assessment (blue plus green equals the student's total current mastery). A grey bar indicates that the student has not yet been assessed on the table.

To print the QuickTables progress report, use the ALEKS Print button to upper right; to download its contents in Excel format, use the **Download Excel Spreadsheet** link. To see separate bar graphs for all of your students' assessments, use the link beneath the report marked **Display Past Data**. The student data may be ordered by any of the green clickable column headings. To see more details such as the date the student completed the table, click on the percentage under the **Progress** column.

6.3.2 QuickTables Quiz Reports

To view QuickTables Quiz Reports:

1. From the **QuickTables** sub-navigation, select **Quiz**.
2. Use the drop-down menu to select a quiz.

The Quiz result view for QuickTables shows, for each student:

- The date the quiz was submitted.
- The timer setting, meaning how long the student has to answer each question.
- The total time spent in the quiz.
- The percentage score. (You can click on the link to the right of a student's score to see the results in greater detail.)
- The letter grade.

The student data may be ordered by any of the green clickable column headings. To download the results in Excel format, click the link below the chart.

6.3.3 QuickTables Scheduled Assessment Reports

To view QuickTables Scheduled Assessment Reports:

1. From the **QuickTables** sub-navigation, select **Scheduled Assessments**.
2. Use the drop-down menu to select a scheduled assessment title.

The QuickTables Scheduled Assessment report view shows, for each student:

- The date of the assessment.
- The time spend on the assessment.
- The results of the assessment.

Clicking on the percentage link to the right of a student's bar graph will display the results in greater detail. This view will display a table of the assessment results or learning, showing their level on each of the math facts.

Like other reports in QuickTables, the order of student data for scheduled assessment may be ordered by any of the green clickable column headings. The class data may be downloaded to an Excel format by clicking on the link below the chart.

6.4 How Your Students Use QuickTables

When students log in to an ALEKS class where QuickTables is enabled, they see the **QuickTables** option in the top bar menu. Clicking on this option will switch them into the QuickTables environment.

6.4.1 QuickTables Keyboard Exercise

The first time students enter QuickTables, they are given a brief training on how to enter numbers quickly. The goal of the initial keyboard exercise is to increase the students' typing speed and accuracy. The keyboard exercise is parallel to the Tutorial that students experience when using ALEKS for the first time, but focused exclusively on typing and entering numbers smoothly and promptly. Numbers can be "entered" by using the **Enter** key or the **Space Bar** on the keyboard.

6.4.2 QuickTables Testing Mode

Following the introductory training, students select an operation and then take a brief test to determine their current knowledge of the math facts in the particular table. (Where there is more than one table, a test will be taken for each new table.) This is parallel to the Initial Assessment taken in regular ALEKS. **This initial assessment test must be finished in one login session. Logging out before it is complete will require restarting the test.**

6.4.3 QuickTables Learning Mode

When the student completes the test, the color-keyed Learning Display is presented, showing their current knowledge of the table. The student is then able to choose how they will work toward complete mastery of the table facts (Fig. 6.5). This display has a function similar to that of the pie chart in regular ALEKS.

To choose a math fact to work on, the student clicks on the corresponding cell in the table. If the student simply presses **Enter** or the **Space Bar**, a fact will be chosen from those available. There is a brief introduction to the fact, and then a paced drill

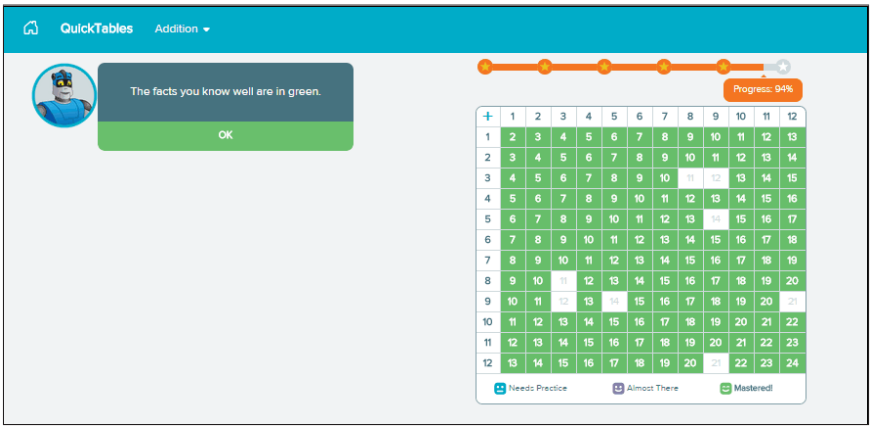


Figure 6.5: QuickTables Learning Display

sequence in which review of previously-learned facts is mixed in with reinforcement of the new fact. Sequences are kept short so that the student's concentration remains high. If there is a mistake, the drill is halted while the student reenters the correct answer, with help from QuickTables; also, if the student takes too long in answering, there is a similar halt while the student catches up with the drill. Once the student shows mastery of the new fact, there is a pause before the next cycle of learning.

Students can view a report of their work in QuickTables by clicking on **Options** located in the upper right of the screen. Clicking on **view your latest QuickTables report** link will display their QuickTables assessment results and QuickTables quiz results.

NOTE. The drill provided by QuickTables is paced, in the sense that students need to enter their answers within a specified "Target Time." QuickTables seeks to develop quick, "automatic" response to questions on math facts. The actual time interval for answering is subject to customization (Sec. 6.1.7).

As the student progresses in mastery of new facts, the colors in the table flow across the report to show the changing area of mastery. This provides the student with direct, tangible evidence of progress, building the student's motivation. At the same time, the thermometer graphic to the right of the table also indicates the percentage of the table contents that the student has worked through. Gold stars next to the thermometer indicate levels of progress where new games become available to the student.

6.4.4 QuickTables Games

Students can click on the **Games** option in the top bar to take a break from drill and play any of the games that they have earned (Fig. 6.6), subject to the limits chosen by the instructor (Sec. 6.1.5). The games provided in QuickTables are designed to reinforce the students' knowledge of the math facts that they have just learned. The activation of games is based on progress made in a single table. If a student works in multiple

Figure 6.6: QuickTables Games

tables during a single session, the progress may not be enough in any one of them to cause a new game to appear.

NOTE. When students have spent the maximum daily amount of time allowed in QuickTables, they will receive a message, "You have used up all your QuickTables time today. Please come back another day." The maximum daily amount of time is subject to customization (Sec. 6.1.4).

6.4.5 QuickTables Completion Certificate

Figure 6.7: QuickTables Games

Students who complete a QuickTables table can print a certificate of completion by logging into their account, entering QuickTables, and pressing the tab of the mastered table. The certificate will appear, and a **Print** link will be available (Fig. 6.7).

Chapter 7

Instructor Module

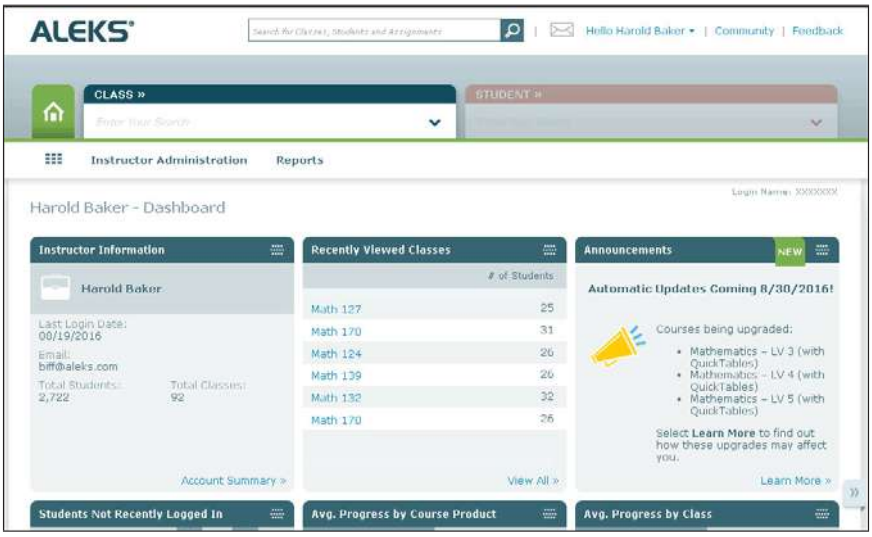


Figure 7.1: Account Home Screen

The ALEKS Instructor Module features a streamlined interface, based around a system of organizational levels and dynamic dashboard tiles. The Instructor Module makes class management simple, and allows instructors to spend less time with administrative tasks and more time directing student learning.

7.1 Navigation

There are several ways to navigate the Instructor Module. They include using the search box, main navigation, sub-navigation, or the dashboard. These navigation techniques are described below.

7.1.1 Search Box

Figure 7.2: Search Box

The **search box** can be found at the top of any page in the Instructor Module (Fig. 7.2). It can be used to search all pages in the Instructor Module with the exception of the ALEKS Community and the Class Forum. To search for a class, student, or assignment type in a search query and then select the **Enter** key. Alternatively, you can type in a search query and then click the search icon next to the **search box**.

7.1.2 Main Navigation

Figure 7.3: Main Navigation

Instructors have access to a two-level hierarchy: class and student (Fig. 7.3). The navigation structure is tab-driven for easy navigation and starts with the **CLASS** tab on the left. This tab contains all classes taught by the instructor.

Instructors begin by opening the drop-down menu and selecting a class, or by typing into the open box to bring up matches from the menu.

Once a class is selected, the **CLASS** tab becomes the active tab (current level in the hierarchy), and instructors have access to class-related menus and the class dashboard.

Instructors can remain at the class level or make a selection in the **STUDENT** tab to move down to that level. The **STUDENT** tab contains all the students enrolled in the selected class. As with the **CLASS** tab, selections can be made by clicking on a student's name or by typing in the search field to bring up a match. After selecting a student, instructors will have access to student-related menus and that specific student's dashboard.

7.1.3 Sub-Navigation

The sub-Navigation displays menus related to the selected item in the main navigation (class or student) (Fig. 7.4). To return to the tab level, click on the top of the appropriate tab to make it active again.

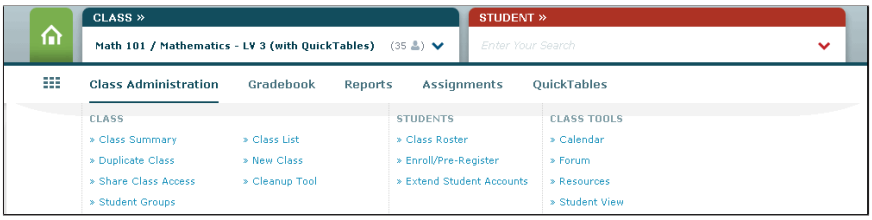


Figure 7.4: Sub-Navigation

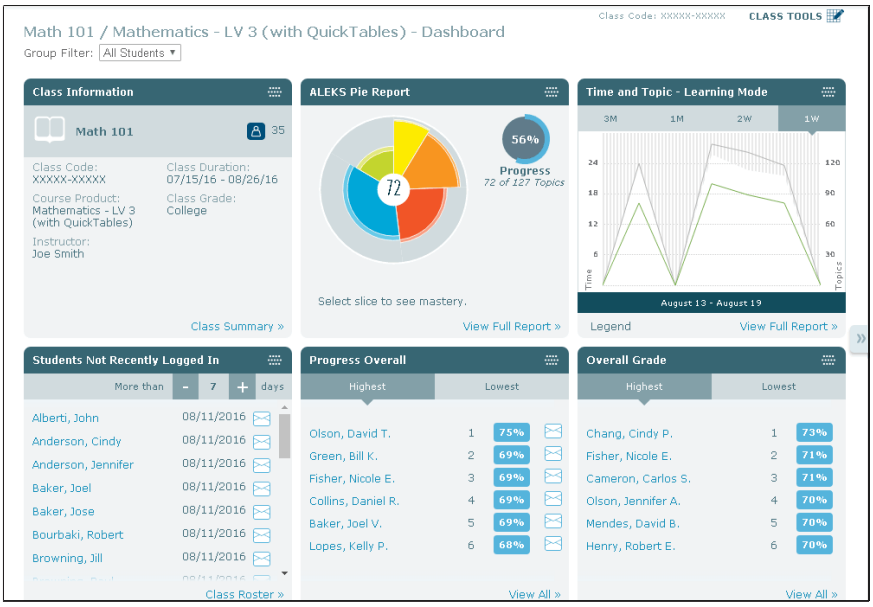


Figure 7.5: Dashboard

7.1.4 Dashboard

The Dashboard displays quick overviews of important data applicable to the level currently selected (Fig. 7.5). Each Dashboard consists of dynamic tiles that update when the Dashboard is opened. The Dashboard displays six tiles at a time; additional tiles can be found by clicking the navigational arrow button to the right or left of the Dashboard. The display order of the dashboard tiles can be changed by moving the tiles around on the screen.

To rearrange dashboard tiles on a tablet:

1. Press and hold your finger on the tablet screen over the title of the dashboard tile.
2. Drag the tile to the desired location.
3. Remove your finger from the screen to drop the tile in place. The rest of the tiles will automatically update their position relative to the moved tile.

To rearrange dashboard tiles on a computer or laptop:

1. Move the mouse over the title of the dashboard tile.
2. Click and hold. You will see the tile become slightly larger.
3. Move the tile to the desired location.
4. Unclick the mouse to drop the tile in place. The rest of the tiles will automatically update their position relative to the moved tile.

Many of the dashboard tiles are interactive. For example, moving the mouse around the pie chart on the **ALEKS Pie Mastery** dashboard tile will display the mastery levels for that particular slice. Additionally, many tiles will have links to other areas of the Instructor Module, including Reports, Class Summary, and the ALEKS Gradebook, to name a few.

You can return to the Dashboard for the level currently selected at any time by clicking the **Dashboard Button** to the left of the sub-navigation.

7.1.5 Home Button

The Home button, located to the left of the main navigation windows, can be used at any time to return to the home screen for the currently active account.

7.2 Instructor Account

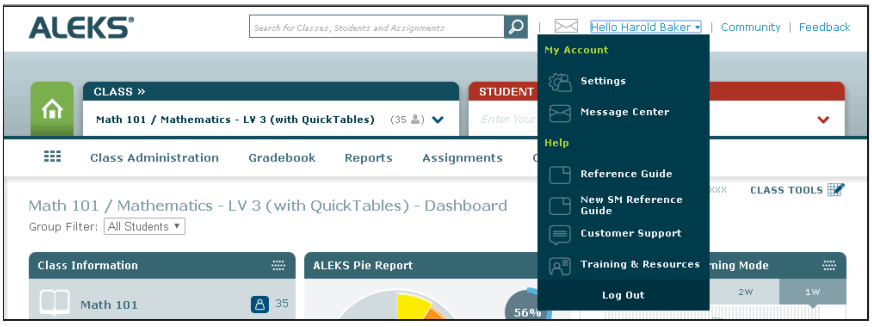


Figure 7.6: Account Drop-Down Menu

Account settings and helpful resources can be found in the Instructor account drop-down menu by clicking on your name in the upper right corner of the Instructor Module home page (Fig. 7.6). Details for each option are given below.

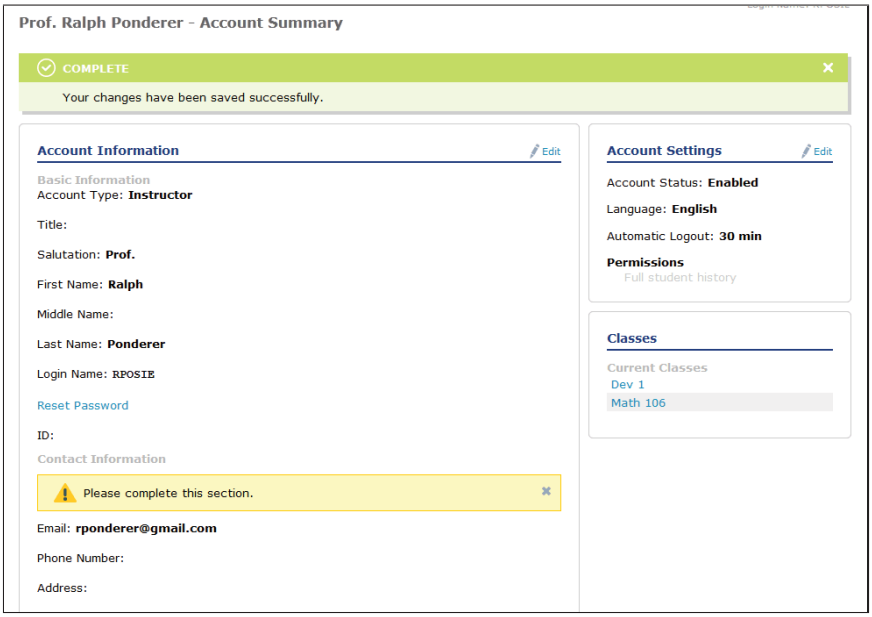


Figure 7.7: Account Summary

7.2.1 Account Settings

The **Account Summary** page contains your account settings, contact information, and email preferences (Fig. 7.7). You can access this screen by selecting **Settings** from the account drop-down, or by clicking **Account Summary** under Instructor Administration on the main page

7.2.2 Message Center

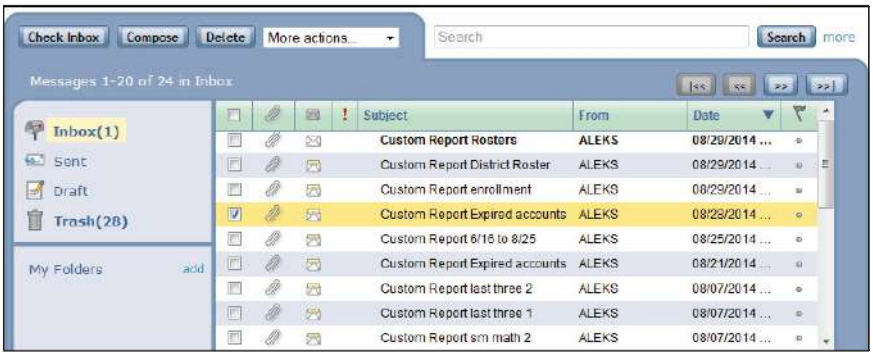


Figure 7.8: Message Center

The **ALEKS Message Center** is where messages can be sent from instructor to

student and to ALEKS Customer Support (Fig. 7.8). This is also where you will find messages sent to you by your students. The message center can be accessed by clicking on the envelope icon next to the search box, or by selecting Message Center from the instructor account drop-down menu.

The Message Center resembles an email program in most of its features, although the exchange of messages takes place within the ALEKS system. Also, the Message Center is equipped with special symbols and tools appropriate to communication about subject matter used in ALEKS.

The Message Center contains a full range of tools for using mathematical symbolism, constructions, and expressions in your messages. The tools are like those used in ALEKS itself in the Answer Editor. Moreover, students sending you messages in the Message Center can attach a graphic representation of the problem they are currently working on, to facilitate discussion of mathematical questions.

To compose a new message, click on the **Compose** button. After clicking on the appropriate "To:," "Cc:," or "Bcc:" button, use the expandable folder list to select the recipient(s) of the message. As with traditional email programs, messages can be saved as drafts for later editing, they can be marked as urgent, and attachments can be included (up to 2 MB in size).

To check for new messages received while the ALEKS Message Center is open, you can click on the **Check Inbox** button to refresh the inbox.

7.2.3 Reference Guides

The following online documents are accessible directly from the ALEKS instructor and administrator account drop-down menu:

- **Reference Guide** is a summary of features of the Instructor Module.
- **Quick Start Guide** outlines the most important features and functions within ALEKS so instructors can easily began working in ALEKS.
- **New SM Reference Guide** provides an overview of the new Student Module and its features.

7.2.4 Customer Support

Clicking on **Customer Support** in the instructor or administrator account drop-down menu opens an ALEKS customer support form.

7.2.5 Training & Resources

Training & Resources in the instructor or administrator account drop-down menu opens a window to the Training and Resources section on the ALEKS website. You can schedule a training session with an ALEKS specialist, register for an upcoming ALEKS overview session, and view On-demand videos of popular ALEKS features and tasks.

7.2.6 Log Out

To end your ALEKS session, select **Log Out** from the account drop-down, or simply close your browser window.

7.2.7 Community

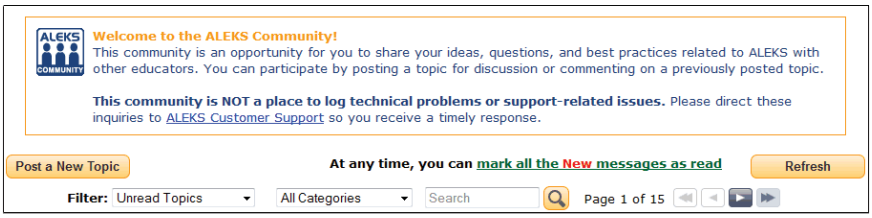


Figure 7.9: ALEKS Community

The **ALEKS Community** is an online community where instructors can share ideas and discuss best practices with ALEKS colleagues (Fig. 7.9). All ALEKS educators are members of the ALEKS Community and can post new topics or comment on existing discussions.

7.2.8 Feedback

Feedback allows you to send feedback to ALEKS regarding the Instructor Module.

7.2.9 Student Roster (Instructor Level)

From the **Instructor Administration**, instructors can access the ALEKS Student Roster for all students that are registered in classes under their account (Fig. 7.10).

Instructors can use the following filters to display various groups of students:

Active
All students currently in the class are tagged as active and displayed by default.

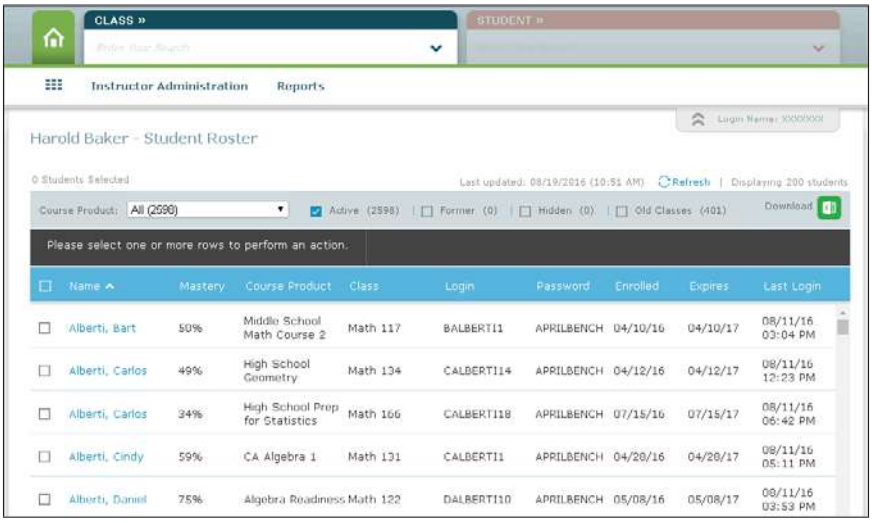


Figure 7.10: Student Roster (Instructor Level)

Former

Students are tagged with this status when they were in this class and have moved out of the class into another class, but their records still appear in this class.

Hidden

These students are hidden from reports and drop-down menus.

Old Classes (available only at Instructor level)

Students who were in a class that is inactive or archived.

The default roster settings will display information for Active students. Instructors can use the Class Roster to view students information in a selected class (Sec. 7.4.36). ALEKS administrators have access to the institution Student Roster to view all students registered at the school (Sec. 7.9.11).

7.3 Reports

The Report menu displays the ALEKS reports that are available for the current class. Each report is represented by an icon (Fig. 7.11). Instructors can access the Reports by selecting a class and clicking on the desired report in the **Reports** menu.

7.3.1 Available Reports

ALEKS offers a wide range of dynamic, automated reports that display individual student and class data. Instructors can use these reports to track usage, progress, grading, and attendance. The reports are organized by the following report types:

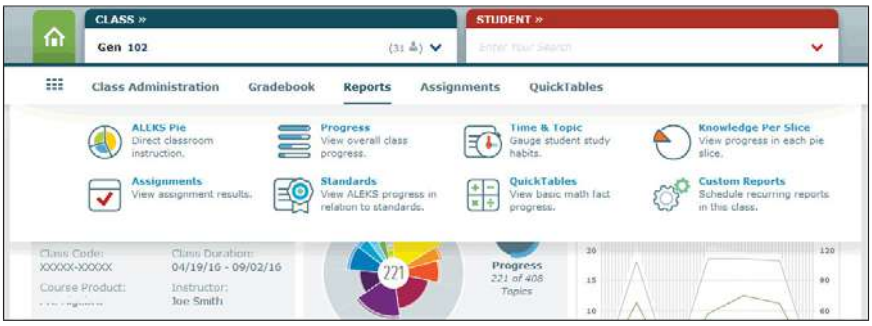


Figure 7.11: Reporting

- ALEKS Pie (Sec. 7.3.6)
- Progress (Sec. 7.3.12)
- Time and Topic (Sec. 7.3.19)
- Knowledge Per Slice (Sec. 7.3.22)
- Assignments (Sec. 7.3.23)
- State Standards (Sec. 7.3.26)
- QuickTables (Sec. 7.3.28)
- Custom Reports (Sec. 7.3.29)

NOTE. The report icons will not appear on the Reports menu when they are not applicable to the class.

To run a class report, select the **Class** from the dropdown list. To run an individual student report after selecting a **Class**, select a student, then select the desired report from the Reports menu.

7.3.2 Download Report Data

Reporting data can be printed or downloaded from any of the report styles. Use the printing options in your browser. To download a report, use the link marked **Download Excel Spreadsheet** on the upper right side of the report. Or, locate **Download**, click on the down arrow, and then select **XLS**.

7.3.3 Send Message to Selected Students

Instructors can send messages to selected students from within most class reports, the class roster, and the Gradebook as follows:

- To select specific students, click on the numbered icon or checkbox next to students' names. The icons will change from grey to yellow, while the checkbox will contain a mark. Re-clicking on the icon or checkbox will deselect the student.

- By clicking on **All** or the checkbox next to **Name**, instructors can select all students in the list.
- Clicking on the **Send Message to Selected Students** link or **Send Msg** icon opens a message in the ALEKS Inbox. The students' names will be pre-filled in the "Bcc" field of the email message (thus recipients of a group message do not know who the other recipients are).

7.3.4 Viewing Student History Across Multiple ALEKS classes

This feature allows administrators and instructors to view student history across multiple ALEKS classes. The comprehensive view can be used to identify each student's progress history and preserve a record of their work after they have been moved to a new ALEKS class. This feature can be found in the following reports:

- ALEKS Pie Report for a Single Student (Progress Monitoring) (Sec. 7.3.10)
- Progress Report for the Class (Detailed Progress History) (Sec. 7.3.17)
- Progress Report for a Single Student (Sec. 7.3.18)

NOTE. Depending on the options selected by the administrator at the school, instructors are able to see report history only for the classes they have taught or for all classes taken by the student (Sec. 7.9.1). Administrators can see all report history for all students. This feature will display student history from August 1, 2012 through the present; performance prior to this date may appear as a grey bar.

7.3.5 Interpreting Bar Graphs

Bar graphs appear in several of the ALEKS report styles. Although the meanings of the bar graphs vary by report style, there are some common features.

Bar Graph Colors

The colors used to fill the bar indicate the level of mastery of the class contents at a particular time. The bar is filled from left to right.

Blue
Means that mastery was shown on a knowledge check.

Light Blue
Means that tentative mastery was achieved in Learning Mode.

Grey
Indicates the part of the course material not mastered.

Blank (white)
Indicates a knowledge check is in progress.

Aquamarine
Shows progress made between the first and latest knowledge check.

Asterisk

Appearing by a greyed-out bar graph or any other color indicates, in some reports, that a new knowledge check is underway.

Values underneath Bar Graphs

Underneath the bar are percentages corresponding to the like-colored portion of the bar graph; for example, a "25%" in blue under the bar graph indicates that the blue portion of the bar is 25% of its total length. You can also view student progress by the number of topics. Simply click on the **Percent** or **Topics** link in the Course Progress column to toggle between the two views.

Multiple Bar Graphs

Where there is more than one bar graph per student, the bar graphs represent different points in the student's learning history associated with knowledge checks taken by the student. Bar graphs showing a segment of the student's learning history are stacked, with the earliest on the bottom and the most recent at the top.

More Features

There are several ways of accessing student data using reports:

- The list of students in a bar-graph report can be sorted on any of the report columns by clicking on the text in the header for that column. Clicking on the text in the header section of the column will bring up an ascending or descending arrow, used to sort the column.
- You can also navigate to other kinds of reports by clicking on hyperlinked names or dates. Clicking on a student's name takes you to the detailed learning history for that student (Sec. 7.3.18).
- Clicking on the date for a knowledge check takes you to a detailed (pie chart) report for that knowledge check (Sec. 7.3.8).

NOTE. On some reports, if students have previously been in a different class, it is possible to toggle between viewing their total time in ALEKS and their total time in the current class. This toggle will appear below the report. For students who have only been in one ALEKS class, the displayed time will be the total time in the current class.

7.3.6 ALEKS Pie

The class report shows the average learning for the class and a detailed view of topic mastery (Fig. 7.12).

This report only includes results for students who have completed at least an Initial Knowledge Check. The ALEKS Pie Mastery for all students in the class and the number of topics completed are initially displayed in the top right.

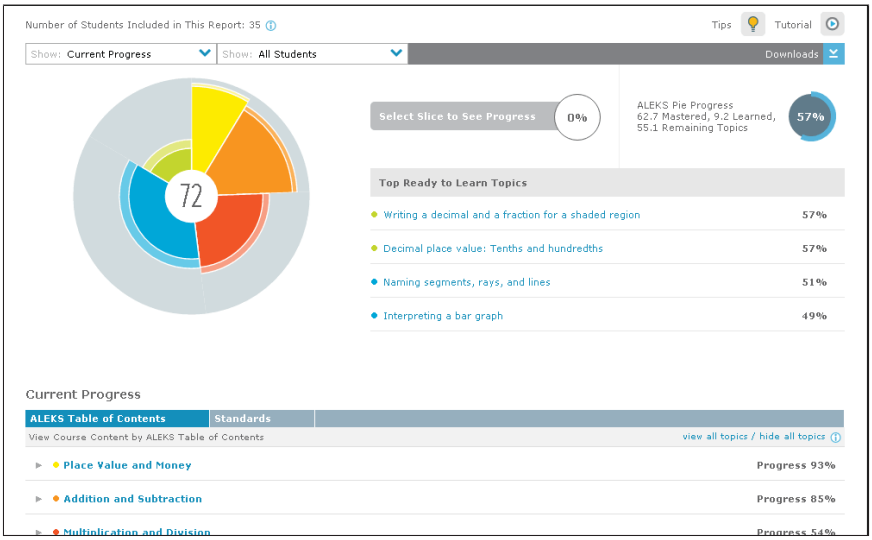


Figure 7.12: ALEKS Pie

Instructors can use this report to determine where students are in the class, specifically, what topics they have mastered, have not mastered, are ready to learn, have lost in knowledge check, or have attempted but not mastered (Fig. 7.13). This information can be used to plan classroom instruction, group students based on their knowledge and level of readiness, and communicate directly with these groups.

7.3.7 Display Options for ALEKS Pie Report

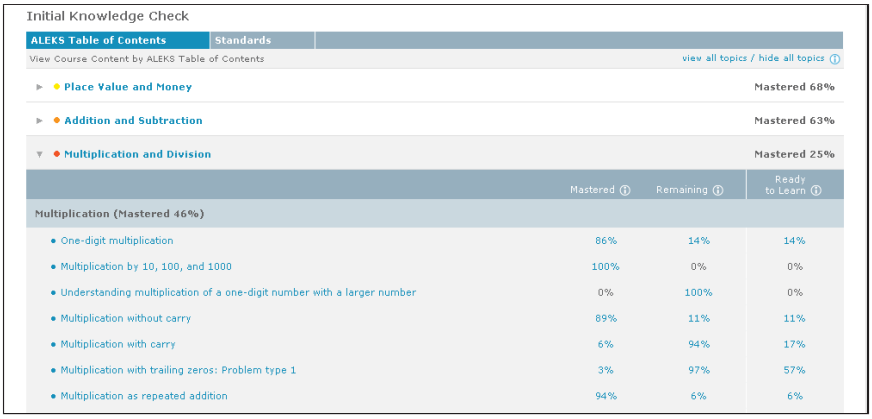


Figure 7.13: Student Mastery

Instructors can use the **Show** drop-down menu to filter the report by **Current Progress, Most Recent Knowledge Check,** or **Initial Knowledge Check.**

- In the **Current Progress** view, the main Ready to Learn Topics for the entire pie are listed to the right of the pie.
- In the **Most Recent Knowledge Check** view, the main Topics Lost in Recent Knowledge Check for the entire pie are listed. This shows data based on the most recent knowledge check results.
- In the **Initial Knowledge Check** view, the main Topics Mastered in Initial Knowledge Check for the entire pie are listed.

These views of student results may be filtered by slice, by selecting a slice from the pie. Clicking on a pie slice will make that slice "sticky," so that the topics for this slice are displayed and do not change. The average class mastery for this slice is also displayed. Hovering over a slice with the mouse will display the name of that slice.

Topics with the highest numbers of students **Ready To Learn** are the ones most ready for classroom presentation. Trying to teach topics with low numbers in this display is more likely to produce boredom and frustration, because most students either have learned the topics already or are not yet ready to learn them.

Below the pie the results are broken down further by ALEKS Table of Contents (slice), objectives (when in use), or by any applicable standards. These sections can be broken down further, and instances of problems may be seen by clicking on individual topic links. A new instance of the problem type will be generated each time you click on the topic link.

The columns in this report have different meanings, depending on the current view:

Under **Current Progress**, you see:

Mastered
: These are topics added to the pie after knowledge check in learning mode.

Remaining
: These are topics the students have not shown mastery of, whether they have attempted them or not.

Ready to Learn
: This is a subset of the not mastered category, and are the topics the students are ready to learn now.

Attempted, not mastered
: This is a subset of the Remaining category, and are the topics the students have attempted but not mastered.

Under **Most Recent Knowledge Check**, you see:

Mastered
: These are the topics known based on the most recent knowledge check.

Remaining

These are the topics the students do not know, based on the most recent knowledge check.

Ready to Learn

This is a subset of the not mastered category, and are the topics the students are ready to learn now, based on the most recent knowledge check.

Lost in Recent Knowledge Check

These are topics the students knew at one point but have lost, because the most recent knowledge check determined that the students did not know the topic anymore.

Under **Initial Knowledge Check**, you see:

Mastered

These are the topics known based on the Initial Knowledge Check.

Remaining

These are the topics the students do not know, based on the Initial Knowledge Check.

Ready to Learn

This is what the students are ready to learn now, based on the Initial Knowledge Check.

Other features:

- If you click on the percent link for a topic, you will see a breakdown of student mastery of that topic.
- You can send messages to students directly from this report.
- You can view additional topics that a group of students is ready to learn.
- The objectives tab (when present), will contain prerequisite topics if the TREC tool added items to the class (Sec. 7.4.9).

Excel downloads. Students who have not taken an Initial Knowledge Check will not be shown in this report, but they will be shown in the Excel spreadsheets. Spreadsheets available to download include the following: Pie View, Pie and Slice View, Topic Summary by Slice, Objective View, and Topic Summary by Objective. Please note that the latter two spreadsheets are only available if objectives are set up in the class.

7.3.8 ALEKS Pie Report for a Single Student

This report displays a pie chart for a single student, which by default will represent the most recent period of Knowledge Check and Learning (Fig. 7.14). Reports for other

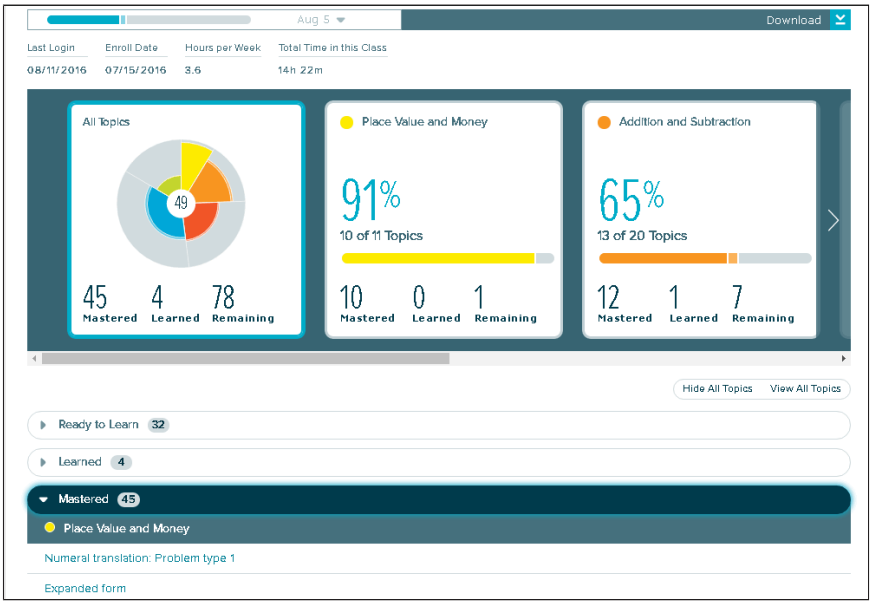


Figure 7.14: ALEKS Pie Report for a Single Student

periods may be chosen by selecting dates from the drop-down menu at the top of the page The report will show the results of the most recent Knowledge Check, along with any progress made in Learning subsequent to that Knowledge Check.

The shading on the pie chart indicates the level of the student's mastery in each area: the shaded portion represents what the student has mastered, and the unshaded portion represents what the student has yet to learn. To the right of the pie chart are tiles for each individual pie slice, showing a breakdown of what material the student has mastered, learned, and has left to learn. To see a complete list of the topics in each category, click on the **View All Topics** toggle below the tiles. The list will update based on which tile the user has selected. Click on a topic to generate a unique instance of the problem and an explanation of the instance. These sample problems can be printed for use in the student's portfolio.

In addition to representing the student's individual learning path through the class, the information in this report can be used to create and maintain comprehensive Individualized Education Plans (IEPs) and guide effective one-on-one instruction. See the next section for details of how to use the condensed format of this report to view key student data and how to print copies of the report for inclusion in student portfolios.

7.3.9 Supporting Individualized Education Plans (IEPs)

The **ALEKS Pie Report** for a single student provides progress data for an individual student and serves as support for an Individual Education Plan (IEP). The tools

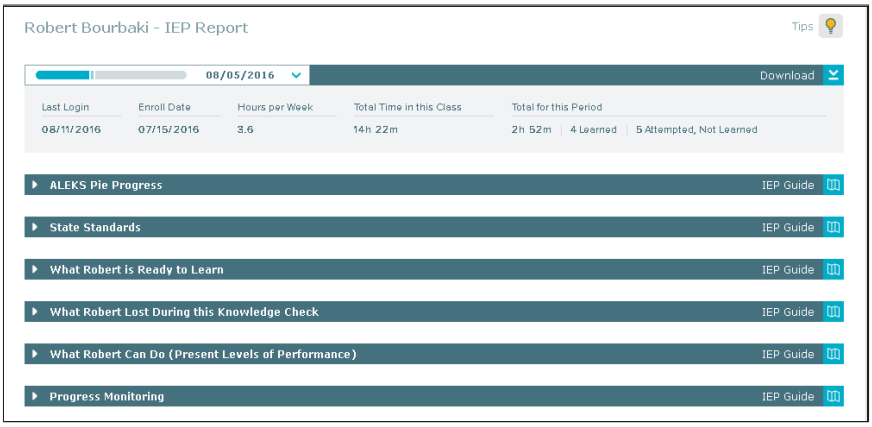


Figure 7.15: Supporting Individualized Education Plans

included in this report to support IEPs are the following (Fig. 7.15):

Standards

Instructors can quickly determine how a student is progressing relative to the State or Common Core State Standards. Click on the **Standards Report** link; a new window will open with a detailed breakdown of the student's progress against the standards. Expand the **Details** section for any Standard to see which topics the student has mastered and not mastered; of the topics not mastered, topics that the student is ready to learn are highlighted in yellow with the notation **(RL).**

Ready to Learn next

Expand this section to see topics the student is ready to learn next. Instructors can use the student's list of topics ready to learn, as well as what the student has attempted but not mastered, to optimize one-on-one instruction.

What the student can do (Present Levels of Performance)

Expand this section to see topics the student has mastered up to a certain date; the time frame can be changed by selecting a different end-point from the drop-down menu at the top of the report.

7.3.10 Progress Monitoring

This section includes three components that provide a detailed overview of the student's progress in ALEKS (Fig. 7.16).

Time and Topic

This section dynamically tracks the student's daily learning progress and time spent in the program. Click on the link to open a new window with a detailed Time and Topic Report for this student. Instructors can use this report to determine whether the student is making adequate progress for the time they are spending

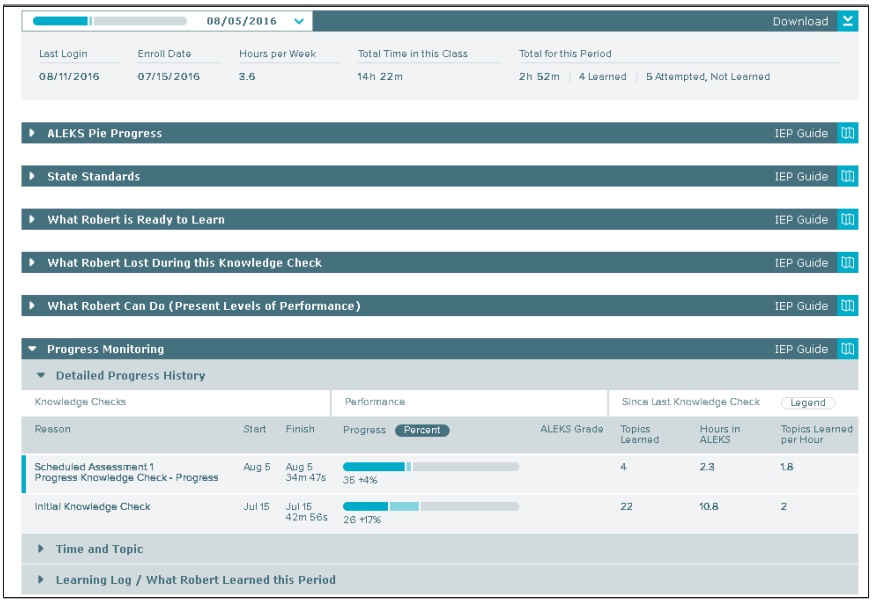


Figure 7.16: Progress Monitoring

in ALEKS and exactly which topics they have attempted, but not yet mastered. To see the student's Learning Sequence Log for a certain date, click on the date link. Here, the time and result of the student's work on each topic can be seen. By clicking on the **Result** link (Wrong, Correct, or Added to Pie), it is possible to see the specific problem the student worked on, along with their answer and the solution. Instructors can also use this report to ensure that students are meeting their weekly time requirement for ALEKS (Sec. 7.3.21).

Detailed Progress History

This section contains the student's progress for the current class. The knowledge check currently being viewed is indicated with an orange dot (Fig. 7.16). To view the student's progress in other classes, the instructor can click on the **View** link under **Previous Results** (if applicable). Student progress history can also be viewed on a student's pie report by clicking on any knowledge check date link from a current or previous class (Sec. 7.3.4).

Learning Log/Recent Student Learning (Learning Reports only)

This section highlights what the student has recently worked on in Learning Mode. Instructors can use this information to review topics the student has recently learned.

7.3.11 Objective Report

The Objective Report is a scrollable list of tiles for each objective in the course (Fig. 7.17). Each tile summarizes the student's progress for a particular objective at the time the

Figure 7.17: Objective Report

report is generated. The tiles display the due date of the objective (future objectives) or the date the student completed the objective (past objectives), the score achieved, the number of items making up the objective, and the number of goal topics remaining.

Beneath the tiles are expandable lists of topics, broken down by category: Ready to Learn, Learned, Mastered, and Locked. ("Locked" topics are those for which the student has prerequisite topics left to complete.) To see a full list of topics, click on the **View All Topics** toggle. Double-click on a topic to see a sample question and corresponding explanation.

7.3.12 Progress Reports

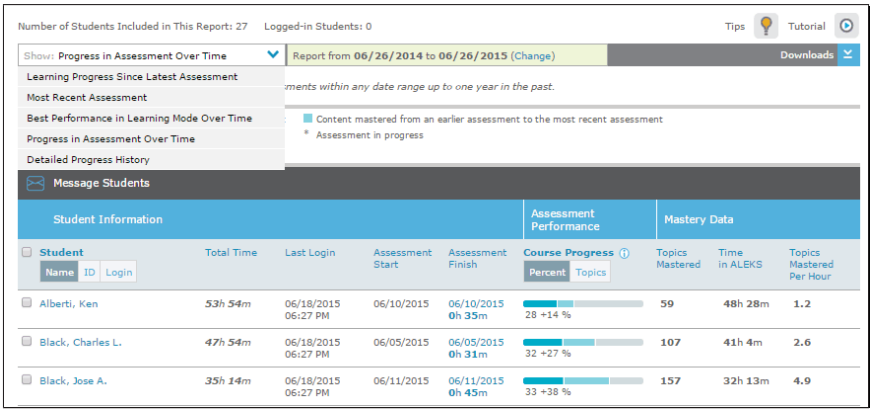


Figure 7.18: Progress Reports

Using the Progress Reports, instructors can view student progress on knowledge checks and in Learning Mode at various time intervals (Fig. 7.18). These reports allow instructors to track student progress and ensure students can get intervention when they need it the most. Instructors can change the report view by making a selection in the **Show** drop-down menu. A description of the report selected will be displayed below the drop-down menu.

In class-level Progress reports, clicking on a student's name will take the instructor to the individual progress report for the student (Sec. 7.3.18). Clicking on an knowledge check date link will take the instructor to the individual student's pie report, displaying the student's progress at that point in time (Sec. 7.3.8).

NOTE. If you navigate away from a Progress report and return at a later time, the report that was last selected will remain in effect.

7.3.13 Learning Progress Since Latest Knowledge Check

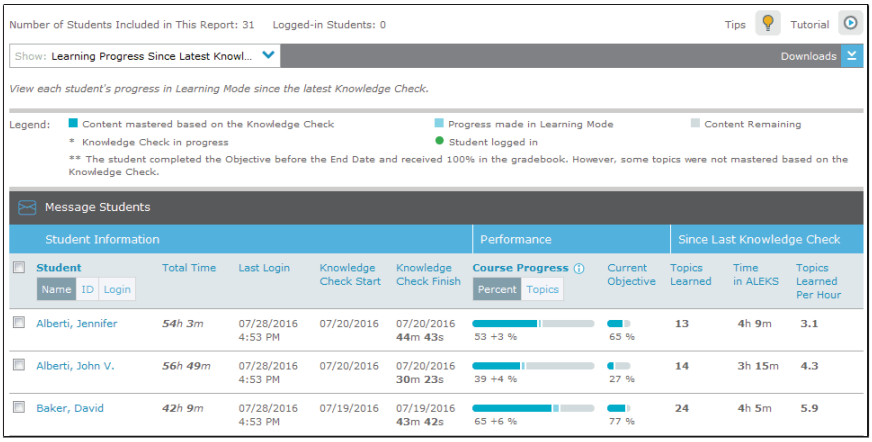


Figure 7.19: Learning Progress Since Latest Knowledge Check

This report shows each student's progress in Learning Mode since the most recent knowledge check (Fig. 7.19). It includes total hours spent in ALEKS, the last login date, the last knowledge check start and end date, total time in knowledge check, course performance displayed in a bar graph, and learning rates. There are several ways this report can be used:

- Identify which students are ahead, on pace, or behind in the class.
- Determine learning rates to use in assigning performance grades or for data tracking purposes.
- Recognize inconsistencies in student usage and progress to identify students needing individual instruction.

NOTE. If objectives are used in the class, the percentage of completion for the current objective is also displayed. For additional information on the interpretation of the bar graphs, see Sec. 7.3.5.

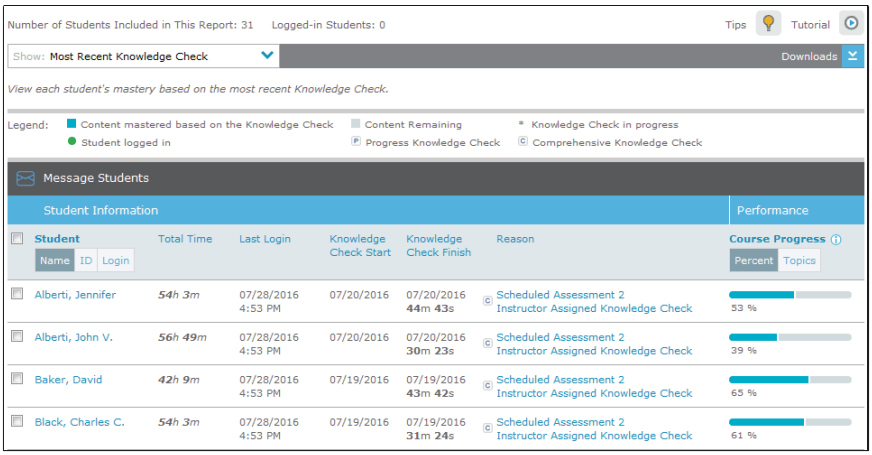


Figure 7.20: Most Recent Knowledge Check

7.3.14 Most Recent Knowledge Check

This report can be used to view each student's mastery based on the most recent knowledge check taken (Fig. 7.20).

7.3.15 Best Performance in Learning Mode Over Time

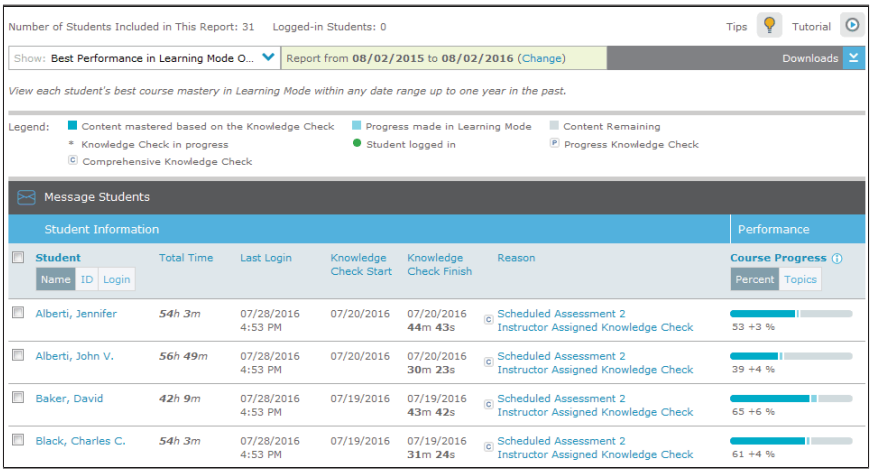


Figure 7.21: Best Performance in Learning Mode Over Time

This report can be used to view each student's best class mastery in Learning Mode within any date range up to one year in the past (Fig. 7.21). Set the date range using the **Change** link, then click **Apply**.

7.3.16 Progress in Knowledge Check Over Time

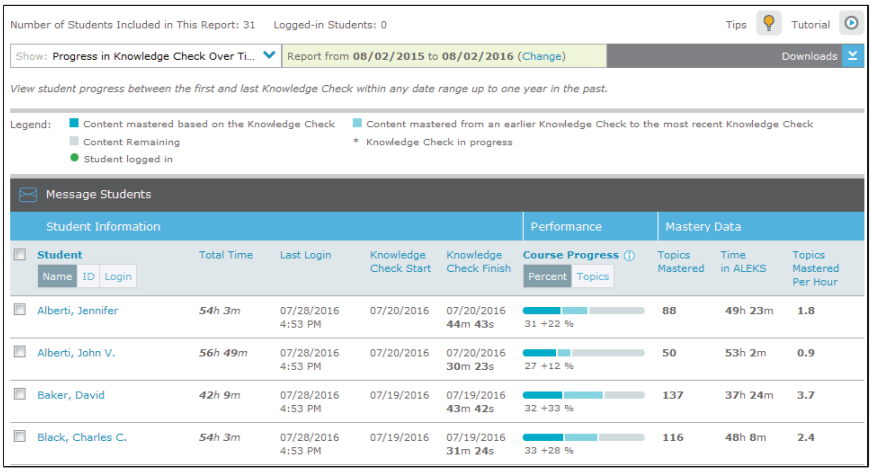


Figure 7.22: Progress in Knowledge Check Over Time

This report can be used to view each student's progress between the first and last knowledge checks within any date range up to one year in the past (Fig. 7.22). Set the date range using the **Change** link, then click **Apply**.

7.3.17 Detailed Progress History

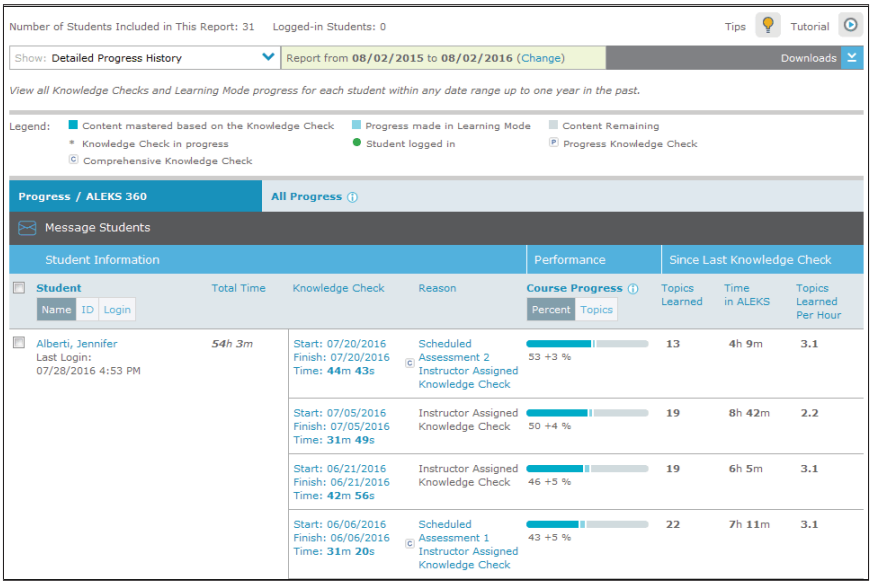


Figure 7.23: Detailed Progress History

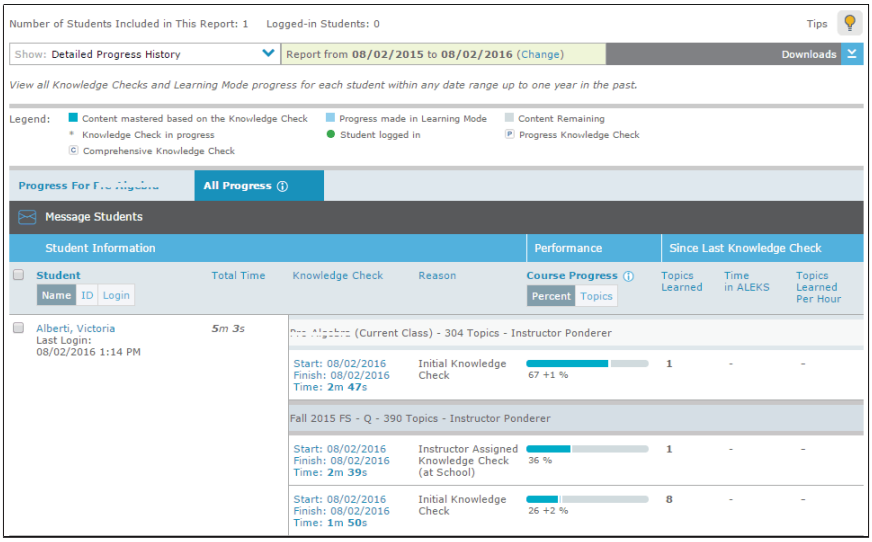


Figure 7.24: Progress History

This report is an expanded version of **Learning Progress Since Latest Knowledge Check** (Fig. 7.23). It shows a segment of the student's learning history, including knowledge checks and Learning Mode progress for each student within the specified date range. Set the date range using the **Change** link, then click **Apply**. Clicking on the **All Progress** tab will display all students' current and previous class progress results (if applicable) (Fig. 7.24). The current class can be distinguished by the **(Current Class)** label.

- Each bar graph represents an knowledge check taken by the student.
- The bar graphs are stacked, the earliest on the bottom and the most recent at the top.
- The date and reason for the knowledge check are to the left of each bar graph.

7.3.18 Progress Report for a Single Student

This report is obtained by selecting a student and then moving to the the **Reports** menu. Click on the **Progress** icon. The Progress Report for a single student in this class displays a list of bar graphs for the single student chosen (Fig. 7.25). There is one row for each knowledge check that the student has taken, with dates (linked to the Report page for that knowledge check). Clicking on the **All Results** tab will display the student's current and previous class progress results (if applicable). Clicking on an knowledge check date link will take the instructor to the individual student's pie report, displaying the student's progress at that point in time (Sec. 7.3.8).

- The blue portion of each bar graph measures the student's mastery as of the given knowledge check.

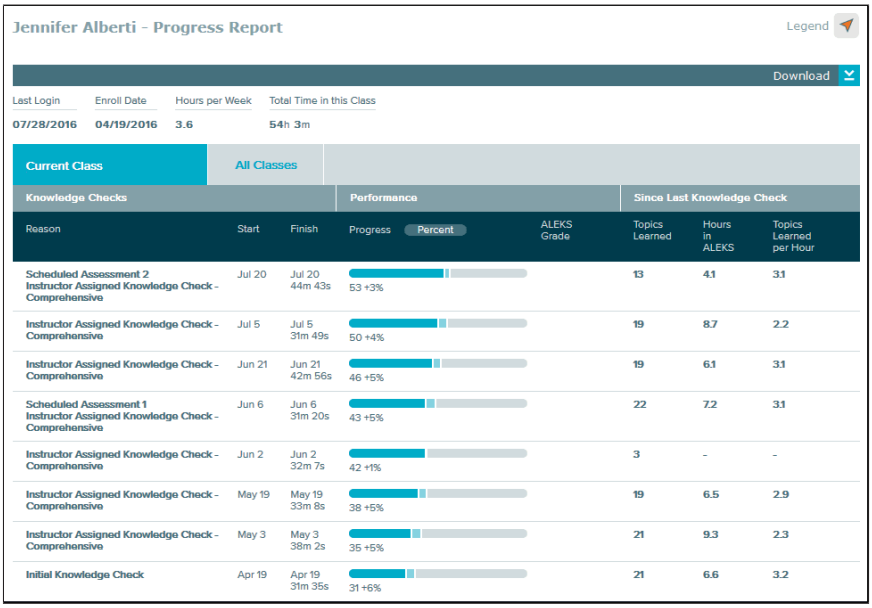


Figure 7.25: Progress Report for a Single Student

- The light blue portion of the bar measures progress made in the Learning Mode subsequent to that knowledge check (but before the next knowledge check, if there is one).
- The percentage values beneath the bars for the blue and light blue portions represent the knowledge check mastery, and subsequent progress in Learning Mode respectively. For example, 57+9% means that the last knowledge check showed 57% mastery, and that subsequent work in the Learning Mode added another 9% mastery for a total of 66%.
- Information on each knowledge check and total hours spent subsequently in the Learning Mode (up to the time of the next knowledge check) is also provided, with average numbers of items gained per hour.

7.3.19 Time and Topic Report

Using this report, instructors can quickly view the summary graph at the top of the report. Instructors can also see the amount of time spent by each student daily in ALEKS, as well as the topics the student has attempted and mastered each day. The report can be generated for the entire class or for individual students. (The number of topics attempted does not include topics the student worked on in Review mode.)

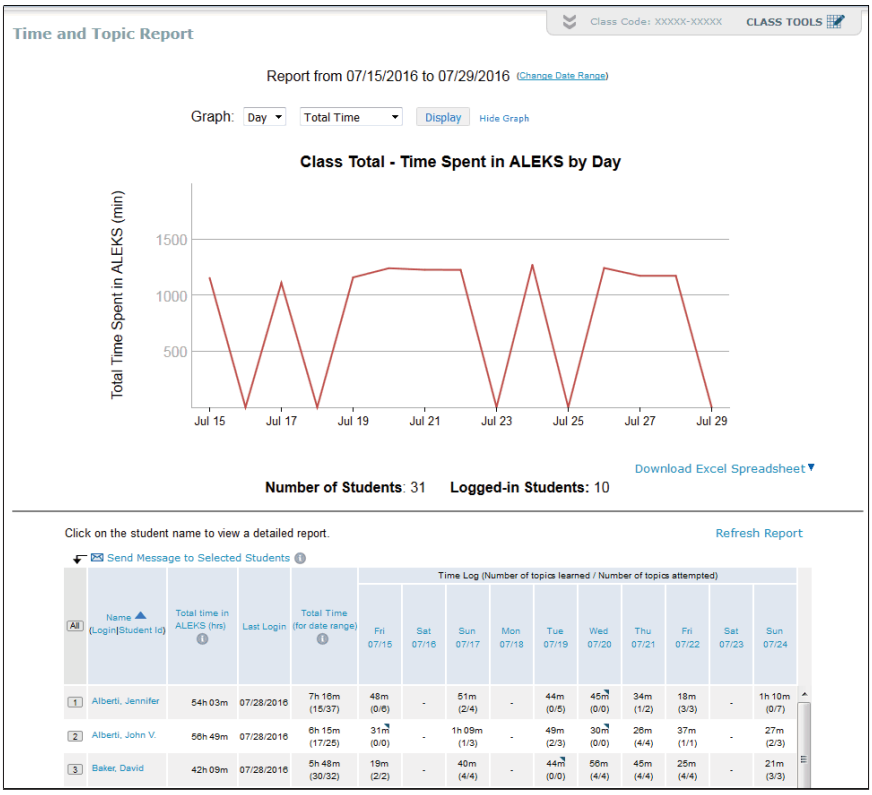


Figure 7.26: Class Time and Topic Report

7.3.20 Class Time and Topic Report

The following points describe the features of the class Time and Topic Report (Fig. 7.26):

- The report can be viewed in intervals ranging from 1 week up through 20 weeks. The time period can be adjusted by clicking on the **Change Date Range** link.
- The graph shows for each day the total time, average time, total topics, or average topics.
- The report displays the number of students enrolled in the class, the number of students logged in to ALEKS, and the amount of time each student has spent working in ALEKS on a daily basis.
- The number of topics mastered versus the number attempted is displayed below the daily time log.
- If a student has spent some time on an ALEKS knowledge check during that day, the session will be marked with a blue triangle in the upper right-hand corner.
- The total amount of time shown for a specific day includes time spent in Learning Mode, as well as any quizzes, homework, review problems, or knowledge check the student has done. Work done in QuickTables is not included in the report.

- Clicking on an individual student name will take you to the Individual Time and Topic report for that student (Sec. 7.3.21).

7.3.21 Individual Time and Topic Report

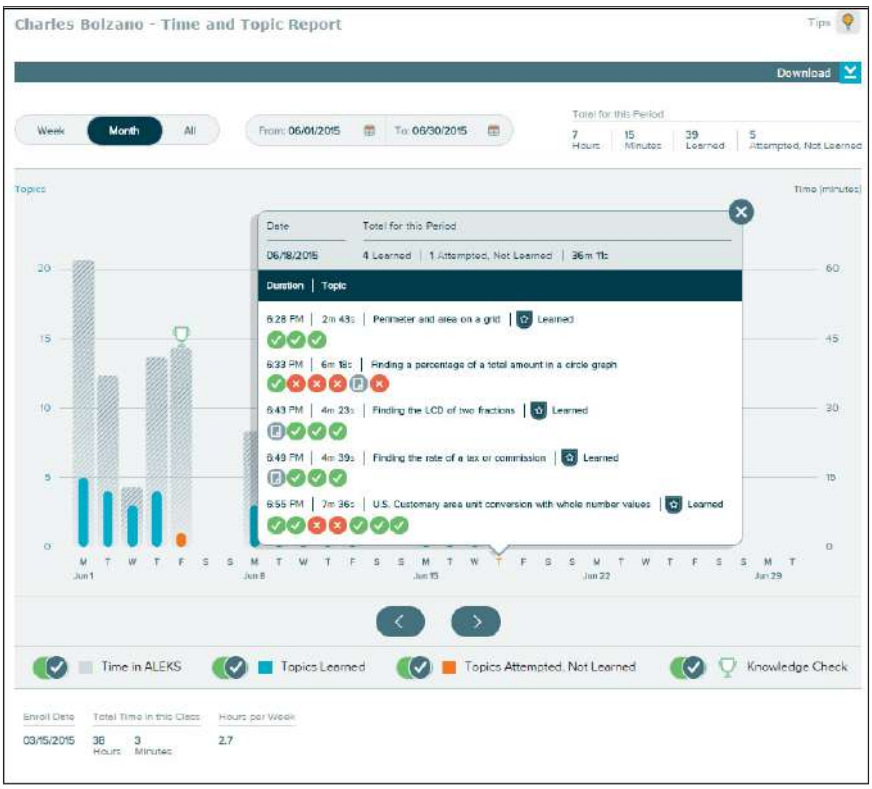


Figure 7.27: Individual Time and Topic Learning Log

The Individual Time and Topic report gives detailed information on the topics each student has attempted and mastered (Fig. 7.27). To see the student's Learning Sequence Log on a certain date, click on the grey column above the date. The Learning Sequence Log will display the time and result of the attempted topic. By clicking on the **Result** icon below the name of the topic (**Wrong, Correct**, or **Success**), you can see specific problem the student worked on, along with their answer and the solution.

A wider date range can be chosen for the individual report, up to six months at a time. This report also includes for the student, the last login date, the enrollment date, and hours worked per week.

Students can view their Time and Topic Report by clicking the **Report** link at the top of their page and selecting the appropriate tab.

7.3.22 Knowledge Per Slice

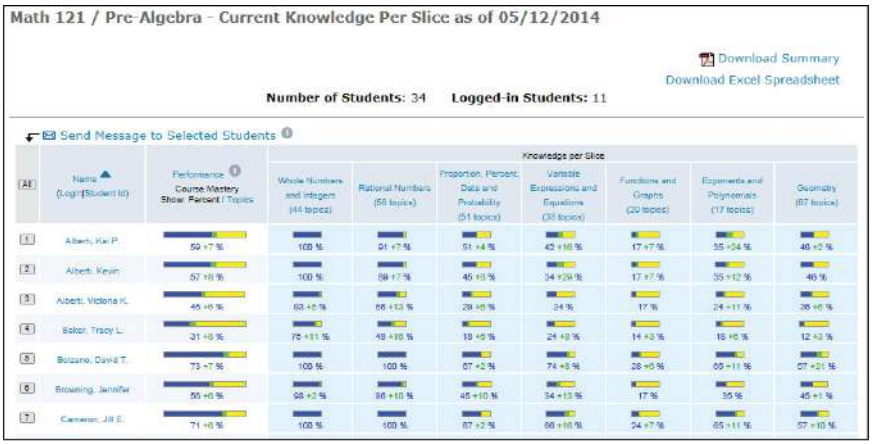


Figure 7.28: Knowledge Per Slice

This report shows each student's current mastery for each ALEKS pie slice in the class and can be generated for the entire class or for individual students (Fig. 7.28). It includes overall class mastery, followed by a breakdown of progress in each pie slice.

Instructors can use this report to determine whether more emphasis should be placed on certain areas of the class, or to compare overall progress in the class with progress in particular slices.

Instructors can download a PDF summary of data from the class report. Clicking the **Download Summary** link just above the report will generate a PDF that displays time spent in ALEKS, average topic mastery, and a comparison between the beginning knowledge state (based on the Initial Knowledge Check) and the current knowledge state for each pie slice. The report shows this data for both the class and individual student.

7.3.23 Assignment Reports

With the class selected, go to the Reports menu. Clicking on the **Assignments** icon will display a list of all assignments included in the currently selected class (Fig. 7.29). The **Show** drop-down menu can be used to filter the assignments by Homework, Quiz, Test, or Knowledge Check. Clicking on an assignment name will show the detailed class results for that assignment.

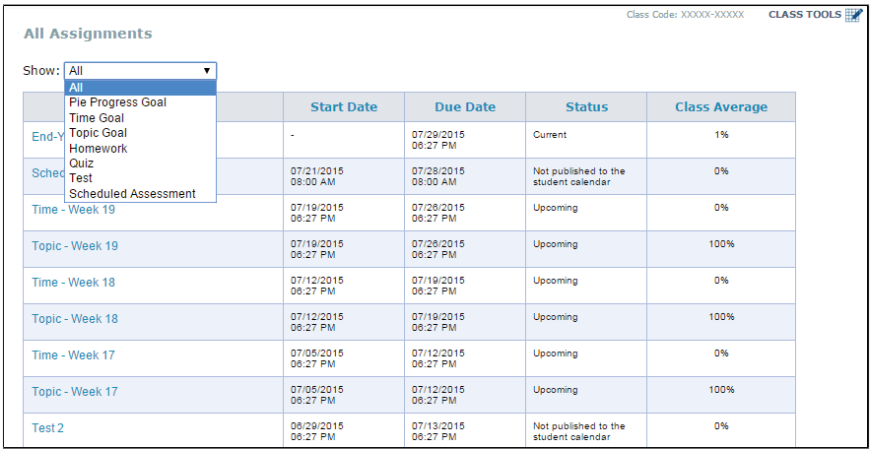


Figure 7.29: All Assignment Reports

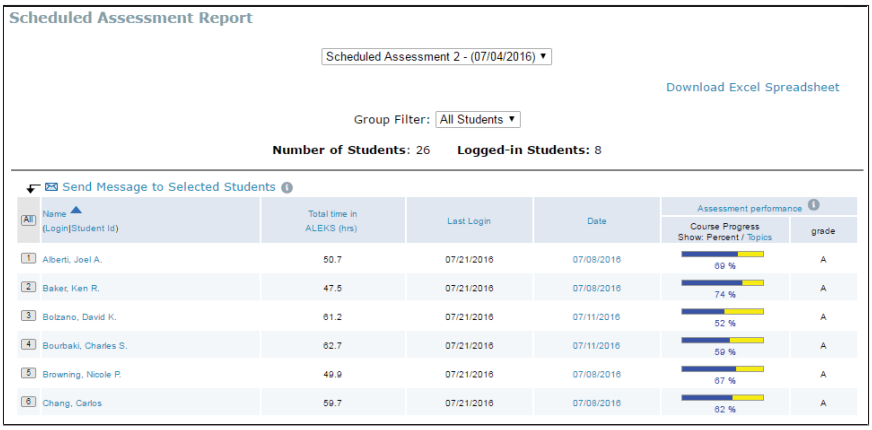


Figure 7.30: Scheduled Assessment Report

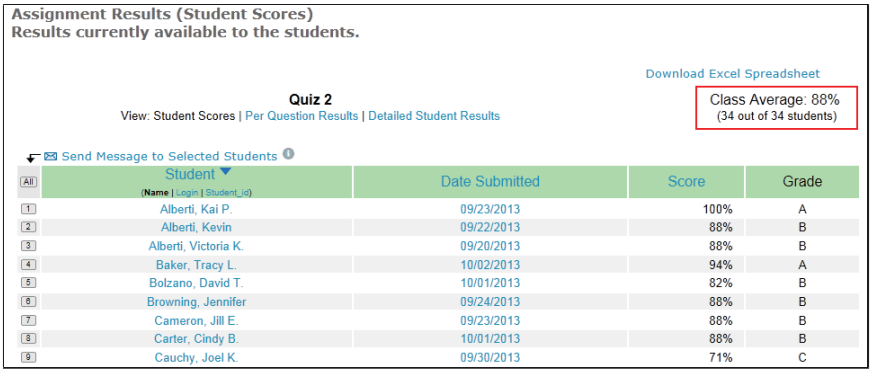
7.3.24 Scheduled Knowledge Check Report

This report shows the results of the most recent assessment that has been scheduled for the class, in the form of a series of bar graphs (Fig. 7.30).

- A menu at the top of the display can be used to choose earlier scheduled assessments.
- The blue portion of each bar graph shows the student's knowledge as measured by the assessment.
- If the instructor has chosen to grade the assessment, grades for the assessment are shown (Sec. 7.5.9).

NOTE. Progress in Learning Mode is not shown in this view.

7.3.25 Homework, Quiz, and Test Results



Assignment Results (Student Scores)
Results currently available to the students.

Download Excel Spreadsheet

Quiz 2
View: Student Scores | Per Question Results | Detailed Student Results

Class Average: 88%
(34 out of 34 students)

Send Message to Selected Students

All	Student (Name | Login | Student_id)	Date Submitted	Score	Grade
1	Alberti, Kai P.	09/23/2013	100%	A
2	Alberti, Kevin	09/22/2013	88%	B
3	Alberti, Victoria K.	09/20/2013	88%	B
4	Baker, Tracy L.	10/02/2013	94%	A
5	Bolzano, David T.	10/01/2013	82%	B
6	Browning, Jennifer	09/24/2013	88%	B
7	Cameron, Jill E.	09/23/2013	88%	B
8	Carter, Cindy B.	10/01/2013	88%	B
9	Cauchy, Joel K.	09/30/2013	71%	C

Figure 7.31: Quiz Results

This report shows the results on any given quiz and can be generated for the class or for individual students (Fig. 7.31). Clicking on the **Date Submitted** for any particular quiz will give the individual results of that quiz by question. It is also possible to see individual questions and answers submitted by each student. The option to view quiz results on a per-question basis may be useful for identifying specific class strengths and weaknesses.

7.3.26 Class Standards Report

The Standards report analyzes the current progress of the class in terms of the strands and substrands of the applicable standards (Fig. 7.32). For each strand, a vertical bar graph at the top of the display shows the mastery of that strand as measured by ALEKS; the numbers beneath each bar indicate the proportion of substrands under that strand which have been satisfied by the students, according to the parameters set beneath the bars.

The options appearing beneath the bars enable the instructor to choose:

- What percentage of ALEKS items supporting a substrand must be completed by a student for the student to be considered as satisfying that substrand (50% by default, with options of 60% and 70%);
- How the students' mastery of items will be determined: by initial knowledge check, by most recent knowledge check, or by most recent work in the Learning Mode;
- Which students will be used to calculate levels of achievement: all students in the class, or students who have spent at least a certain amount of time (10, 20, 30, 40, or 60 hours) using their ALEKS accounts.

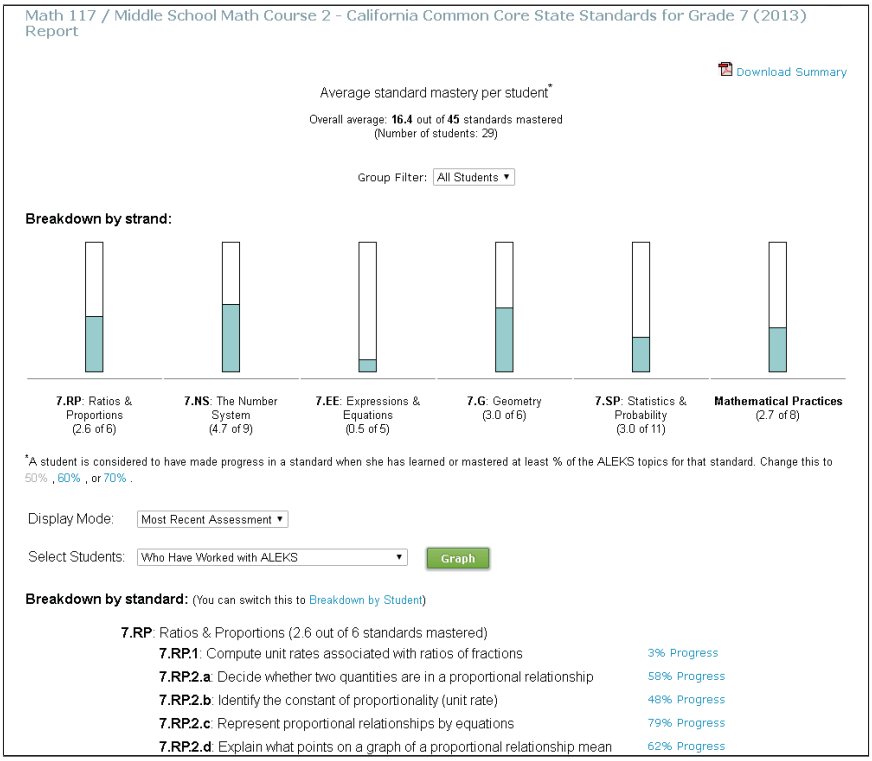


Figure 7.32: Standards Report

Further down the page, the display provides complete detail on standards-based achievement by the class. The teacher can choose to see this detail organized by student (which substrands have been mastered by each student) or by substrand (what the precise level of satisfaction is for each substrand, with lists of ALEKS items supporting the substrands and how many of them individual students have mastered).

NOTE. Satisfaction of a substrand is defined (by default) as 50% of the ALEKS topics supporting it. There is a great deal of overlap in the coverage of the substrands, and this setting provides a meaningful way to track the students' progress.

7.3.27 Individual Standards Report

The Standards report for a single student analyzes the student's current progress in terms of the substrands of the applicable standard (Fig. 7.33). For each substrand, the page indicates how many ALEKS items supporting that substrand have been mastered by the student, with detail available on the specific items mastered and not mastered.

7.3.28 QuickTables Reports

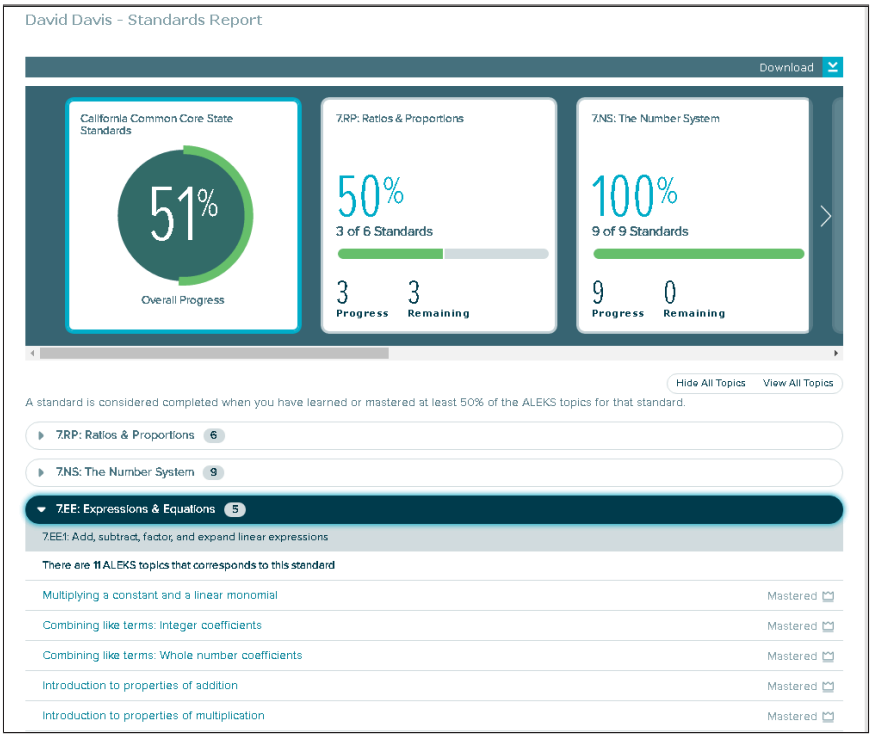


Figure 7.33: Standards Report for a Single Student

QuickTables reports can be generated for both the class and for individual students. These reports can also be accessed by clicking directly on the **QuickTables** menu. For a full description of the reports available for QuickTables, see Sec. 6.3.

7.3.29 Custom Reports

ALEKS administrators and instructors can create custom reports for their district, school, and classes with the Custom Reports feature. This feature has many options to suit advanced reporting needs across classes and instructors. Administrators and instructors can select data from existing ALEKS reports and export the combined data into a single customized Excel report. Additionally, reports can be scheduled ahead of time. Reports can be generated at multiple levels (e.g., district, school, instructor, class, and multi-class) based on the user's ALEKS account type. There are three main steps to creating a custom report: 1) Create Template, 2) Review and Save, and 3) Schedule Report. See below for further instruction.

NOTE. Data for the Custom Reports feature is available beginning from August 1, 2012.

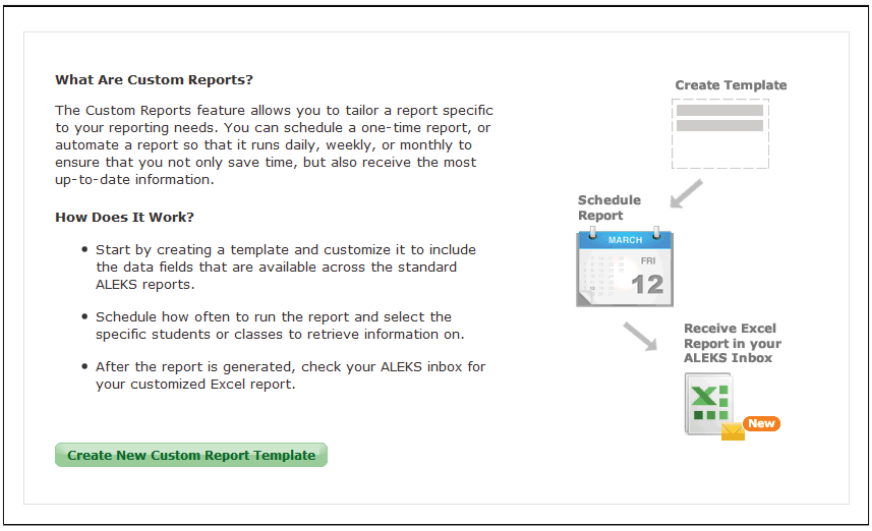


Figure 7.34: Custom Report Template

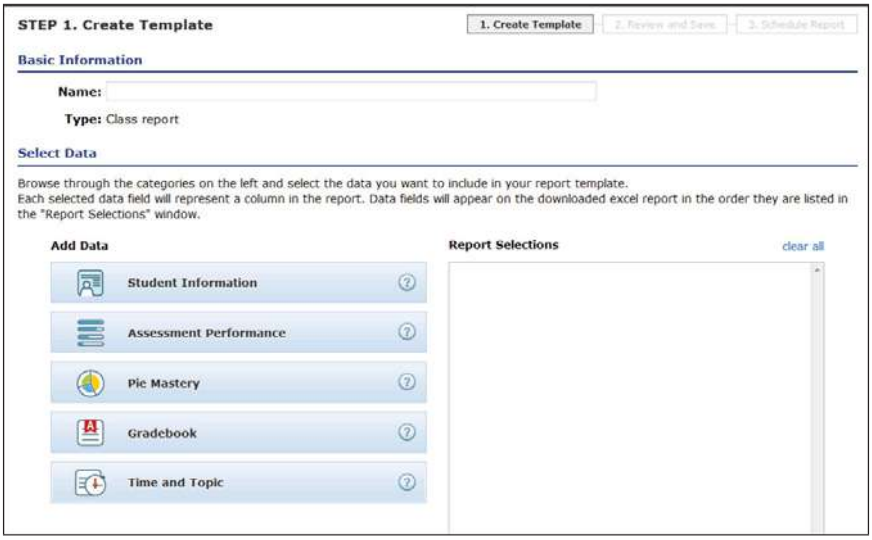


Figure 7.35: Creating the Custom Report Template

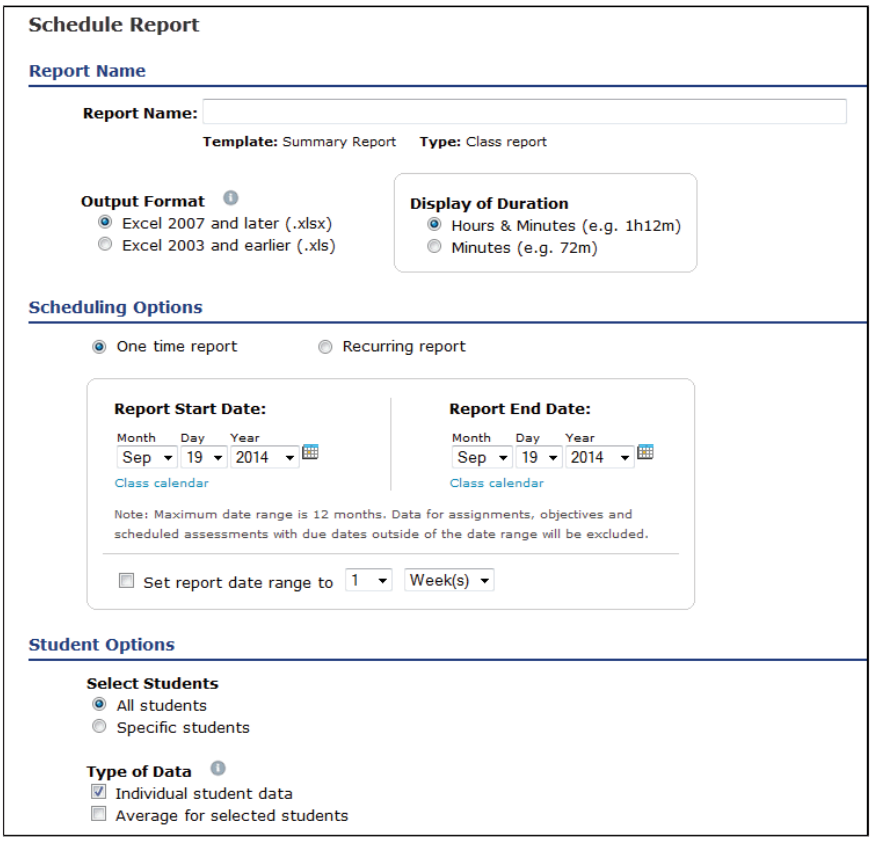


Figure 7.36: Scheduling a Custom Report

When first accessing the feature, administrators and instructors will see the introductory screen (Fig. 7.34). To begin creating the template, click on **Create New Custom Report Template** or the **+ New Report Template** on subsequent visits.

STEP 1: Create Template

By first creating a template, administrators and instructors can determine the foundation for their custom report, and then schedule multiple reports to run off the template. Templates can be re-used and duplicated to save time.

The following information must be selected when creating the template:

Basic Information

A name must be entered for the template.

Select Data

The data must be selected from the categories listed on the left of the screen (Fig. 7.35).

STEP 2: Review and Save

In this step, users will confirm and save their custom report parameters.

STEP 3: Schedule Report

Administrators and instructors can run multiple iterations of their template, modifying the date range and student/class/instructor data to focus on.

The following information must be selected when scheduling the report (Fig. 7.36):

Report Name

A name must be entered for the report, and choices made for the Excel format, and duration display.

Scheduling Options

You can choose whether to schedule a recurring report, or a one time report (the default).

Student Options

The options in this section are displayed based on the selected level of the report.

After a report has been scheduled, a confirmation message is displayed. A custom report may take up to 30-60 minutes to process depending on its size, and will be sent to the ALEKS inbox of the person who scheduled it.

7.4 Class Creation and Configuration (Class Administration)

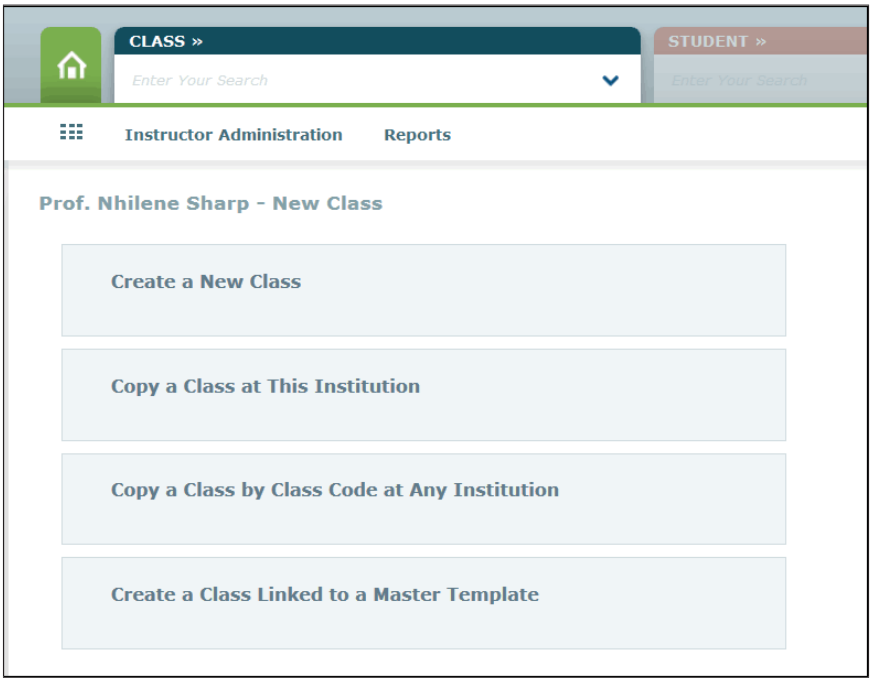


Figure 7.37: New Class

Classes can easily be created through the class creation wizard. From the Home page, select **Instructor Administration** then **New Class**. Alternatively, the instructor can choose a class then select **Class Administration** followed by **New Class**. There are various options for creating a class, as described below (Sec. 7.4.1).

The procedure for creating and editing a class includes the setup of Textbook Integration and content customization (if desired). It does not include creating Homework, Quizzes, Tests, or Scheduled Assessments, but these steps may be completed later.

7.4.1 Creating a Class

Selecting **New Class** displays the following options to create a class (Fig. 7.37):

Create a New Class
This option allows an entirely new class to be created.

Copy a Class at This Institution
This option allows the instructor to duplicate one of his or her own classes or a class from another instructor at the same institution.

Copy a Class by Class Code at Any Institution
This option allows an instructor to duplicate a class from another instructor at any institution (if the **Class Duplicate Setting**, for the class to be copied, has been set to **Public**).

Create a Class Linked to a Master Template
Master Templates must exist at this institution for this option to appear. This option enables a linked class to be created from a Master Template.

NOTE. ALEKS Administrators can duplicate any class.

7.4.2 Class Creation Wizard

Clicking on **Create a New Class** will display the class creation wizard (Fig. 7.38).

Class Information
Administrators can assign the class to another instructor when setting up the class. In the **Class Information** section the only optional field is the section name. The course product should not be changed after the class has begun unless absolutely necessary, as doing so will be disruptive to the students' learning and to the class reports and records. Other values on this page can usually be changed without disruption.

The class dates are used to configure the **Calendar**, and should include the entire period of time that the students will be using ALEKS (Sec. 7.4.41). By default, the class will be automatically archived after the class end date unless this option is deselected (Sec. 7.4.43).

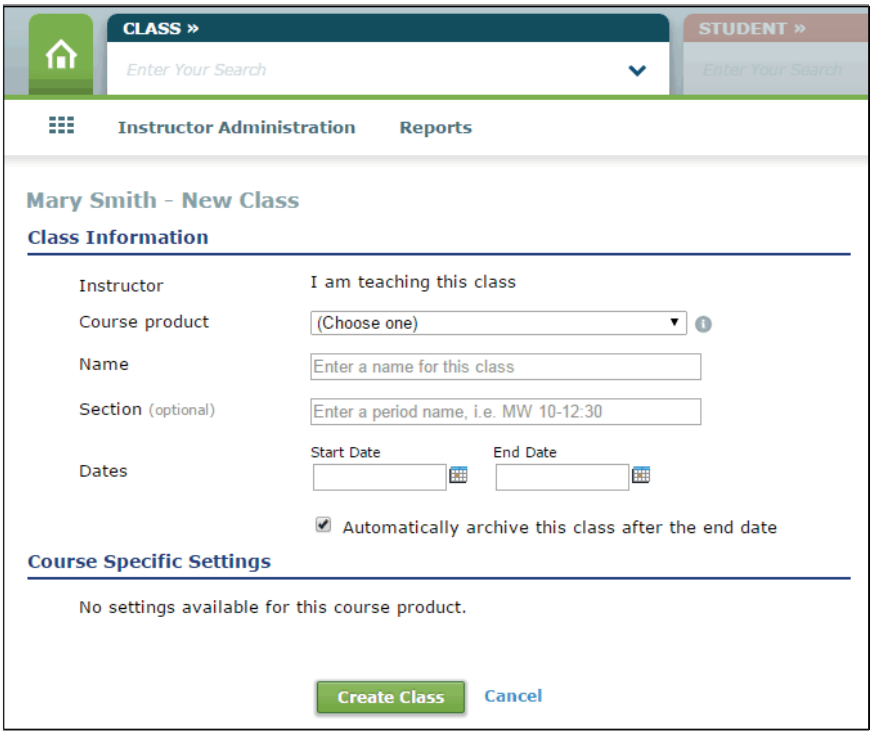


Figure 7.38: Class Information

QuickTables

QuickTables may be added to the class during the creation process or at a later time. For full details about QuickTables, see Chap. 6.

Course Specific Settings

These are any specific settings that apply to this class, such as providing ALEKS graphing calculator functionality.

Continue to Class Summary or Customize This Class

The class will be created when you click on the **Create Class Now** button. The instructor can choose to see the **Class Summary** or **Customize This Class**.

To edit the Class Information and Course Specific Settings sections at a later time, select **Class Summary**, follow by **Class Information**, and then **Edit**.

7.4.3 Save for Later or Cancel

Save for Later and **Cancel** links have been added to the class creation wizard in order to improve the workflow for instructors. These links provide a way to save the data on each page throughout the wizard, so that class customization may be stopped midway and resumed at a later time. These links appear at the bottom of the wizard pages that follow the initial Class Information page.

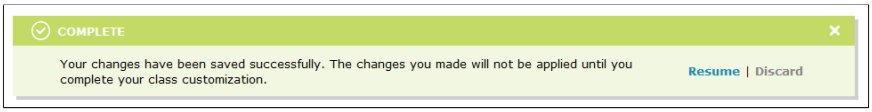


Figure 7.39: Resume/Discard

Note that using the **Save for Later** or **Save and Exit** options saves the data, but that changes are not applied until class customization is complete. Instructors will see a confirmation message on the Class Summary page that allows them to **Resume** or **Discard** these changes (Fig. 7.39).

Selecting **Discard** will discard all changes made, and **Resume** will take instructors back to the last page they were working on during class customization.

When instructors log out of ALEKS and log back in, they can easily resume or discard their class customization through the dashboard message or through the Class Summary message.

In the event that another user concurrently makes changes to a class with customizations that are "Saved for Later," messages will be shown indicating who was editing the content, and will provide an opportunity for these changes to be resumed or discarded. If changes have been made and saved by another user, the messages will indicate this also.

NOTE. The Save for Later link is not available in Master Template linked classes.

7.4.4 Textbook Integration

If an instructor chooses to customize the class after it has been created, the next page presented will be the **Class Content Customization**. Here, several choices can be made about the structure of the class, the first being whether to integrate a textbook or not. If a textbook is chosen from the list of available choices using the dropdown menu, ALEKS will automatically place chapter and section references to this textbook on the students' explanation pages.

One choice in the list of textbooks is the **ALEKS Curriculum,** which is a division of the topics based on the slices of the ALEKS Pie rather than chapters of a textbook. This choice enables student learning to be structured without the use of a specific textbook.

7.4.5 Set Objectives / Modules

Instructor can choose to configure the class with a textbook or without textbook integration.

With Textbook Integration. The instructor can use chapter-based objectives with optional custom objectives, custom objectives alone, or no objectives.

Chapter-Based Objectives with Optional Custom Objectives

If this option is selected, you will be able to choose entire chapters from the textbook as objectives for your class, and set end dates or mastery levels for these objectives (Sec. 7.4.6). This is the most efficient way of directing student learning in ALEKS. You can also create custom objectives that combine chapter material freely into new units.

Both types of objectives will include all ALEKS topics that correspond to the chapter.

Custom Objectives

If this option is selected, you will need to create all of the objectives for your class manually. This option provides the instructor with the greatest control over the class structure.

Textbook Integration - No Objectives or Modules

If this option is selected, students will see references to the textbook, but the textbook will not direct their learning.

NOTE. If you choose any of the options for structuring objectives in your class, whether by textbook chapters, custom objectives, or a combination of the two, topics will not be included in the class unless they are included in one of your objectives, or are a prerequisite topic. It will be possible, however, to remove topics after they have been included as part of a chapter or custom objective (Sec. 7.4.8). If only custom objectives are used, it will not usually be necessary to do any further customization of the content.

No Textbook Integration. If no textbook is integrated within the class, no textbook will be referenced in ALEKS, and you will only have the choice of the following two options:

Objectives / Modules

If this option is selected, you will need to create all of the objectives for your class manually.

No Objectives or Modules

If this option is selected, student learning will be guided by ALEKS without objectives.

See the following sections for additional details about the choices outlined above.

7.4.6 Objective Completion

When setting up objectives for your ALEKS class, you can choose either to define end dates **or** to set a mastery level for each objective. When using mastery level for objective completion (objectives without end dates), instructors select a final day when all objectives will be due (usually around the end of the course).

Objectives / Modules with End Dates

When an end date is assigned to an objective, students should do their best to complete the objective before this date. After this date, students will be moved to the next objective, and the material in the past objective will not be available unless it is prerequisite for current learning. If students finish an objective before the due date, instructor has the option to move students to the next objective or open all objectives so students have the option to work on Ready to Learn topics in an objective until the next objective begins.

- To choose an end date, click in the box in the end date column. Each chapter/objective included must have an end date unless objectives are being used with mastery levels.
- The start date for the first chapter/objective is always the start date of the class. The start date for any other chapter/objective is one day after the end date of the previous chapter/objective.
- Start dates cannot be set manually, and each chapter included must have an end date. If you want objectives to overlap, you must make the end dates the same. Please keep in mind that objectives with the same end date are combined as a single column in the Gradebook.

Objectives without End Dates (mastery levels for Objectives)

If you choose this option, students will be moved to the next objective when they meet the mastery level set for the current objective (the default is 90%). Students will still be able to access the remaining unmastered topics from all previous objectives through the Topic Carousel by selecting the downward arrow tab in the upper left corner of the screen. A final due date must be set for all objectives, this is the date when scores for all objectives will be sent to the gradebook. The default setting for this date is the end date of the class.

7.4.7 Objectives Editor

Initially, all textbook chapters appear in their normal, order and all are checked for inclusion in the class (Fig. 7.40).

- Remove chapters by unchecking the box to the left of the objective.
- Reorder chapters (or custom objectives) by dragging and dropping the chapter to a different position. Chapters can also be reordered by using the arrows in the **Order** column.
- Edit an objective/chapter by clicking on the **Edit** link below the objective name. This will open the **Edit Objective** page described below (Sec. 7.4.8).
- Check the box next to each chapter/objective to enable a post objective progress assessment (Sec. 7.4.10)

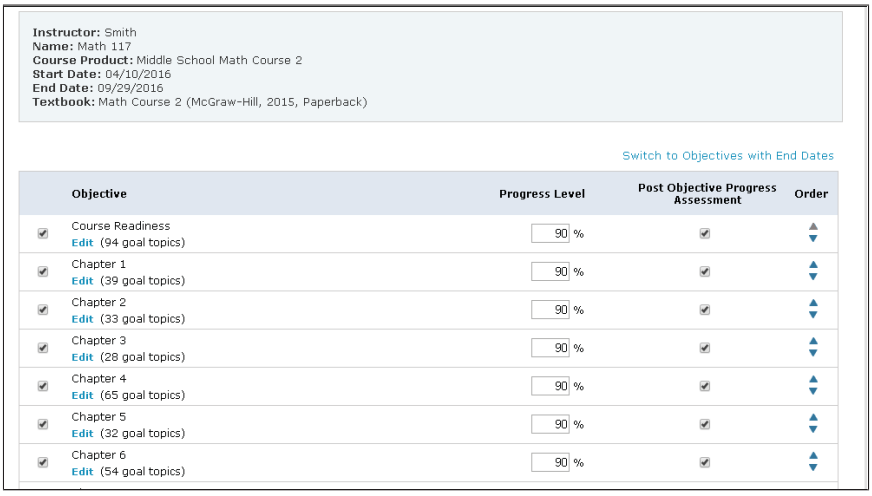


Figure 7.40: Objectives Editor

- To create an objective that does not correspond exactly to a textbook chapter or ALEKS slice, use the button marked **+New Custom Objective,** located below the list of textbook chapters/objectives.

NOTE. ALEKS permits you to order chapters freely, but a reasonable and conventional ordering of the materials should be used. ALEKS will move topics among chapters in order to maintain prerequisite relations among specific topics, with the result that an unusual ordering of the chapters may not produce the best results for your course structure. Only minor adjustments should be made to the content once students have begun working, to avoid disruption of the students' work.

To return to the Objective Editor at a later time, select **Class Summary**, locate **Class Content**, follow by **Objectives Editor**, and select **Edit**.

7.4.8 Edit Objective

Any objective content can be edited and deleted inside the **Edit Objective** window (Fig. 7.41), found by clicking on the **Edit** link below the objective name in the **Objective Editor** page. Custom objectives can also be deleted from the **Edit Objective** window.

Using this tool, chapters (or ALEKS curriculum slices) can be divided into parts or material can be combined across multiple chapters.

The Textbook View allows you to select content based on the structure of the textbook. The Slice View allows you to select content based on the structure of the ALEKS Pie Chart.

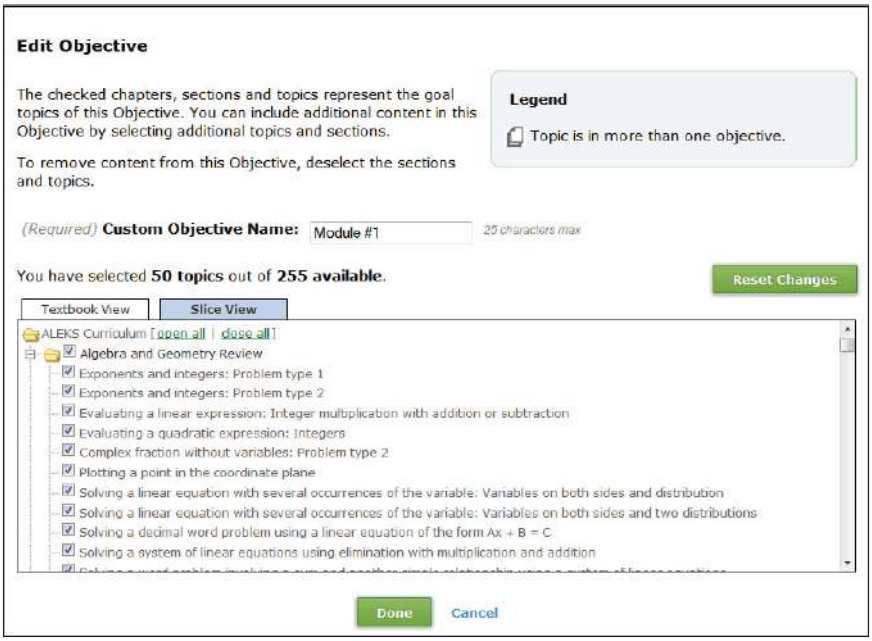


Figure 7.41: Edit Objectives

A specific textbook is integrated with the class

For chapter-based objectives there will be a Textbook View of items. When editing chapter based objectives, it will be possible to add topics only to the chapter in which they belong. For custom objectives there will be a Textbook View and a Slice View of items.

The ALEKS curriculum is integrated with the class

For slice-based objectives and custom objectives there will be a Slice View of items.

No Textbook Integration is in use

Custom objectives will present items from the Slice View.

Topics may be added or removed from objectives as follows:

- Click on the plus sign (+) to the left of each folder to view its contents.
- Check the box to the left of a topic name to include that topic in your objective.
- To see a sample problem for any topic, double-click on the topic name.
- Check the box to the right of a folder icon to include all topics in that folder.

A running count of the number of included topics will be displayed just above the directory window.

- Use the **Custom Objective Name** field to change the name assigned to the objective.

- Click the **Done** button when you have finished customizing the objective.

The new objective will appear in the table of objectives. An end date or mastery level should be entered, depending on the objective completion method in use (Sec. 7.4.6). This procedure can be repeated to create additional custom objectives.

NOTE. In classes that are configured with objectives, the Objective Editor will only display topics contained and structured according to those objectives. If an instructor removes a substantial number of fundamental topics from the class, the Topic Recommendation Tool will calculate whether any prerequisite topics are missing, and allow the instructor to add them back for optimal learning (Sec. 7.4.9).

When objective customization is complete, click on the **Continue** button to review the settings. Click on **Save** to finalize the setup.

7.4.9 Topic Recommendation Tool (TREC)

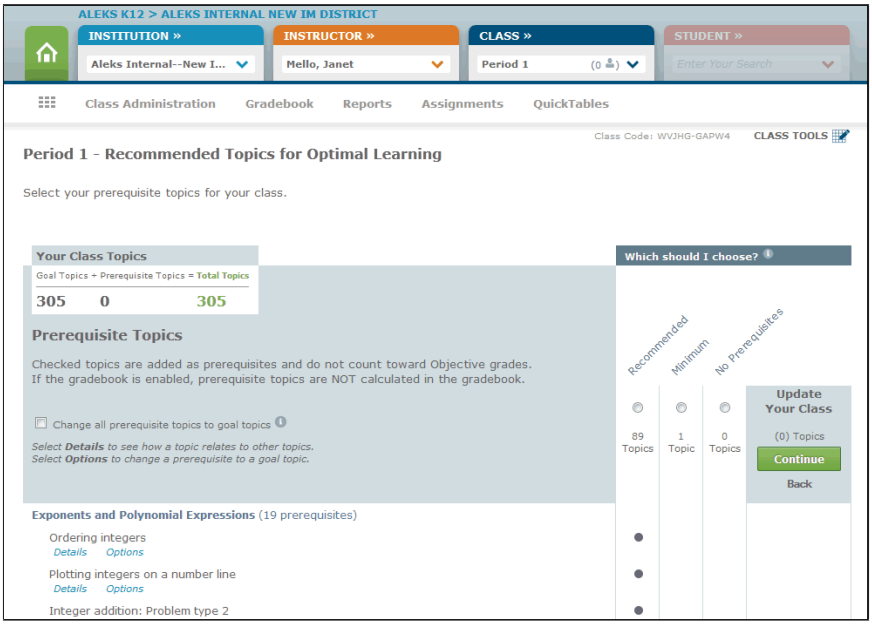


Figure 7.42: Topic Recommendation Tool (TREC)

The ALEKS Topic Recommendation Tool (TREC) provides instructors with a way to add prerequisite topics to their class content that may have been omitted during the creation/editing process (Fig. 7.42).

The TREC tool is only displayed when necessary. For example, if an instructor only changes objective due dates, without changing any actual content, TREC will be skipped.

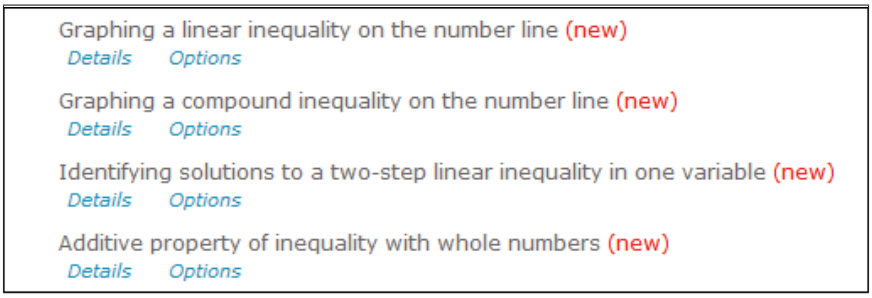


Figure 7.43: Tagging Feature

The TREC Tool displays one or more columns of recommended prerequisite topics, and instructors must select a column before being able to continue. Selecting the **Details** link will allow you to see how a topic relates to other topics.

Adding Topics to a Class

Clicking on the **Options** link will display more information about the topic and allow you to add the topic to an existing objective. Adding a prerequisite topic to an objective makes the topic a goal topic in that objective.

Topics may also be added to the course content, that are not added to an objective. These topics when completed will not count toward objective grades, if the gradebook has been enabled for the course.

The **Class Content** section of the **Class Summary** page will contain a breakdown of goal topics and prerequisite topics if applicable (Sec. 7.4.18). There will also be a link to edit the prerequisites in the TREC tool on the Class Content section. This breakdown of goal and prerequisite topics will also be included on the Course Syllabus (Sec. 7.4.16).

Currently in Class

After the class content has been edited, a **Currently in Class** column will appear. These topics are prerequisite topics that are currently in the class content but not part of any particular objective.

Recommended

These topics are recommended prerequisite topics that support instructional scaffolding and optimal learning. This selection should be used with typical classes that have some students who need additional review.

Minimum

These prerequisite topics are the minimum number of topics required for students to complete goal topics. This selection should only be used for classes where all the students do NOT need review of prerequisite topics.

No Prerequisites

Instructors can choose not to add any topics. This selection will not retain prerequisite topics; all previously added prerequisite topics will be removed.

New Tagging Feature

On subsequent visits to the TREC tool, topics not previously recommended to the instructor will be identified as **new** (Fig. 7.43).

7.4.10 Post Objective Progress Assessment

When students complete an objective assignment before the scheduled end date or reach the assigned mastery level (for objectives without end dates), they can either be assessed automatically on their mastery of this material or be moved to the next objective without an assessment.

Students who do not complete the objective material before the due date, or who do not meet the mastery level, will not have an assessment triggered by this option.

As with all assessments, once the student has started the assessment, they must complete it, even if the due date for the objective has passed.

- The assessment score will not affect the student's score for the objective completion in the Gradebook.
- This assessment will reset the **assessment clock** so that the student will not have two assessments in quick succession.
- To avoid the over-assessment of students, ALEKS will prevent all automatic assessments for students with 10 or fewer items remaining in an objective, or in the 48 hours preceding the end date of the objective.
- If there is no end date for the objective, automatic assessments will be prevented for students with 10 or fewer items remaining to complete the current objective, regardless of the mastery levels set.

7.4.11 Content Editor

The Content Editor is mainly for use in classs where **objectives are not in use**. If an instructor removes a substantial number of fundamental topics from the class, the Topic Recommendation Tool will calculate whether any prerequisite topics are missing, and allow the instructor to add them back for optimal learning (Sec. 7.4.9).

To access the Content Editor from the Class Summary, locate the **Class Content** section, and then click on **Edit** next to **Content Customization**. On the page that follows, click **Continue** to arrive at the Content Editor.

In the Content Editor:

- All topics that are checked are currently included in the class.
- Unchecked topics are excluded from the class.
- Topics may be checked to include them in the class, or unchecked to remove them.

- To see a sample problem for any topic, double-click on the topic name.

In classes that are configured with objectives, the Content Editor will only display topics contained and structured according to those objectives. The class content can be modified through the Objectives Editor (Sec. 7.4.7) and (Sec. 7.4.8).

Textbook integration tailors the contents of the ALEKS class to the content of the textbook, so that some topics normally included in a given ALEKS course product may be omitted. Even though ALEKS allows relative freedom to determine the content of your class, caution should be used regarding deep cuts to the content, as these may cause ALEKS to function incorrectly. Only minor adjustments should be made to the content once students have begun working, to avoid disruption of the students' work.

7.4.12 Section Level Content

For certain textbooks, the ALEKS items displayed in the Content Editor are organized not only by chapter, but also by section, making it more convenient to customize content on the basis of the textbook structure. Where available, section-level organization is also visible when you are choosing topics to include in Homework, Quizzes, and Test assignments.

7.4.13 Supplementary Textbook Topics

When textbook integration is used, you can also choose to include supplementary class topics available in ALEKS for certain textbooks. These supplementary topics are not specifically covered in the textbook, but can logically be associated with particular chapters. These supplementary topics are excluded from the class by default and must be manually included. Not all ALEKS classes have supplementary topics.

7.4.14 Core Readiness Topics in the Content Editor

For some textbooks integrated with ALEKS, there is an initial chapter, preceding Chapter 1, that may be called a "Readiness Chapter." (The exact name of the Readiness Chapter can vary from one book to another.) This chapter contains material that is not strictly part of the class coverage, but is important as foundational material.

If you would like the Readiness/Review chapter to be a distinct unit in the student's work, it should be assigned a completion date, like other chapters. If no separate completion date is assigned to this chapter, its core material will still be included, but as part of the first chapter.

For classes not using textbook integration, these topics will be listed in the Content Editor under the section "Core Readiness Topics"; you may remove as many of these topics as you wish. The other (non-core) topics coming from the Readiness Chapter are

also shown in the Content Editor under the section "Other Topics," but these topics will not be included in the class.

NOTE. If custom objectives are used, ALEKS will automatically include core material if at least 50% of the topics from the first regular chapter (or from the second pie slice) are included in the class coverage.

7.4.15 Class Summary

Figure 7.44: Class Summary Part 1

A summary of the class is presented at the end of the customization process (Figs. 7.44 and 7.45). This **Class Summary** can also be found under **Class Administration**.

Many options to edit the class are provided on the **Class Summary** page, including the following:

- Class Information (Sec. 7.4.2)
- Syllabus (Sec. 7.4.16)
- Standards (Sec. 7.4.17)
- Class Content (Sec. 7.4.18)
- Class Options (Sec. 7.4.19)
- QuickTables Settings (Sec. 7.4.26)
- Implementation Information (Sec. 7.4.27)
- Class Duplicate Settings (Sec. 7.4.28)
- Gradebook (Sec. 7.4.29)

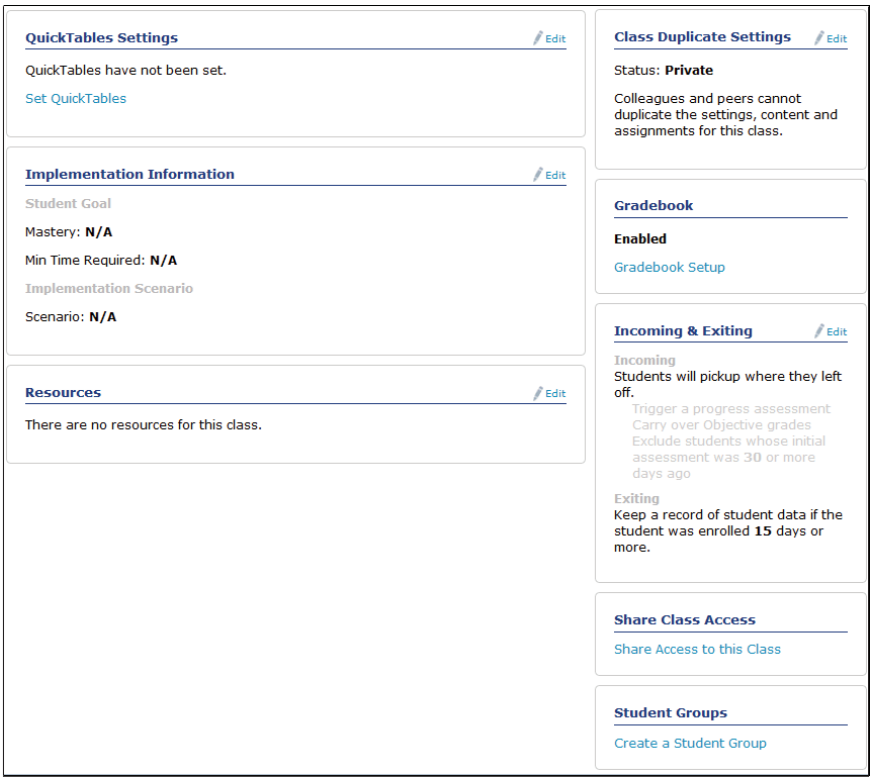


Figure 7.45: Class Summary Part 2

- Resources (Sec. 7.4.30)
- Incoming and Exiting (Sec. 7.4.31)
- Share Class Access (Sec. 7.4.32)
- Student Groups (Sec. 7.4.33)

Click on **Edit** for any area to go back and revise your choices, or use the available links.

7.4.16 Syllabus

On the **Class Summary** page there is a link to download the ALEKS Class Syllabus. Two formats are available, an HTML webpage or a PDF document. The ALEKS Class Syllabus contains a detailed summary of the class configuration. This syllabus can be printed as a convenient reference or as documentation of the class setup.

7.4.17 Standards

On the **Class Summary** page there is a link to details of any state or Common Core standards that the class is aligned with. For each class, reporting will be available based

on the applicable standard (Sec. 7.3.26)

7.4.18 Class Content

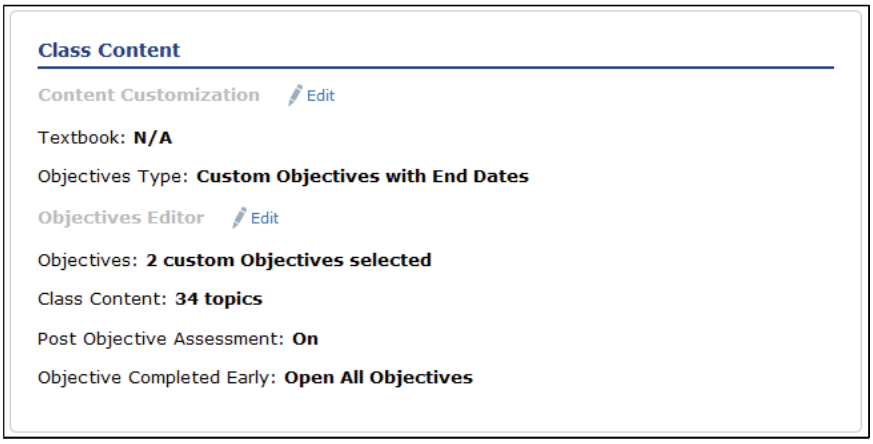


Figure 7.46: Course Content

This section on the **Class Summary** page contains the class customization options previously chosen such as textbook integration, objectives, and the objective settings (Fig. 7.46). These selections can be revisted by clicking on the **Edit** links in this section. Clicking on the **Edit Prerequisites** link (if available) will allow you to change prerequisite choices in the TREC tool (Sec. 7.4.9).

7.4.19 Class Options

Many options to edit the class settings are provided in the **Class Options** section of the **Class Summary** page, including the following:

- Access Options (Sec. 7.4.20)
- Student Activity Notifications (Sec. 7.4.21)
- Learning Options (Sec. 7.4.22)
- Parent Notification (Sec. 7.4.23)
- Class Forum (Sec. 7.4.40)
- Student Assessment Options (Sec. 7.4.24)
- Worksheet Options (Sec. 7.4.25)

Click on **Edit** to revise any of these options.

7.4.20 Access Options

From the **Class Summary** page under **Class Options**, click on **Edit** to find the **Access Options**. In this section the following access options are available:

- Student Enrollment Status can be set to Open or Closed, to allow or prevent students from enrolling this this class.
- Class Access can be set to Regular or Denied, to allow or prevent currently enrolled students from accessing this class.
- The Archive Status may be set to archived or unarchived (Sec. 7.4.43).

7.4.21 Student Activity Notifications

From the **Class Summary** page under **Class Options**, click on **Edit** to find **Student Activity Notifications**. In this section the instructor can request to be notified (and the student be notified) when a student completes an objective. The instructor can also choose to be notified and to present a certificate of achievement to students completing certain percentages of the syllabus.

7.4.22 Learning Options

From the **Class Summary** page under **Class Options**, click on **Edit** to find **Learning Options**. In this section, instructors can choose to allow students to see a Learning Page first before being given a problem to solve, show learning resources on problem page, or show the **Send Message to Instructor** button inside the learning module. These options are on by default.

7.4.23 Parent Notification

From the **Class Summary** page under **Class Options**, click on **Edit** to find **Parent Notification**. This feature allows instructors to elect to email periodic automatic progress reports to the student's parent/guardian, and to allow the parent/guardian to reply directly to these emailed reports.

Instructors can enter up to two email addresses for each student in the student's **Account Summary** (Sec. 7.8.1).

7.4.24 Student Assessment Options

From the **Class Summary** page under **Class Options**, click on **Edit** to find **Student Assessment Options**. If the school has IP addresses in place at the school level in ALEKS, the locations that assessments can be taken from may be restricted to these

IP addresses. This setting may be differentiated for the Initial Assessment and all subsequent assessments.

Instructors can also delay progress assessment. This feature allows students to finish other assignments or goals before taking the assessment. The assessment delay feature will apply to subsequent or future assessments, not if the assessment is either current or in the past.

7.4.25 Worksheet Options

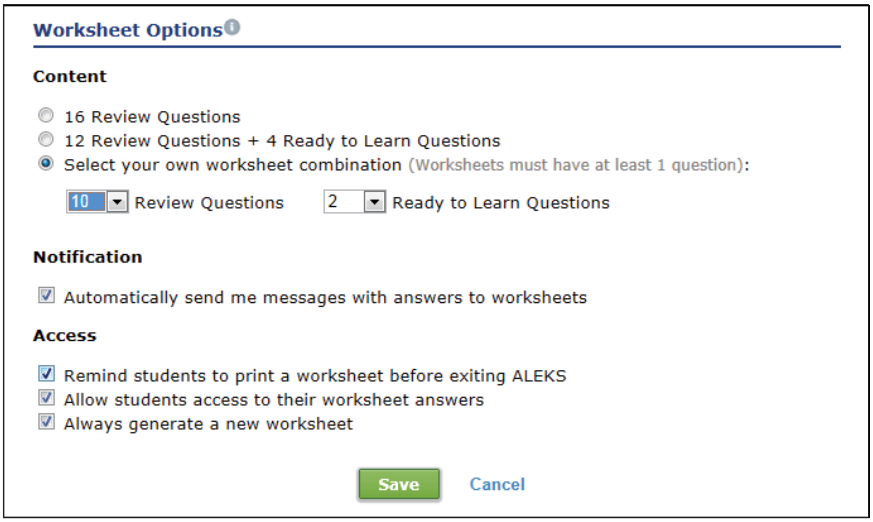


Figure 7.47: Worksheet Options

From the **Class Summary** page under **Class Options**, click on **Edit** to find **Worksheet Options** (Fig. 7.47). Worksheets consist of 16 questions; by default, these are drawn from the student's recent learning history, but optionally four of the 16 may be chosen from material that the student may be working on soon (**Ready to Learn Questions**). Instructors can also manually select their own worksheet combination by using the drop-down menus to specify the number of **Review Questions** or **Ready to Learn Questions**, to include in the worksheet. By default, the instructor always receives messages in ALEKS with the answers to worksheets that students have generated independently. This option can be turned off.

Other options are:

- Remind the students to print a worksheet at the end of an ALEKS session.
- Allow students see the answers to their worksheets.
- Always generate a new worksheet; by default, this only occurs after the student has done some work in Learning Mode.

7.4.26 QuickTables Settings

From the **Class Summary** page there are links in this section that enable instructors to edit and create QuickTables and adjust class settings. For more information, see Sec. 6.1.3.

7.4.27 Implementation Information

From the **Class Summary** page there is a link to an **Implementation Information** page where instructors are encouraged to enter information about their setup and use of ALEKS. This information helps enable effective training and identify best practices.

7.4.28 Class Duplicate Settings

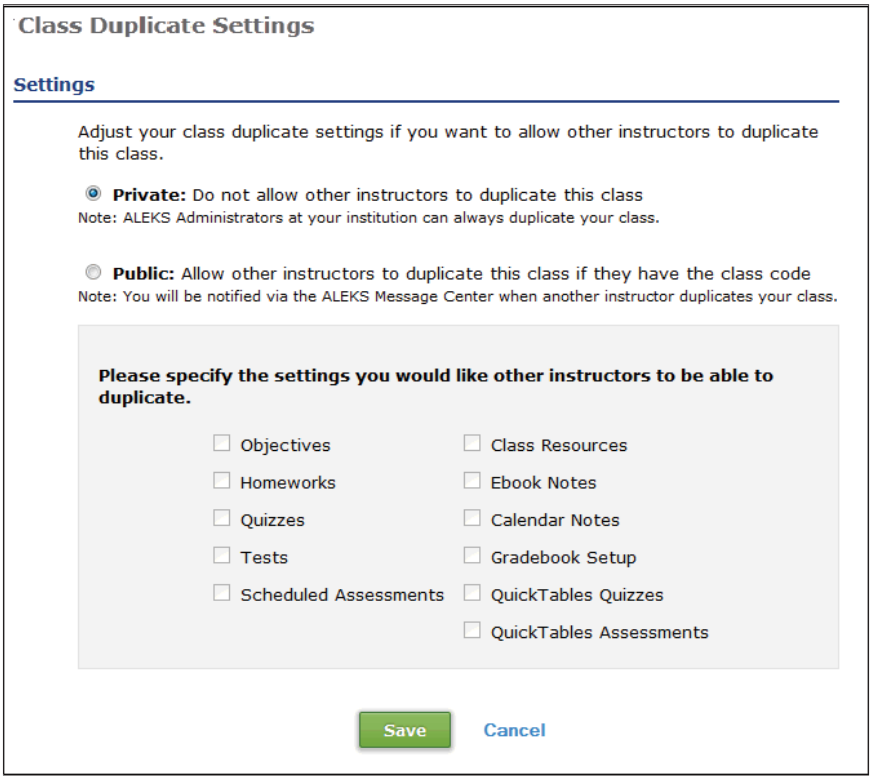


Figure 7.48: Class Duplicate Settings

From the **Class Summary** page there is a link to the **Class Duplicate Settings** (Fig. 7.48). In this section instructors can adjust class settings that allow other instructors to duplicate this class. To duplicate a class belonging to another instructor, the instructor will need the class code (Sec. 7.4.1).

NOTE. ALEKS Administrators at the institution can always duplicate any class.

7.4.29 Gradebook

From the **Class Summary** page, instructors may access the **Gradebook Setup** page. For full details about the Gradebook, see Sec. 7.6.

7.4.30 Resources

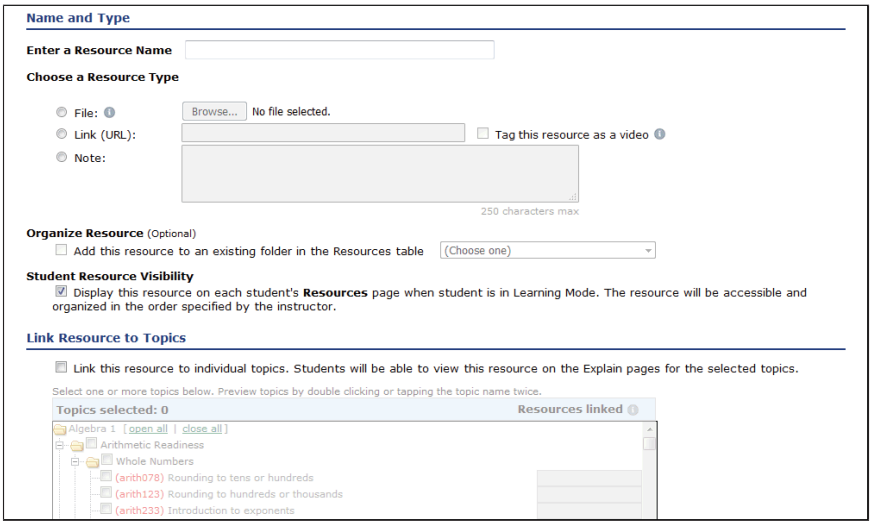


Figure 7.49: Resources

From the **Class Summary** page there is a link to the **Resources** feature. This feature can also be accessed from **Class Administration** and the **Class Tools** icon.

Resources can be added in ALEKS at the class or individual topic level. With this feature, instructors can share files, links, and notes to aid student learning. Students can access these resources through the Resources page and/or Explain pages of ALEKS based on the accessibility options selected by the instructor. An example of a resource is an online video that relates to a particular topic in ALEKS.

Instructors can begin by adding resources or by creating folders to organize the resources. Resources and folders can be added at any time and in any order, and folders can be further organized by creating subfolders.

Below are the resource requirements (Fig. 7.49):

- Three types of resources can be added: files, links, or text-only notes (250 characters or fewer).
- Valid URLs must begin with **http**://, **https**:// or **www**.

- There is no limitation on the number of resources that can be uploaded per topic.
- The file upload size is limited to 4MB per file, and the total amount of resources that instructors can upload in any class is limited to 100MB. Many file extensions are accepted for upload.

7.4.31 Incoming and Exiting Student Options

These settings determine the rules for assessments, objective grades, and student data when they switch from one class to another within the same course family or course product. These settings can be customized at the Institution, Master Template, and class level.

Incoming Students from a class using a closely related course or same Course Product:

Students Will Pick Up Where They Left Off

Students' pie progress will be carried over to this class. Optional Settings for these students are to trigger a progress assessment, or carry over objective grades. Students whose last initial assessment was more than a certain number of days may be given an initial assessment.

Fresh Start

All students will be given an Initial Assessment.

Exiting Students, regardless of what course product they are going to:

Always keep a record of student data in my class, regardless if they exit my class (Recommended)

These students will appear as "Former" students in class rosters.

Keep a record of student data if the student was enrolled for more than a certain number of days

These students will appear as "Former" students in class rosters.

Never keep a record of student data in my class

There will be no record kept of the student's work in the first class, as though he or she had not been in that class.

NOTE. At the school level, there is a **Lock** option, to prevent individual instructors from changing these options at the class level. Please also note that the settings above **do not** apply to students switching classes within the same Master Template.

Note also that these settings do not all apply when the student is moving between courses linked to the same Master Template (Sec. 7.10).

7.4.32 Share Class Access

From the **Class Summary** page there is a link to the **Share Class Access** feature. This feature can also be accessed from the **Class Administration**.

Instructors can share access to their classes with TAs (Teaching Assistants) and other instructors by assigning access levels. Only TAs and Instructors who have been set up in ALEKS will be included in the list of instructors to share the class with.

The instructor of the class will have the following options for assigning an access level:

- No Access
- Full
- Gradebook
- Read Only
- Assign per Student

A shared class will be listed for shared instructors with a "S" next to the name in class lists.

NOTE. ALEKS Administrators always have full access to all classes within the school.

7.4.33 Student Groups

From the **Class Summary** page there is a link to the **Student Groups** feature. This feature can also be accessed from the **Class Administration**.

Instructors can divide their classes into Student Groups for filtering reports and Gradebook scores. Students can be added to more than one Student Group; in other words, Groups can overlap. The Student Groups Filter can also be accessed at the Class Level Dashboard.

7.4.34 Class List

Under **Class Administration**, select **Class List**. This feature can also be accessed from the **Instructor Administration**. A list of the instructor's classes will be displayed (Fig. 7.50). ALEKS Administrators will see all ALEKS classes for each instructor at the school.

When one or more classes are selected by checking the box to the left of a class, the following actions will become available (when applicable):

- New Class (Sec. 7.4.1)
- Class Summary (Sec. 7.4.15)
- Dashboard (Sec. 7.1.4)

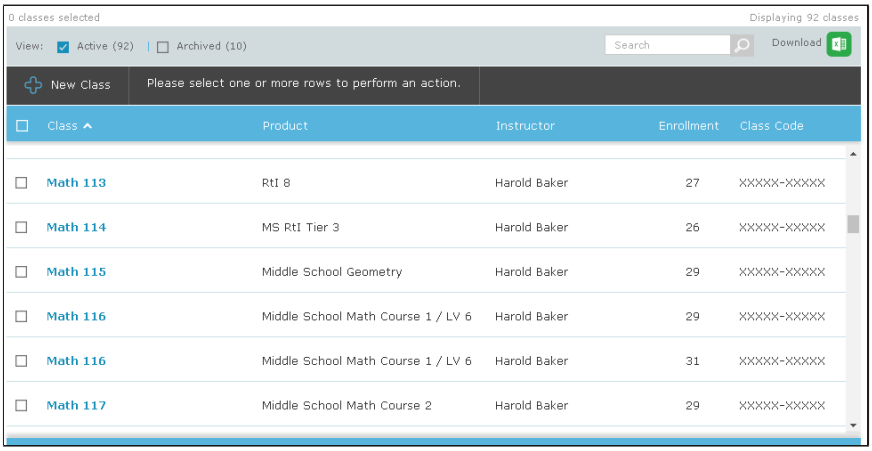


Figure 7.50: Class List

- Duplicate (Sec. 7.4.1)
- Archive (Sec. 7.4.43)
- Delete (only available if no students are enrolled in the class)

7.4.35 Cleanup Tool

From the **Class Administration**, select **Cleanup Tool**. This feature is used to clear statistics and records at the class level. The tool should be used with **extreme caution**. The action is irreversible and may cause great disruption to your class.

Clear Statistics

This will clear time logged by students in this class.

Clear Statistics and Records

This will clear time and data accumulated in this class. Students will be prompted to complete a new Initial Assessment. Please contact Customer Support for this request.

7.4.36 Class Roster

From the **Class Administration**, select **Class Roster**. A list of the students enrolled in the class will be displayed (Fig. 7.51).

When one or more students are selected by checking the box to the left of a student, the following actions will become available (when applicable):

Dashboard

To display the student's **Dashboard** (Sec. 7.1.4).

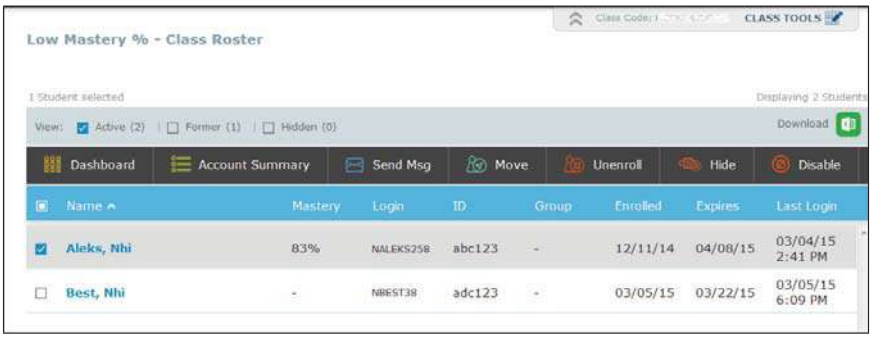


Figure 7.51: Class Roster

Account Summary

To display the student's **Account Summary**.

Send Msg

To send a message to the selected student(s).

Move

To move the student to a new class.

Unenroll

To unenroll the student from the current class.

Hide

To hide the student from the class.

Disable

To disable the student from accessing the current class.

Students are tagged as Active, Former, or Hidden. For information about filtering students in the roster, see Sec. 7.2.9.

7.4.37 Enroll / Pre-Register Students

From the **Class Administration**, select **Enroll / Pre-Register Students**. This feature allows instructors to register a group of students at the same time for a single class. Students do not need to self-register when instructors use this pre-registration feature.

Student information can be entered by typing, or copied and pasted from another source (such as a spreadsheet).

It is only possible to pre-register students up to the number of available subscriptions.

7.4.38 Authorize Students

From the **Class Administration**, select **Authorize Students**. When students self-register into the class, this feature allows instructors to authorize the students's registration in their own classes so that the student can begin using ALEKS.

1. Select the student(s) that you would like to authorize.
2. Select an action from the drop-down menu.
3. Click on the **Apply** button.
4. Confirm that you want to proceed with the chosen action.

7.4.39 Extend Student Accounts

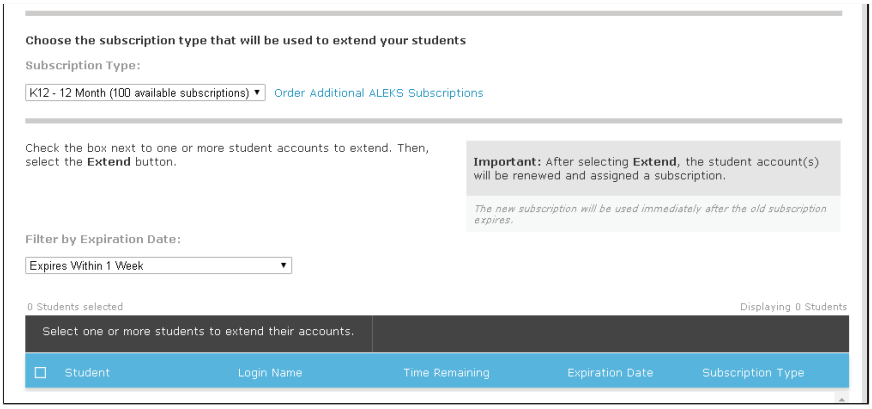


Figure 7.52: Extend Student Accounts

From the **Class Administration**, select **Extend Student Accounts**. This feature allows teachers to efficiently renew student accounts with no action required from the student (Fig. 7.52). After the extension, students can continue to use their accounts without interruption.

7.4.40 Forum

From the **Class Administration** or from the **Class Tools** icon, select **Forum**. The Forum can be used to facilitate meaningful discussions with students in the class. The Forum will have to be enabled the first time the instructor accesses it. To disable the Forum, deselect the option on the **Class Options** page (Sec. 7.4.19).

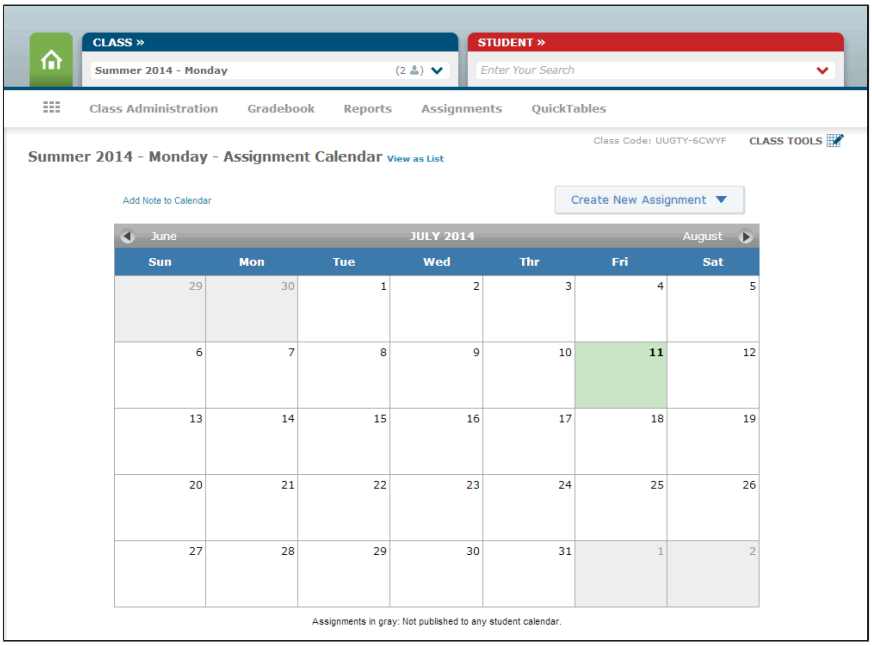


Figure 7.53: Calendar

7.4.41 Calendar

The **Calendar** can be accessed either from the **Class Administration** or from the **Class Tools** icon (Fig. 7.53). Instructors can view and schedule assignments through the Calendar by clicking on the **Create New Assignment** button. Instructors can create a new assignment from the beginning or select **Duplicate from Another Class** to resuse the same content. The Calendar shows all **assignments** in the class, one month at a time, with their start and end dates.

Hovering over either a start date or an end date will highlight the start and end dates for the assignment.

All assignments appearing in the Calendar may be included in the class grading scheme. Assignments do **not** have to be graded, however, to appear in the Calendar. All assignments, graded or not, will appear in the Calendar unless deliberately excluded.

It is also possible to add arbitrary notes to the Calendar by clicking the link, **Add note to Calendar** (upper right).

7.4.42 Student View

The **Student View** can be accessed either from **Class Administration** or from the **Class Tools** icon. The student view can be used to experience exactly what a student experiences in ALEKS. The Student View for an instructor behaves as it would for student: instructors complete the ALEKS tutorial and Initial Assessment, view their

pie chart, enter Learning Mode, and can complete assignments if any have been created and assigned to the class. The Reset the Student View checkbox can be used to reset the Student View to the beginning of the Student Module (i.e. the ALEKS tutorial); this will delete any previous work logged by the instructor in the Student View.

7.4.43 Class Archive

Archiving can be used to simplify the list of classes displayed from the Class tab. Class archiving (and unarchiving) can be done in several ways. Individual classes can be archived from the **Class Summary** page (Sec. 7.4.15), whereas multiple classes can be archived from the **Class List** page (Sec. 7.4.34). Classes can be set to archive automatically after their end date has passed (Sec. 7.4.2).

7.4.44 Class Tools

Figure 7.54: Class Tools

After selecting a class, the Class Tools link will be available in the upper right area of the page (Fig. 7.54). Clicking on this link will display icons for quick access to the following for the current class:

- Forum (Sec. 7.4.40)
- Calendar (Sec. 7.4.41)
- Resources (Sec. 7.4.30)
- Student View (Sec. 7.4.42)

7.5 Assignments

The following kinds of assignments can be created in ALEKS: Pie Progress Goal, Time Goal, Topic Goal, Homework, Tests, Quizzes, and Scheduled Assessments (Fig. 7.55). All are optional: ALEKS can be used without any of these, but they may enhance the

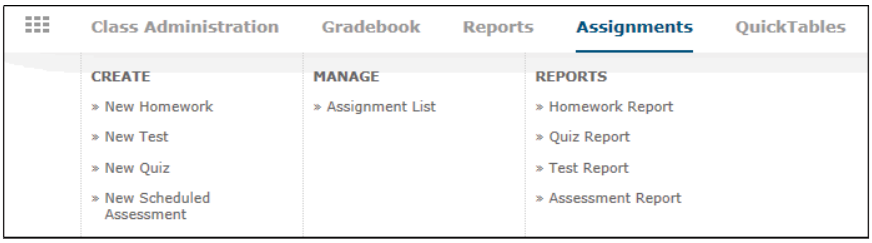


Figure 7.55: Assignments

effectiveness of ALEKS in certain instructional contexts. Pie Progress Goal, Time Goal, and Topic Goal are similar in setup and will be addressed breifly below. Homework, Tests, and Quizzes are similar in how they are configured. The process of creating a Homework assignment will be described below in full detail; Scheduled Assessments will be treated more briefly, focusing on how they differ from Homework, Quizzes, and Tests.

All assignment types are separate categories in the ALEKS Gradebook (Sec. 7.4.29).

7.5.1 Class Assignments

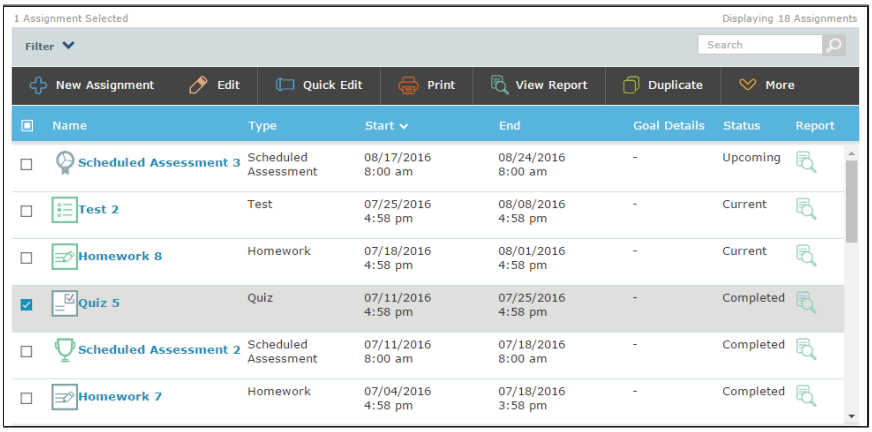


Figure 7.56: Assignment Status

Assignments that have been created for a class can be viewed by clicking on the **Assignments** option. The **Assignments** link will display a table showing all assignments in the class (Fig. 7.56). By default the list is sorted by end date, then the name of the assignment. The list can also be sorted based on other columns as well. The table includes the following information: Assignment Name, Type of assignment, Start Date, End Date, Goal Details, Status of the assignment, and a Report option to display the results of the assignment per student.

Possible Status values are:

Current
The assignment is currently available.

Upcoming
The assignment will be available at a future date.

Completed
The assignment due date has passed.

Disabled
The assignment has been set up as Disabled in Step 1 on the assignment setup screen.

Clicking on the box next to one of the assignments will display a list of **Actions** available for that assignment. Clicking on more than one assignment at a time will limit the actions available.

Available **Actions** are:

Edit
Instructors can modify an existing assignment in the class.

Quick Edit
Instructors can adjust the Assignment Name, Start Date and Time, End Date and Time, and Status.

Print
Instructors can print up to five different instances of this assignment (Homework, Test, or Quiz).

View Report
Instructors can view a report showing each student's result on the assignment.

Duplicate
Instructors can make a duplicate copy of an existing assignment in the current class.

More
Selecting the **More** action will display additional options.

Shift Start and End Dates
Instructors can adjust the selected assignment Start and End Dates forward or backward by a selected number of days.

Set Start and End Dates
Instructors can set the selected assignment start date and time and end date and time.

Delete
Instructors can delete the selected assignment.

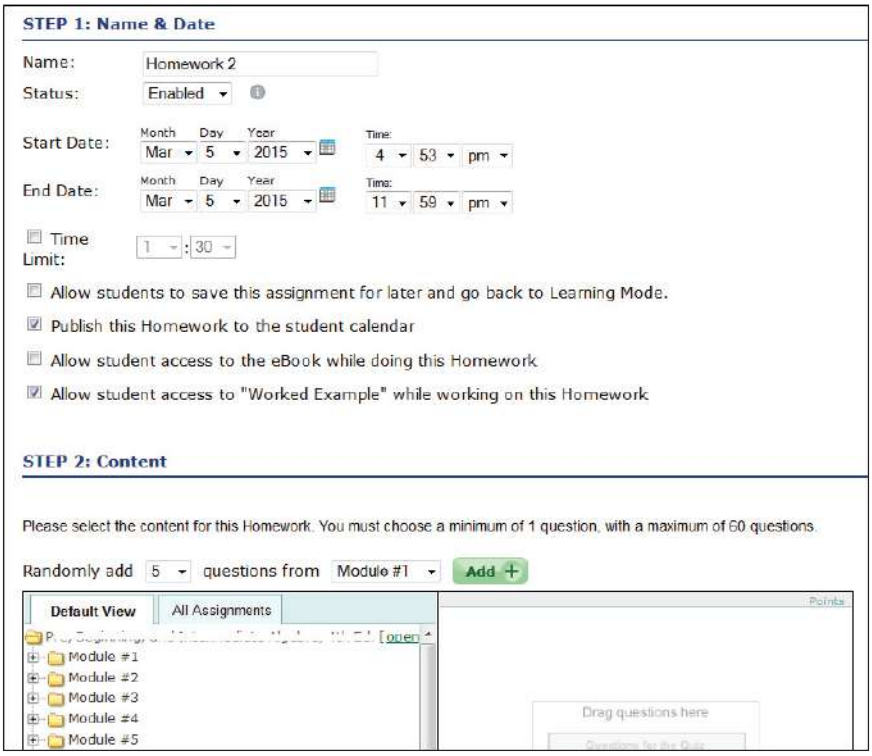


Figure 7.57: New Homework

7.5.2 New Homework

Instructors can create a new Homework assignment by clicking on the **Assignments** tab then the **New Homework** link. (Fig. 7.55). Alternatively, instructors can create a new Homework assignment by using the **Duplicate** option from the Assignment List.

The following steps are needed to complete the assignment creation process (Figs. 7.57 and 7.58):

STEP 1: Name & Date

Basic information about the Homework assignment is entered including a name and the dates when it will be available (Sec. 7.5.3).

STEP 2: Content

In this step content is added to the assignment (Sec. 7.5.4).

STEP 3: Gradebook Settings

Instructors can specify when students can see their grades, or if multiple attempts are permitted for the assignment (Sec. 7.5.5).

STEP 4: Advanced Options

In this step instructors can control student access to the assignment (Sec. 7.5.6).

STEP 5: Grading Scale

A grading scale can be set for the assignment and parameters are available to optionally allow this score to be visible to students (Sec. 7.5.7).

7.5.3 Name & Date

STEP 1. This step allows the instructor to select a name for the assignment and the start date and time and end date and time for the Homework. The Homework will be available to the students during this period. By default, the start date and time is when you begin creating the Homework; the end date and time is 11:59 PM of the same day. This section additionally includes other accessibility parameters that can be selected.

Name

A sequential name for the Homework will be generated (e.g., Homework 1, Homework 2, etc.), or the instructor can choose a name.

Status

Normally, the Homework will be left **Enabled**; if you wish to keep it hidden for the time being, change the Status to **Disabled** using the drop-down menu.

Start Date and End Date

Enter the Start Date and Time and the End Date and Time defining the period when the assignment will be available to students.

Location

If IP addresses are used to restrict access to assignments to within the school, a Location drop-down menu will be available (Sec. 7.9.1).

Time Limit

By default, there is no time limit on a Homework, but one may be assigned.

Allow students to save this assignment for later and go back to Learning Mode

By checking this box, instructors can allow students to start an assignment and then save it to complete later. A **Save for Later** button will be available for students to click when taking the assignment. This will permit students to work in Learning Mode or on other assignments before finishing the assignment. This option is not available for timed assignments.

Publish this Homework to the student calendar

The assignment is normally published to the student calendar, but this can be disabled.

Allow student access to Worked Example while working on this Homework

Instructors have the option to activate the Worked Example for any given homework.

7.5.4 Content

STEP 2. There are several ways to select the topics that the Homework assignment will cover.

Selecting Specific Topics

Using the directory on the left-hand side of the Selector window, select the topics you wish to include, and click on the **Add** button underneath the Selector. Shift and Ctrl can be used for easy selection of multiple topics. If Textbook Integration is used (Sec. 7.4.4) the directory may be organized by the textbook. If Textbook Integration is not used then the topics will be organized using ALEKS's own categories, or the instructor can select to organize the topics by Standard if this option is available. If TREC items were added to the class, there will be an extra folder available that contains prerequisite topics (Sec. 7.4.9).

Select the **All Assignments** tab to create a Homework that contains the same topics used in another Homework, Quiz, or Test.

Selecting Random Topics

Another way to add questions is to specify the number of questions and the chapter from which they are to be taken, then click **Add** above the Selector window. The questions will be chosen at random from the chapter or standard you specify. You can also do this for different sections, then **Shuffle** (randomize) them if desired. The total number of questions on the Homework cannot be less than 1 or greater than 60.

To remove topics from the Homework, select them on the right-hand side and click the **Remove** button. The order of topics can be changed by dragging them in the list, or by selecting them and using the up and down arrows. Or, you can randomize the order by clicking the **Shuffle** button.

Instructors can modify the points assigned to each topic, ranging from 1 point up to 99 points. This allows some topics to be weighted more heavily on the assignment than others.

To see a sample question for a topic, double-click on the name of the topic. This is not the question that your students will see; the actual questions appearing on the assignment will be generated algorithmically at the time the Homework is taken. Each student will see a different question, but it will be equivalent to the sample question in topic and difficulty.

7.5.5 Gradebook Settings

STEP 3. You can choose whether the students will see their scores and grades immediately (default), or only after the end date (Fig. 7.58). Next is a box that can be checked to have ALEKS automatically assign partial credit for multi-part problems on

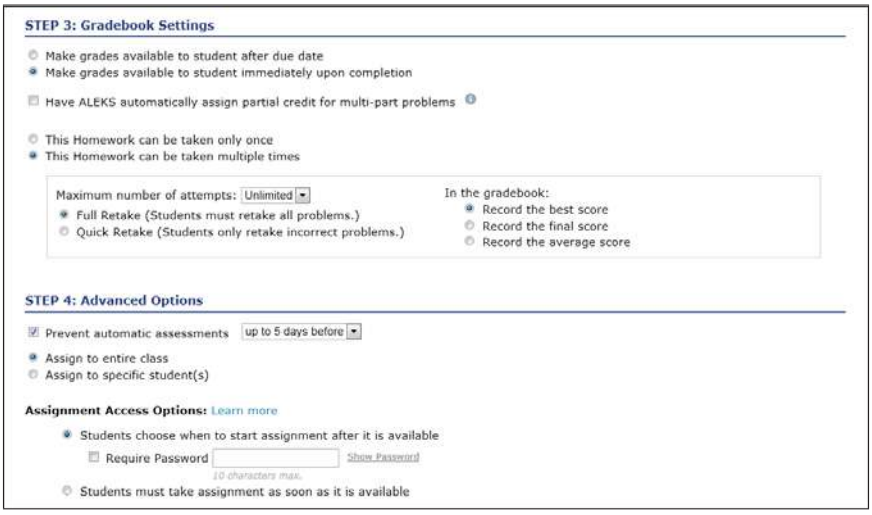


Figure 7.58: New Homework (cont.)

the Homework. You can also specify whether the assignment may be taken once or multiple times. If you click the option "This Homework can be taken multiple times," a window will open in which you can select a number of attempts, as well as options for which score should appear in the Gradebook (the best score, the final score, or the average of all attempts). Also, in this window you can choose one of the following retake options:

Full Retake

Students must retake all problems (default).

Quick Retake

Students retake only the problems that were answered incorrectly.

7.5.6 Advanced Options

STEP 4. The **Prevent automatic assessments** option allows you to postpone automatic assessments for up to 7 days prior to the beginning of the assignment (defaults to 2 days). Postponed automatic assessments will occur as soon as the assignment is completed or its end date passes. **Objective completion assessments will only be delayed up until the start date of the assignment. Extensions are not taken into account** (Sec. 7.5.8).

The instructor can choose whether to assign the Homework to the entire class or only to some students in the class (including a single student, or no students). If you click the option for "specific student(s)," you will see a list of the names of students in the class with checkboxes.

NOTE. When an assignment is scheduled for some students, rather than the entire

class, the assignment will be considered extra credit in the ALEKS gradebook. This ensures that the assignment will not hurt any student's grade.

Next, you will be given the choice of how your students will access the Homework assignment. There are two options:

Students choose when to start Homework assignment after it is available

Students have the flexibility to choose when to start the Homework assignment so that they can continue to work in other parts of ALEKS without being forced into the assignment.

Included in this option is the ability to password-protect the Homework assignment, providing more control of when and where the Homework assignment can be taken.

Students must begin the Homework assignment as soon as it is available

Students are "forced" into the Homework assignment as soon as they log in, once it becomes available. With this option, students will not be able to work in any other areas of ALEKS until they have completed the Homework assignment. See Sec. 7.5.10 for examples of how ALEKS will behave when this option is used.

7.5.7 Grading Scale

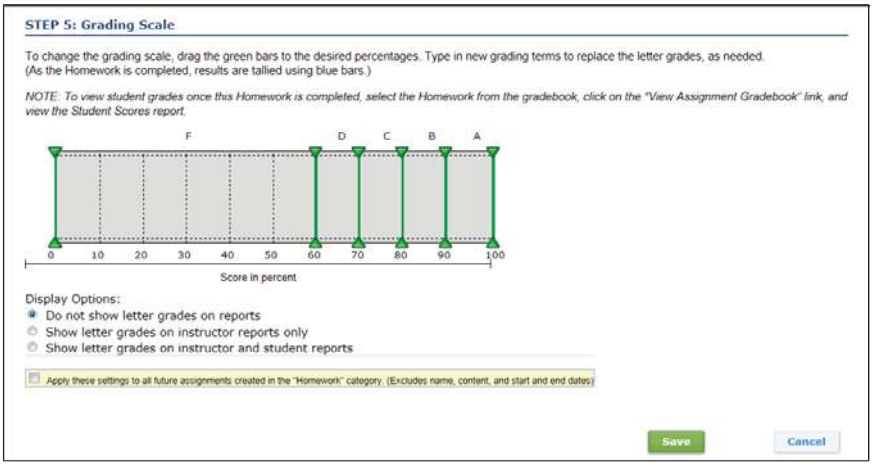


Figure 7.59: New Homework (cont.)

STEP 5. By default, no grading scale is used, and the students see only a percentage score. If the grading scale is used, its default is a conventional scale (A, B, C, etc.) using standard percentage breakpoints (Fig. 7.59). The sliders on the scale can be moved and renamed, and you can add or remove sliders to set practically any scale desired. The labels on the sliders, which are used as grade notations, are limited to a few letters or

numbers; to set the label, click on the existing label, type in the new label, then press **Return**.

Use the **Display Options** under the grading scale to set whether the scale will be used. Even if the scale is not used, the graph will be populated as a histogram once the students begin taking the Homework, giving a useful illustration of the students' performance on that assignment.

NOTE. You can choose to apply the settings on this screen to all future assignments created in this category, in the class by checking the box underneath the display options. This will not include the name, content, and start and end dates.

To complete the process, click **Save** at the bottom of the New Homework page. After you click the **Save** button, the Homework assignment can be edited if changes are required (Sec. 7.5.8). If you do not wish to save the Homework Assignment, click the **Cancel** button.

7.5.8 Edit Homework

To edit a Homework assignment, click on the Assignment List link. Next, check the box next to the Homework name that you want to edit. Click the **Edit** action to edit the assignment. Homework can be modified up to the moment when the first student begins to take it; extensions can be created at any time.

STEP 1 through **STEP 5** can be edited on this screen. Also, at the bottom of the Edit Homework screen is a **Delete this homework** button. Clicking this button will delete the Homework assignment.

Create Extension. When students are enrolled in a class, the **Create Extension** feature is available on the Edit Homework page. Extensions can be created for one or more students. To create the extension, click on the **Create Extension** button, select the date and time through which the extension will be in effect, choose the student(s) who will be given the extension, and click the **Create Extension** button.

7.5.9 Scheduled Assessments

Scheduled Assessments have many of the same options as Homework, Quizzes, and Tests (Fig. 7.60). The fundamental difference is that you do not specify the content of an assessment; the assessment is produced by ALEKS automatically, as with all other assessments (Sec. 4.1).

Here are some noteworthy features of Scheduled Assessments:

- When creating a Scheduled Assessment, the instructor has a choice between a "Progress"-style assessment and a "Comprehensive"-style assessment. Progress Assessments are slightly shorter and focus on the student's most recent learning history; Comprehensive Assessments are slightly longer and probe more deeply into the student's overall knowledge of the class content.

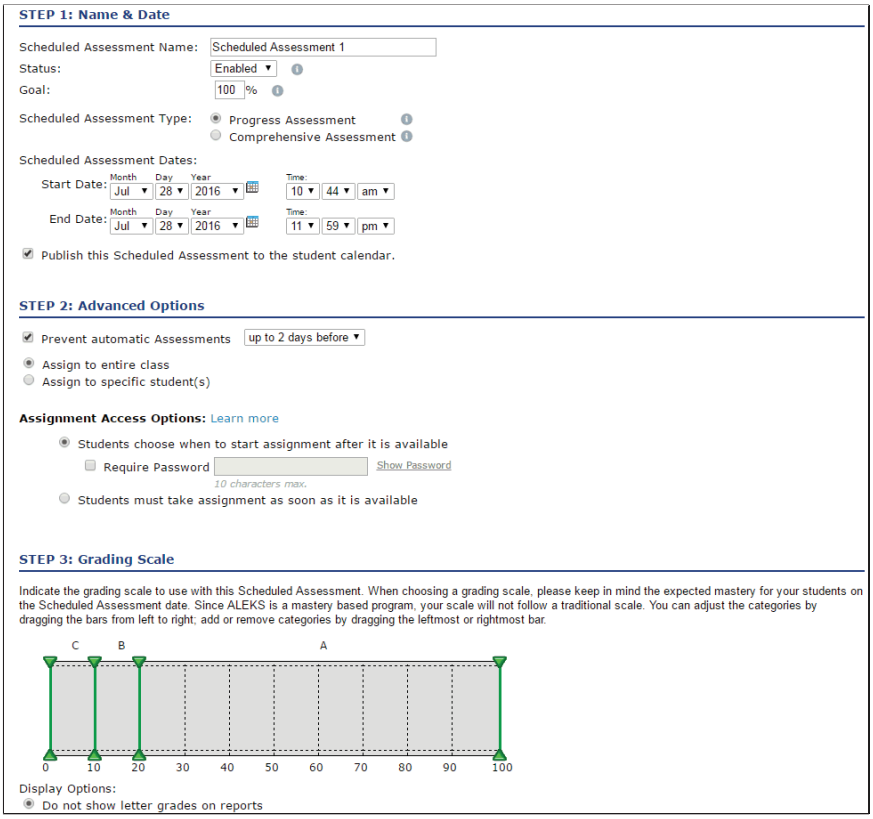


Figure 7.60: Add an Assessment

- Scheduled Assessments will not allow access to worked examples, integrated eBooks, or multiple attempts.

- It is helpful to block automatic assessments for a number of days prior to the Scheduled Assessment, using the Prevent automatic assessment option. A Scheduled Assessment will "reset the clock" for automatic assessments, so that the "blocked" assessments do not kick in when the assessment is completed.

Assessments and Grading. The score for all ALEKS assessments, including those scheduled as assignments, is always a percentage representing the student's knowledge of the entire class contents. Assessments do not measure the students' knowledge exclusively of a particular chapter, unit, or other portion of the class contents. Many instructors prefer not to use Scheduled Assessment results as part of the grading scheme. If Scheduled Assessments are used for grading the grading scale should be set carefully, to reflect your expectation of what the students will have learned at the time the assessment is taken. For more information on setting a goal percentage for a Scheduled Assessment, see Sec. 7.6.2.

7.5.10 Scheduled Assignment Behaviors

The following are several examples of how the ALEKS system will behave when a student must begin a scheduled assignment as soon as it becomes available in ALEKS.

- If a student is working on any kind of assessment (except Initial Assessment), and a Scheduled Test or Scheduled Quiz becomes available, the system will interrupt the assessment, and the student will be prompted to take the Scheduled Test or Quiz immediately. After the student completes the Scheduled Test or Quiz, the assessment will continue where the student left off.
- If a student is working on any kind of assessment, and a Scheduled Assessment becomes available, the system will stop and **discard the current assessment**. The student will see a message that says the assessment was canceled. The student will be prompted to take the Scheduled Assessment immediately.
- If a student is working on a Homework, Quiz, or Test, and another Homework, Quiz, Test, or Scheduled Assessment becomes available, the system will not interrupt the student's work. The system will wait until the student has completed the current assignment before prompting the student to take the scheduled assignment.

7.5.11 Worksheets

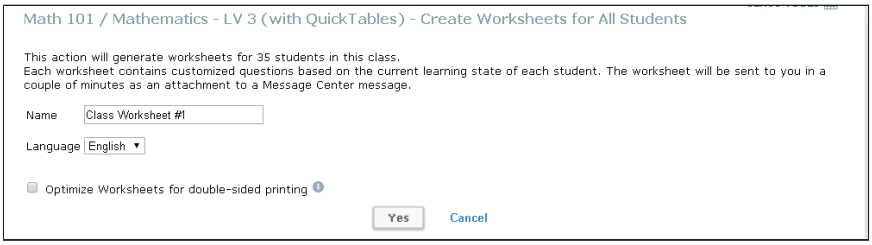


Figure 7.61: Manage Worksheets

Selecting **New Worksheet** lets you create worksheets for the entire class or individual students in the class (Fig. 7.61). Alternatively, you can create worksheets for the class by selecting **Worksheets** and then selecting **in English** or **in Spanish**. On the same page, you can also view worksheets that have been created in the past. You also have the option to create worksheets for an individual student (Sec. 7.8.8). Students also have the ability to print their own worksheets (Sec. 5.6).

For more information about Worksheets, see Sec. 7.4.25.

7.5.12 Pie Mastery, Time, and Topic Categories

The following categories require specific components to be added via the Gradebook Setup Page, to be included in the Gradebook.

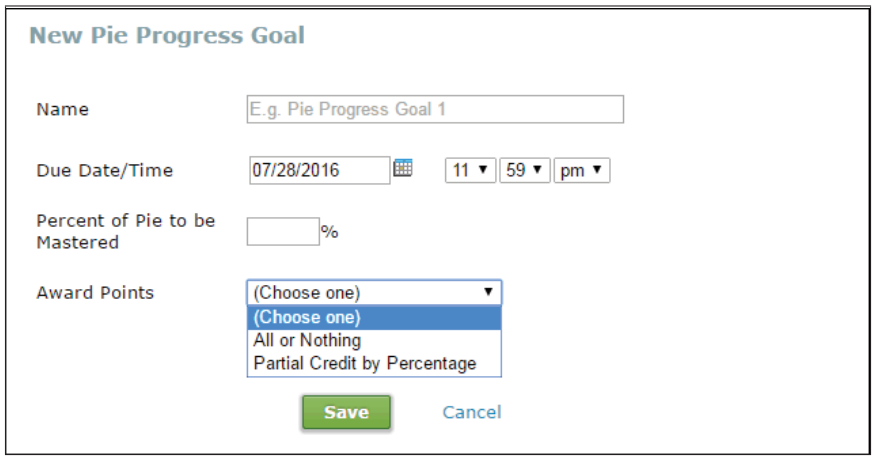


Figure 7.62: Pie Mastery Grade Settings

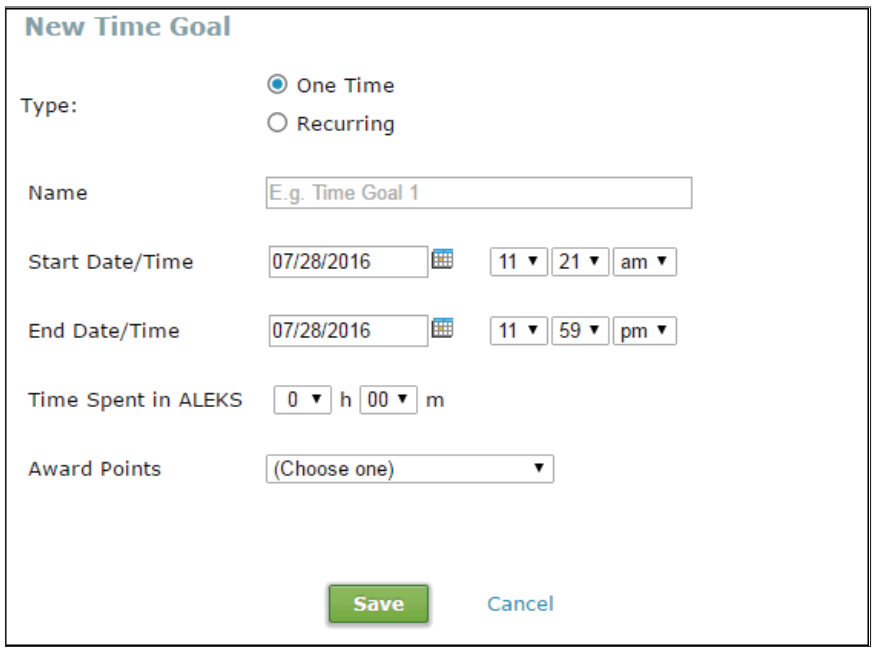


Figure 7.63: Time Grade Settings

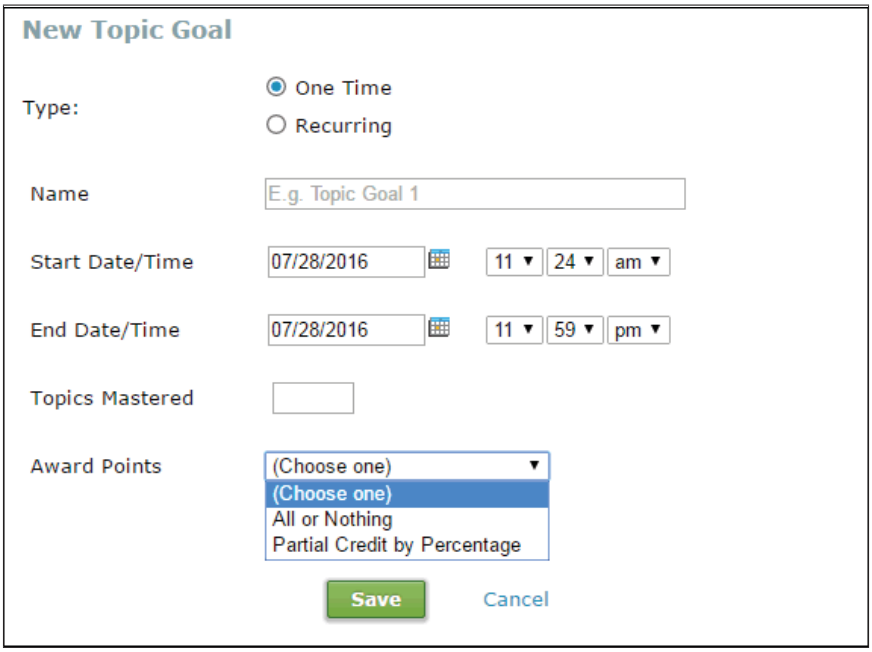


Figure 7.64: Topic Grade Settings

Pie Mastery

The Pie Mastery category is used to grade students based on their mastery of a percentage of the ALEKS Pie by a specified due date and time (Fig. 7.62).

Time

The Time category is used to grade students based on the amount of minutes/hours spent in ALEKS for a specified date range (Fig. 7.63).

Topic

The Topic category is used to grade students based on the number of topics mastered in the ALEKS Pie for a specified date range (Fig. 7.64).

7.6 Gradebook

The Gradebook records student grades for assignments in the categories selected in the Gradebook Setup. The Gradebook is disabled by default but can be enabled by the instructor for each class.

To enable the Gradebook, do the following:

1. Select a class.
2. From the **Gradebook** sub-navigation, click on **Gradebook Setup**.
3. Click on **Enable the Gradebook for This Class**.

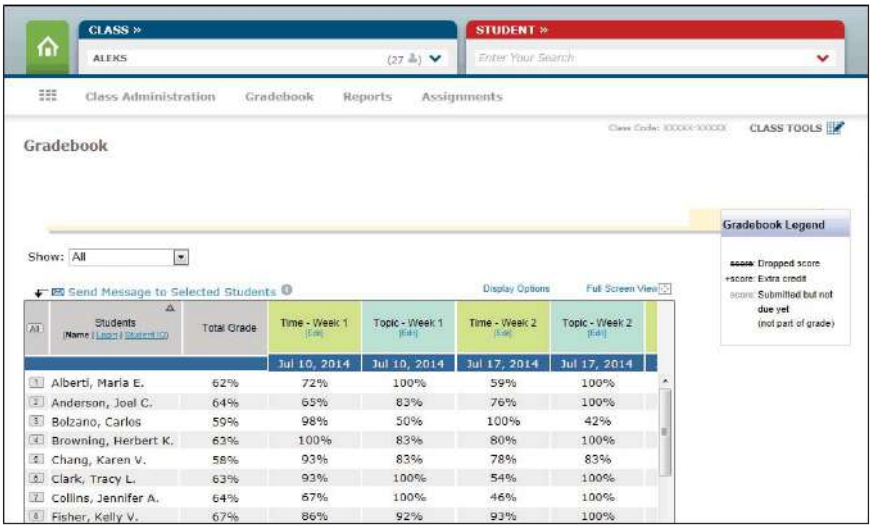


Figure 7.65: Gradebook

Alternatively, the Gradebook can be enabled from the **Class Summary** page. Once on the **Class Summary** page, locate the **Gradebook** section, and click on **Enable Gradebook**.

The following types of assignment categories can be used by the Gradebook:

- Pie Progress
- Time
- Topics
- Objectives (Chapter Completion)
- Scheduled Assessments
- Quizzes
- Tests
- Homework
- External Assignments

When configuring the Gradebook for a class, the instructor can choose any selection of these assignments. Also, it is possible to use these kinds of assignments and not include them in the Gradebook configuration; for example, the instructor may choose to set up a series of Homework assignments for the class to prepare students for Quizzes or Tests, but not make the Homework assignments part of the grade.

The External Assignment category assignments require specific components (goals or assignments) to be added via the Gradebook Setup page, in order to be included in the gradebook (Secs. 7.5.12 and 7.6.5).

NOTE. The full benefit of the ALEKS Gradebook will be obtained if the configuration is thought out carefully before the beginning of the class, and then left unchanged while the class is in progress. In particular, if the students have begun to complete assignments, and grades for the assignments appear in the Gradebook, changes to the configuration may be confusing to students when they check their Gradebook data.

7.6.1 Gradebook Interface

To see the Gradebook for a class select **Gradebook** from the sub-navigation menu and then select **Class Gradebook** (Fig. 7.65). Several options are available for this display. By default, all gradebook assignment types are displayed, but the **Show** menu allows the gradebook data to be filtered by assignment type. Each assignment is color-coded by category. If student groups have been set up, gradebook data can be filtered by group.

Send Message to Selected Students

Instructors can send a message to students while viewing the Gradebook without having to navigate to the ALEKS Message Center. The default is to sort students by name, but by sorting on a grade column instructors can send messages to groups of students who have high or low values for that column.

Display Options

Grading information may be displayed in terms of points (based on the points allotted for each category in the Gradebook configuration) or by percentage of the total points possible. A date range can also be set for the display. After making any changes to the display, click the **Update Display** button.

Full Screen View

Click on the link to view the Gradebook in an expanded screen.

Download to Excel

As with other reporting displays in ALEKS, the contents of the Gradebook can be downloaded into an Excel spreadsheet for use outside of ALEKS. It is recommended that you download the Gradebook into Excel on a regular basis in order to have a backup file on hand. This can be useful in the event of a discrepancy or if edits need to be made to student scores.

Student Information

Students are listed in the left-hand column; there are also options to show their ALEKS Login Names or student ID numbers instead of names.

Total Grade

The Total Grade column will be displayed when **All** is chosen from the **Show** drop-down menu. This column computes the student's current grade based on assignments completed or for which the due date has passed. This grade predicts the student's grade for the class based on any work completed to date. For example,

if the class is half completed and a student has 70% in this column, it means that if the student's work continues at the same level for the remainder of the class, the final grade will be around 70%. If a particular category (e.g. Quizzes) is chosen rather than **All,** a total grade (Quiz Grade) will be displayed, based only on that category of assignments. If a date range is specified other than the entire period of the class, the display will use only the assignments whose dates fall within that range.

Student Grades

In the Gradebook, student grades for specific assignments are ordered chronologically by due date. As the students complete the assignments, values are inserted into the corresponding cells as follows:

Empty cells
The student has not completed the assignment.

Zero
The due date has passed.

Grey
the student has completed the assignment but the due date has not passed (the value will not be used in computing the current **Total Grade)**.

For some types of assignments (e.g., Homework with multiple attempts), students have the option of redoing or retaking the assignment, so that values in grey may change before the due date.

Clicking on the [**Edit**] link in any column, for a specific assignment, will open a box containing options to view and edit student results.

7.6.2 Gradebook Setup

After selecting a class, select **Gradebook** followed by **Gradebook Setup** to access the setup page. **Gradebook Setup** can also be found by selecting **Class Administration** followed by **Class Summary**.

For each of the grading assignment categories, a category weight percentage can be assigned (Fig. 7.66). To include that category in the Gradebook, you must set this percentage greater than 0. The total percentage weight of all categories combined must equal 100%, or an error message will display when attempting to save the Gradebook Setup page.

Assignment Weights

The assignments within each Gradebook category can also have different weights. The weight of each individual assignment can be assigned by clicking on the **Edit** link found below the category name. When you are entering the weight for each assignment, there is a toggle link to **Show or Hide** the details of the weight of each assignment. These details include the percent value of each assignment within the category and the percent value as a component of the total grade (Fig. 7.67).

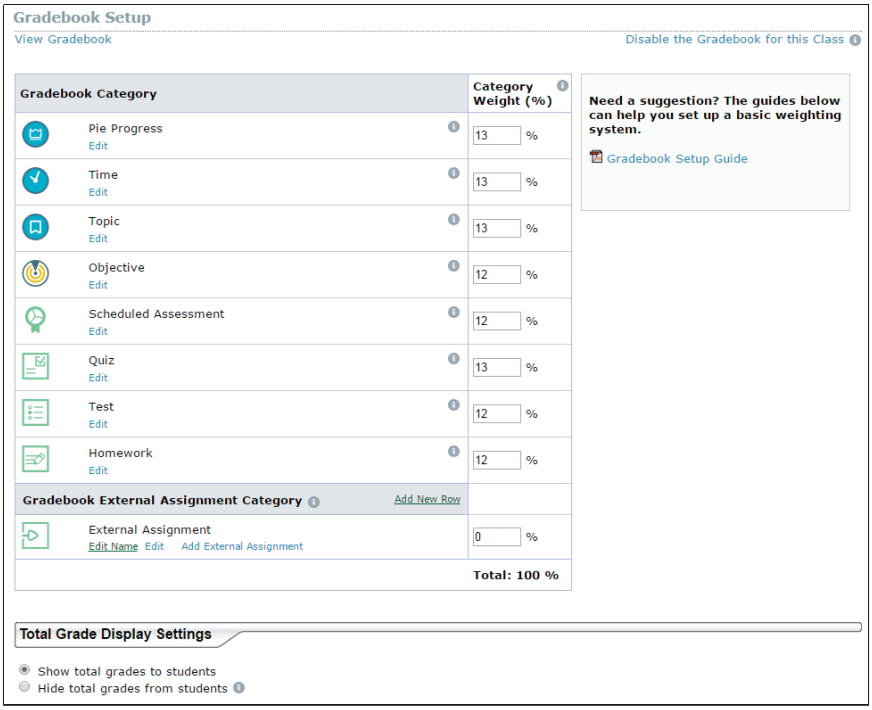


Figure 7.66: Gradebook Setup

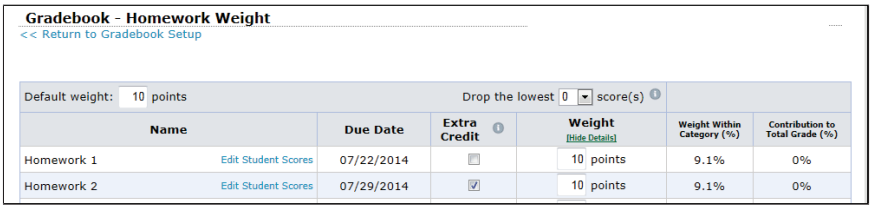


Figure 7.67: Assignment Weights

Dropping Low Scores

On the assignment weighting page there is a drop-down menu that allows the instructor to specify how many (if any) of the lowest scores will be dropped from the gradebook (Fig. 7.67). Only regular (non-extra credit and non-zero weight) assignments can be dropped. Suppose that 10 ALEKS Quizzes have been set up for the term and the 2 lowest quiz scores have been set to be dropped. ALEKS will not drop any scores until the 9th Quiz has been completed by the students. At that time, the lowest of the 9 scores is determined, and it is dropped when ALEKS computes the overall score for the Quiz category in the Gradebook. When the 10th Quiz has been completed by the students, the 2 lowest of the 10 scores are determined, and they are dropped when ALEKS computes the overall score for the Quiz category in the Gradebook. **ALEKS recommends that you wait until the end of the class to drop the lowest score(s)**.

Extra Credit

Also on the assignment weighting page, there is a check box that can be used to designate the assignment as extra credit (Fig. 7.67). Students who do not complete the extra credit assignment will not be penalized. (Students who do complete the assignment can only improve, never hurt, their grades.) Extra credit assignments are differentiated from regular assignments in the gradebook by a + next to the score.

NOTE. In ALEKS, assignments not assigned to the entire class are automatically flagged as Extra Credit. This ensures that the assignment to only some students will not hurt the grades of other students.

Assessments

In the Gradebook, assessments refer only to Scheduled Assessments; results from other assessments cannot be used in the Gradebook (Sec. 4.3).

Each Scheduled Assessment in the class can be assigned a goal percentage. The **Goal** is the percentage of the class that grades on the assessment are based on. For example, midway through the class, the goal for an assessment might be set at 50%. Then, a student who assessed as knowing 40% of the entire class would get a score of 80% on the assessment. (Meeting or exceeding the goal percentage gives a score of 100% for the assessment.)

Disable Gradebook

The Gradebook can be disabled by clicking **Disable the Gradebook for this Class** on the **Gradebook Setup** page. Disabling the Gradebook for the class will hide the class Gradebook from you and the students in the class. The Gradebook can be reactivated at any time by clicking on the link **Enable the Gradebook for this class** link.

Total Grade Display Settings

By default, the option **Show total grades to students** will be selected in this section of the Gradebook setup. If desired, you can elect to hide the total grades from students by selecting **Hide total grades from students.**

7.6.3 Grading Scale for Total Grade

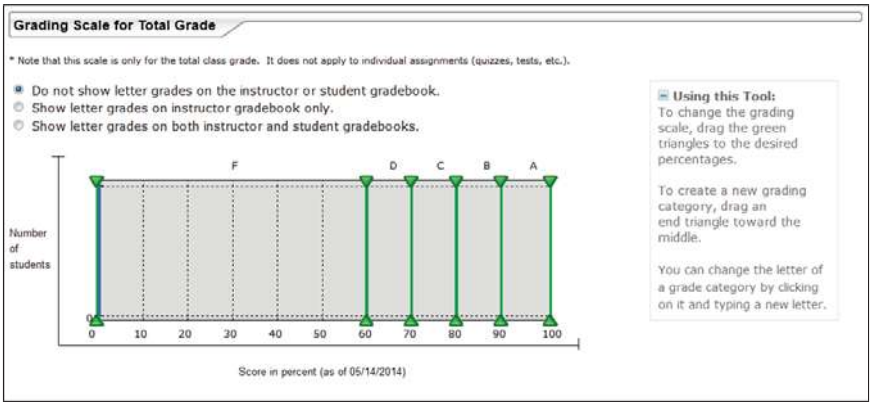


Figure 7.68: Grading Scale for Total Grade

This feature allows the instructor to assign a grading scale for the total class grade (Fig. 7.68). By default, no grading scale is used, and the students see only a percentage score. The default grading scale is a conventional scale (A, B, C, etc.), using standard percentage breakpoints. The sliders on the scale can be moved and renamed, and you can add or remove sliders to set practically any scale desired. The labels on the sliders, which are used as grade notations, are limited to a few letters or numbers; to set the label, click on the existing label, type in the new label, then press your **Enter** key.

Use the options above the grading scale to set whether the scale will be used or not, and who will see it. Even if the scale is not used, the graph will be populated as a histogram, giving a useful illustration of the distribution of students' overall scores.

7.6.4 Chapter or Objective Completion and the Gradebook

Scores for the Objective category will be calculated in one of the following two ways, based on the class setup:

Chapter or Objective completion with End Dates

Each chapter or objective has a due date by which students are expected to complete the material in that unit. If a student completes the chapter or unit before the due date, a grade of 100% is entered into the student's cell for that assignment. The score will appear in grey, and it will not be used to compute the Total Grade until the due date has passed. It is not, however, subject to change; even if the student loses material in a subsequent assessment, the 100% score will remain. If the student does not complete the unit by the due date, the percentage of goal topics that the student did complete will appear in the cell as the student's score. **If multiple objectives have the same end date, they will be treated as a**

single objective, and there will only be one column for these objectives in the gradebook.

Chapter or Objective completion without End Dates

All chapters or objectives have a single end date by which students are expected to master all objectives. This feature includes a mastery level completion percentage for the objectives. The mastery level completion defaults to 90% but can be adjusted. Students must master this percentage of the topics in an objective before they can advance to the next objective. The student's score is entered into the student's cell for that assignment and will appear in grey until after the end date has passed. When students meet the mastery level they will be moved to the next objective and will be able to access the remaining unmastered topics from all previous objectives. The **Total Grade** column will not include the chapter or objective assignment score until after the end date for the class has passed (Sec. 7.4.6).

Students using ALEKS have access to Gradebook information for their own work, similar to the information described in this chapter.

7.6.5 External Assignments

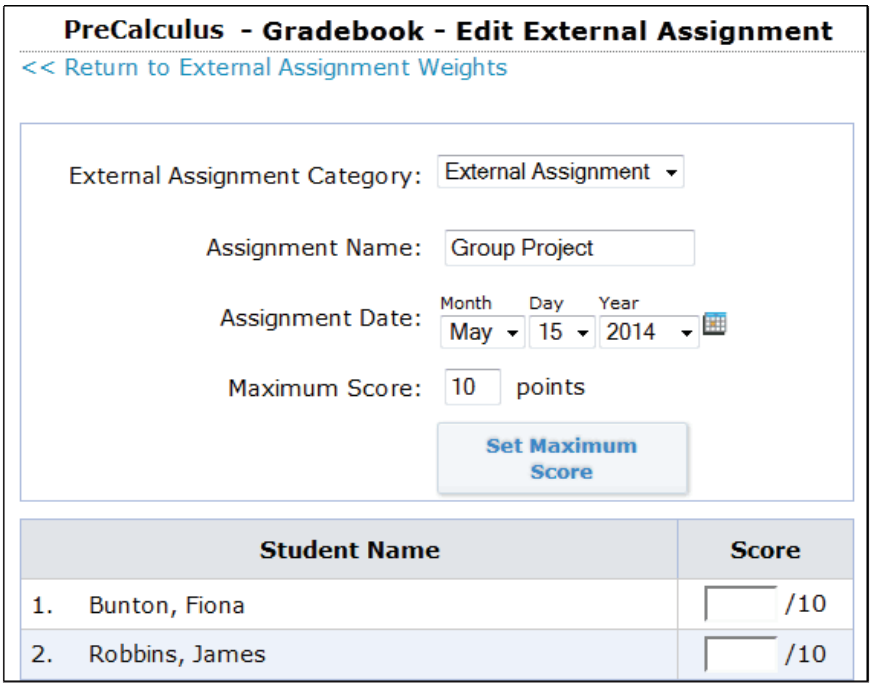


Figure 7.69: External Assignment Setup

The External Assignment feature is ideal for including student scores on assignments or

exams completed outside of ALEKS. These assignments must be added to the Gradebook in the Gradebook Setup page.

External Assignments can be created in **Gradebook Setup** as follows (Fig. 7.69):

1. Click on **Add External Assignment** in the External Assignment Category.
2. Enter the name of the assignment.
3. Adjust the assignment date if necessary.
4. Assign a maximum score.
5. Click on the **Set Maximum Score** button.
6. Enter student scores either by typing or paste from a spreadsheet and click **Save**.

Instead of recording all non-ALEKS assignments in the catch-all **External Assignments** category with a single weighting, you can create an unlimited number of External Assignment categories, each with its own weight. New External Assignment categories can be created in **Gradebook Setup** as follows:

1. Click on the **Add New Row** link in the Gradebook External Assignment Category.
2. Enter a name for the category.
3. Assign an overall weight to the category and click **Save**.

If you wish to delete an external assignment category, either delete any assignments in the category, or set the category weight to zero.

7.6.6 Adjust Student Scores

Instructors can adjust student scores for ALEKS assignments and external assignments directly through the Gradebook, as follows:

1. Click on **Class Gradebook**.
2. Click on **Edit** for the assignment you want to adjust.
3. Click on **Edit Student Scores**.
4. Edit the scores as necessary.
5. Click the **Save** button.

7.6.7 Gradebook Log

From the class **Gradebook** sub-navigation, select **Gradebook Log** to access this feature (Fig. 7.65). The Gradebook Log is a record of any adjustments made to student scores in the ALEKS Gradebook. Adjustments may be made to Gradebook scores

by you, the primary instructor, teaching assistants, or other instructors who have edit privileges for the class Gradebook. This feature can also be used to monitor adjustments made to the Gradebook by anyone with Share Class Access (Sec. 7.4.32).

7.7 QuickTables

This menu allows instructors to manage their QuickTables settings, and QuickTables-related features including creating tables, assessments, worksheets, quizzes, and viewing reports. For full details about QuickTables, see Chap. 6.

7.8 Student Administration

Student Administration allows the instructor to manage individual student accounts and progress. Selecting a student account will display the student-related menus and actions in the sub-navigation.

7.8.1 Account Summary

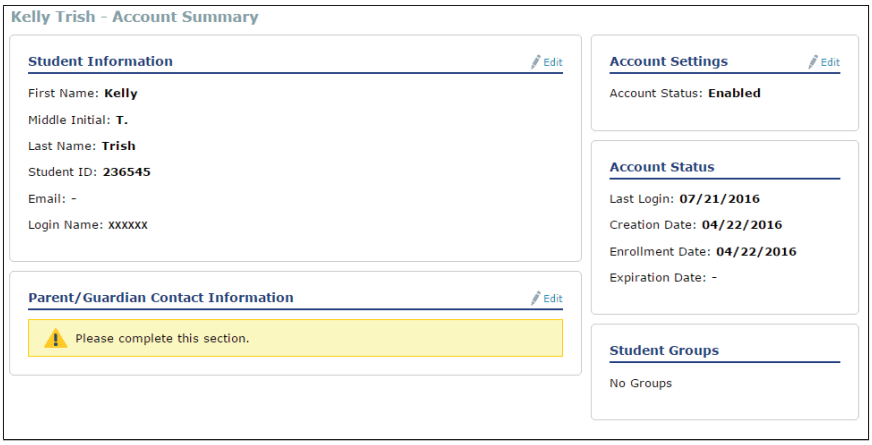


Figure 7.70: Student Account Summary

Student **Account Summary** allows instructors to make corrections or changes to a student's name, email address, ID, password, and account status (Fig. 7.70). For each student, instructors can add a parent/guardian contact information. In addition, instructors can view Student Groups and Share Class Access information (Sec. 7.4.32). To edit a student's account preferences, click **Edit** next to the corresponding category.

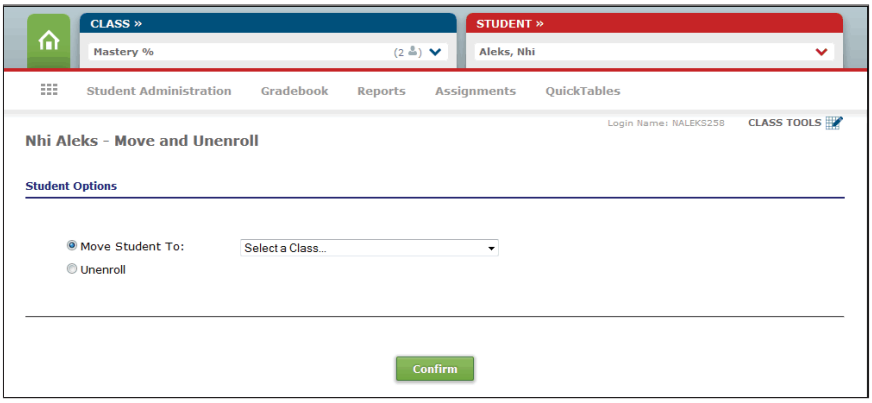


Figure 7.71: Move and Unenroll Student

7.8.2 Move and Unenroll Student

Selecting a student account and clicking on **Student Administration** displays **Move/Unenroll** (Fig. 7.71). This feature allows you to move or unenroll the selected student from the class.

Move Student

To move a student from the current class to another class:

1. Select **Move Student To:**.
2. Use the drop-down menu to select a new class.
3. Click on **Confirm** to save your action.

Unenroll Student

To unenroll a student from the current class:

1. Select **Unenroll**.
2. click on **Confirm** to save your action.

To move or unenroll multiple students at once, see Sec. 7.4.36.

NOTE. See Sec. 7.4.31 for more information on what happens to students' records when they are moved to a new class.

7.8.3 Student Cleanup Tool

Selecting a student account and clicking on **Student Administration** displays **Cleanup Tool**. This feature allows you to clear statistics for an individual student. For the class level Cleanup Tool, see Sec. 7.4.35.

7.8.4 Student Gradebook

Selecting a student account and clicking on **Gradebook** displays the following information:

- Student Gradebook information
- Class Gradebook (Sec. 7.4.29)

7.8.5 Student Reports

Selecting a student account and clicking on **Reports** displays the following information:

- ALEKS Pie (Sec. 7.3.8)
- Progress (Sec. 7.3.18)
- Time & Topic (Sec. 7.3.21)
- Knowledge Per Slice (Sec. 7.3.22)
- Assignments (Sec. 7.3.23)
- Objective (Sec. 7.3.11)
- Time Line
- State Standards (Sec. 7.3.26)
- QuickTables (Sec. 6.3)

All reports listed here are links to other parts of the Instructor Module.

7.8.6 Student Assignments

Selecting a student account and clicking on **Assignments** displays the following options (Fig. 7.72):

- Edit Extensions (Sec. 7.8.7)
- Worksheet (Sec. 7.8.8)
- Class Assignments (Sec. 7.5.1)
- Request Assessment (Sec. 7.8.9)
- Cancel Assessment (Sec. 7.8.10)

Please see each section referenced for more details.

7.8.7 Edit Extensions

Selecting a student account and clicking on **Assignments** displays **Edit Extensions**. Instructors can give individual students extensions for class objectives and Assignments, which includes Scheduled Assessments, Homeworks, Tests, and Quizzes.

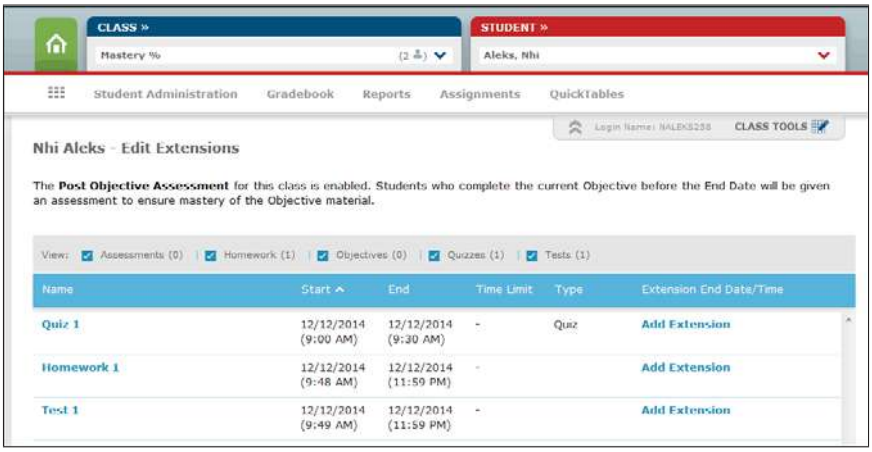


Figure 7.72: Edit Extensions

7.8.8 Student Worksheets

Selecting a student account and clicking on **Assignments** displays **Worksheet**. You can create a new worksheet or view previously created worksheets for the student. For a description of the Worksheets feature, see Sec. 7.4.25.

7.8.9 Request Assessment

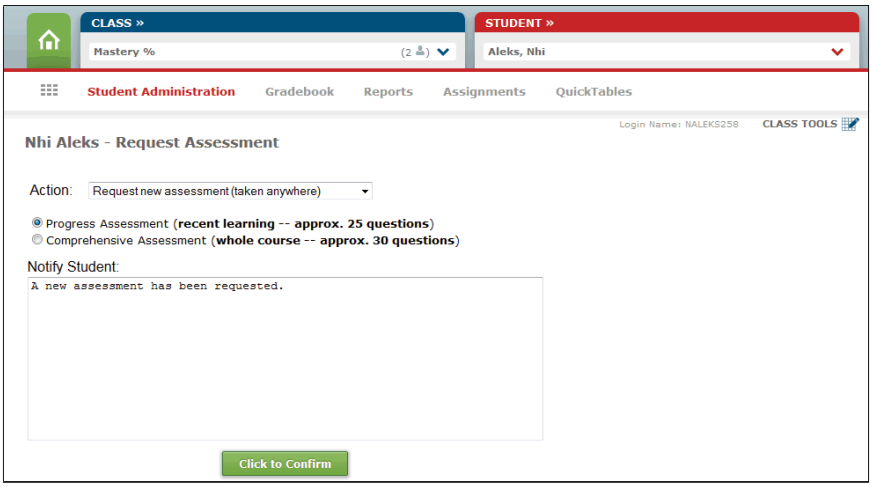


Figure 7.73: Request Assessment

Selecting a student account and clicking on **Assignments** displays **Request Assessment** (Fig. 7.73). This feature allows you to request a "Progress"-style assessment or a "Comprehensive"-style assessment for a single student, effective immediately. Via the

drop-down Action menu, you can choose between **Request new assessment (taken in Institution only)** or **Request new assessment (taken anywhere)**. If your school has IP addresses in place at the school level, you can restrict the assessment to be taken on campus by selecting the option marked "Institution Only." The comment box allows the instructor to type a message that the student will see when they log in to take the assessment.

7.8.10 Cancel Current Assessment

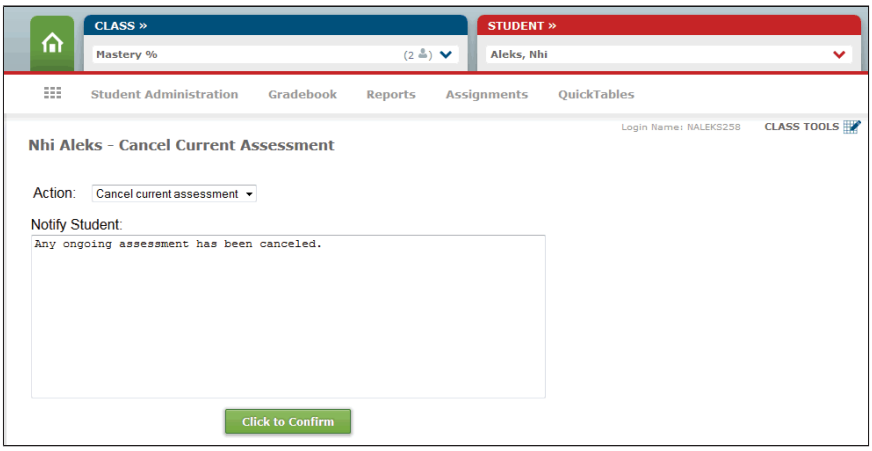


Figure 7.74: Cancel Current Assessment

Selecting a student account and clicking on **Assignments** displays **Cancel Current Assessment** (Fig. 7.74). This feature allows you to cancel any current or pending assessment for the student, until midnight of that day. An automatic reassessment that is cancelled in this way will become active again on the following day.

7.8.11 Student QuickTables

Selecting a student account and clicking on **QuickTables** displays the following options:

- Worksheets (Sec. 7.8.12)
- Progress Report(Sec. 6.3.1)
- Quiz Report (Sec. 6.3.2)

Please see each section referenced for more details.

7.8.12 Student QuickTables Worksheet

Selecting a student, clicking on **QuickTables**, and then **Worksheet** displays the following options:

- Select a table from the list (if tables have been created) to create a QuickTables Worksheet for that student.
- View a previously created Worksheet for that student.

7.9 Administrator Features

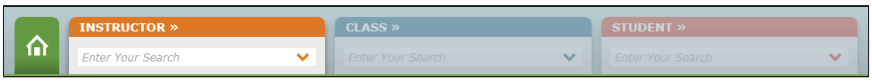


Figure 7.75: Three levels of hierarchy

ALEKS administrators have access to three account levels: instructor, class, and student (Fig. 7.75). This section will focus on the Instructor level. The class and student levels are described earlier in detail (Sec. 7.1.2). Administrators begin with the **INSTRUCTOR** tab on the far left and then can make selections in the succeeding tabs until the desired level is reached. To move between levels, they need to click on the tab they want to make active again. Features from this menu allow administrators to perform actions such as updating their institution's settings, creating new instructor accounts, and managing all classes and instructors at the institution, creating Master Templates, managing subscriptions, and other features.

7.9.1 Institution Account Summary

Selecting **Institution Administration** and clicking **Account Summary** displays the following options:

Account Information

Administrators can modify the state and time zone settings for the institution under the Account Information section. Usually, these are set correctly when the institution account is first created and do not need to be changed. The institution and billing address can also be modified in this section.

Important Contacts

Administrators can add important contacts such as the school's Billing Contact, Technical Contact, Implementation Specialist, and Course Product/Feature Upgrade Contact under this section.

Settings

The Institution Network Information section allows you to enter an IP range or Internet Protocol for the computers in your institution. They willl be used if you wish to restrict student access to assessments, Homeworks, Quizzes or Tests to the campus network (Sec. 7.5.3). Single IP School Assignment will require students to complete all assessments from the same IP address where they began them. This reduces the flexibility of access that students usually have to their ALEKS accounts, but in some cases it may be desired. Administrators can select to **Show student passwords on the Class Roster** and **Show Cartoon** under Institution Settings.

Incoming & Exiting

The Incoming and Exiting Student Options allow you to select whether incoming students from a class within the same course family or same course product should pick up where they left off or start fresh with a new Initial Assessment. See Sec. 7.4.31 for more information about this option.

Administrators and Instructors

Administrators can view a list of administrators and instructors under this section. All accounts are regular instructor account types unless they include one of these labels: (A) for Administrator or (TA) for Teaching Assistant. There is a link to the Admin/Instructor Roster under this section.

7.9.2 Schedule Domain Upgrade

ALEKS Corporation periodically releases new versions of its class products. When this occurs, there is an announcement to users explaining the nature of the upgrade, window of time during which users may upgrade, and the default date on which the upgrade will occur if no action is taken. If the school wishes to schedule the upgrade earlier than the default date, the administrator can use this tool to select the desired date.

NOTE. If an update is available, the changes in the upgrade will be described in detail on this page. **Schedule Domain Upgrade** can be found under Institution Administration on the main page.

7.9.3 Instructor Roster

Administrators can view a roster for all instructors at the school by selecting **Instructor Roster** from **Institution Administration**. The Instructor Roster displays detailed instructor information (Fig. 7.76). The roster can be used to manage other instructor's account settings, including permission levels, viewing dashboards, sending messages, and archiving or deleting accounts. Multiple instructor accounts can be updated at the same time through the Instructor Roster, and individual instructor accounts can be edited through each instructor's Account Settings from their Account Summary. There are features in the Instructor Module that can be used to manage ALEKS subscriptions,

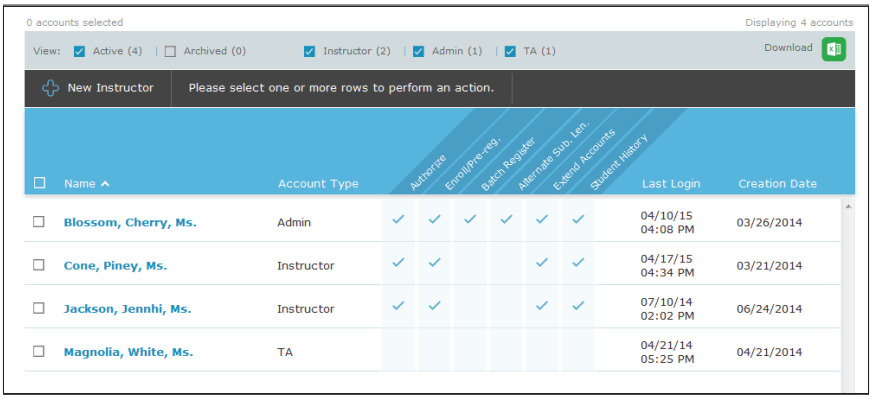


Figure 7.76: Instructor Roster

register students, and manage student accounts. Some features consume purchased ALEKS subscriptions; therefore, administrators can limit instructors' access to these features by enabling or disabling permissions per Instructor. Edit Multiple Permissions can be done from the Instructor Roster under Institution Administration. To edit a specific instructors's permissions, select the instructors's account summary.

NOTE. Archiving can be used to simplify the Instructor Roster so that only current instructors appear in the roster. Archived accounts can be accessed and un-archived at any time; archiving does not impact the instructors' ability to access their accounts.

7.9.4 Create New Instructor Account

Frequently, instructor accounts are created by ALEKS Corporation for the school. Administrators, however, are able to create them independently by selecting **Institution Administration** and clicking **New Instructor**. Note that new instructors may be set up with administrator privileges.

7.9.5 Subscription Management System

Administrators can monitor the number of available subscriptions for student registration. When subscriptions are purchased at the district level, the Administrator can move subscriptions between institutions, put subscriptions on hold, or move subscriptions from one institution to another for their districts and schools through the Subscription Management System (SMS). District administrators will see subscriptions for the district and for schools within the district.

Using the SMS system, school administrators can put subscriptions on hold at their school. School administrators will see only the subscriptions for their school. To access the SMS, the school administrator clicks **Subscriptions**, and then clicks on **Subscription Management**.

There are three tabs in the SMS:

Subscription Management

The subscription information will be displayed for the district or school. This includes the subscriptions type or length and whether the subscriptions are "Usable Now" or "On hold."

Orders

The Orders tab displays a detailed history of the ALEKS subscriptions purchased at the school or district. The information includes the purchase date, invoice number, subscription type, quota purchased, number used, and number remaining. At the bottom of the screen is a link that administrators can use to send an Excel document to their ALEKS Message Center inbox containing a list of subscriptions used within a specified date range. There is also an option to exclude expired subscriptions from the report.

Activity Log

The Activity Log tab displays the history of subscription movements and holds performed via the Subscription Management tab. Each entry contains detailed information about the action.

7.9.6 Batch Registration

By selecting **Subscriptions** and clicking **Batch Registration**, administrators can quickly create multiple classes and student accounts and register up to 10,000 students at once (See Sec. 3.8). This feature will help administrators to significantly reduce the amount of time they spend registering large numbers of students across many classes. ALEKS will generate new classes and accounts for new teachers and students and register the students in the appropriate classes. A confirmation email will be sent to the administrator and teachers that includes the login names and passwords for the registered students.

NOTE. Only authorized administrators should use Batch Registration. Batch Registration is designed to register large numbers of students and will consume corresponding quantities of ALEKS subscriptions.

7.9.7 Authorize Student Account

When students self-register into classes, this feature allows instructors to authorize the students' registrations in their own classes so that they can begin using ALEKS (See Sec. 3.6). By selecting **Subscriptions** and clicking on **Authorize Student**, administrators can authorize all students at their institution.

7.9.8 Pre-Registration with alternative subscription length

The Enroll/Pre-Register feature allows instructors to register a group of students at the same time for a single class (Sec. 3.7). Students do not need to self-register when instructors use the pre-registration feature. Instructors that have been given permission to the Alternate Subscription Length have additional options to register students using the subscription length assigned to the class or to assign a different subscription length.

7.9.9 Extend Student Accounts

By selecting **Subscriptions** and clicking **Extend Student Accounts**, instructors can efficiently renew student accounts with no action required from students. After the extension, students can continue to use their accounts without interruption.

7.9.10 Administrative Reports

There are a variety of reports available to administrators. These reports help monitor the institution's progress in terms of student and class performance across applicable standards. To access the reports, click on **Reports** and then select a report.

Custom Reports

Is a powerful tool that can help administrators gather important metrics to show how institutions, instructors, and classes are performing in comparison with each other. To access the report, make a selection in each tab until the level of the desired report is reached, click **Reports**, and then click **Custom Reports**. See Sec. 7.3.29 for more details about this feature.

Enrollment/Activity

Shows the total number of students ever enrolled in ALEKS at the institution, and the numbers of students active in the system during the last week, the last month, and the last three months (optionally 12 months). For each of these intervals, it also shows the average number of hours spent weekly by the students who were active in ALEKS.

Class Activity

Shows the number of students who worked in ALEKS or QuickTables each month and the average hours worked each week.

State Standard Report

Details student performance against applicable standards, for all students at the school who have taken an Initial Assessment between specified dates. Additional selection criteria are Mastery Criterion, the percentage used by ALEKS to determine that a standard has been mastered, and the "Hours cut off," the amount of time used to compare two groups of students. For example, if the "Hours cut off" is set to 30 hours, the performance of students who have used ALEKS for less

than 30 hours will be compared with that of students who have used ALEKS for at least 30 hours.

Average Progress Report

Is a more detailed view of campus activity. For each instructor and course, it shows the total number of students ever enrolled, then, for each of the last six full months, the number of students active and the average hours per week spent by active students. (Note that the current month does not appear in this report.)

Server Stats: Page Hits

Presents a graph of page hits over time by users of ALEKS at the school. The "Data Range" menu can be used to set the time period that is graphed. Beneath the graph a range of summary statistics may appear, depending on the time span chosen.

Server Stats: User Hour

Is similar to the "Server Stats: Page Hits" report, but graphs the number of user-hours over time.

7.9.11 Student Roster (Institution Level)

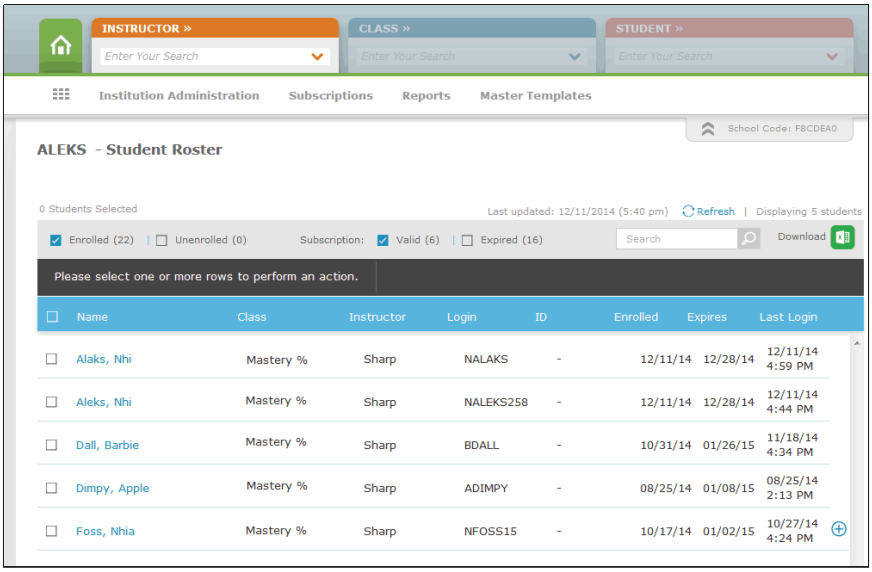


Figure 7.77: Student Roster (Institution Level)

Administrators can view a roster for all students at the school by selecting **Student Roster** from the **Institution Administration**. This default roster setting shows all active classes that students are currently enrolled in (Fig. 7.77). If students have more than one ALEKS class, their classes are grouped under the Class column. Select the "Plus" icon to see more rows.

Administrators can use the following filters to display various groups of students in the roster:

Enrolled
Displays students who are currently enrolled.

Unenrolled
Displays students who are currently unenrolled.

Valid Subscription
Displays students with a valid ALEKS subscription.

Expired
Displays students with an expired ALEKS subscription.

For information about student roster at the Instructor level and Class Roster, see Secs. 7.2.9 and 7.4.36.

7.10 Master Templates

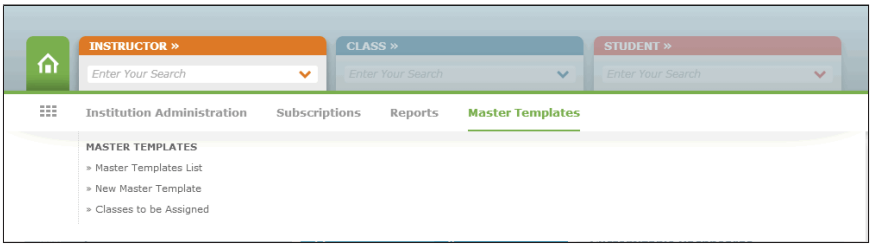


Figure 7.78: Master Template Sub-Navigation

The Master Templates are one of the most powerful features in ALEKS. They provide an efficient way to create and control class instances based on a master class (Fig. 7.78). Instructors who have administrator privileges can create a Master Template, add assignments, and create any number of linked classes based on the Master Template. Instructors teaching the linked classes can edit their individual class settings and assignments and add their own assignments (unless "Lockout" is used; see Sec. 7.10.5). Changes made subsequently to the Master Template will propagate to the linked classes, overriding previous settings as well as any changes made by individual instructors.

7.10.1 Master Templates List

The Master Templates List displays all Master Templates at the institution. When one or more Master Templates are selected, the following actions may become available:

- New Master Template (Sec. 7.10.2)
- Master Template (Class Summary) (Sec. 7.10.4)
- Duplicate (Sec. 7.10.10)
- Archive (Sec. 7.10.11)
- Delete (Sec. 7.10.12)
- Reports (Sec. 7.10.13)

7.10.2 Getting Started

Figure 7.79: New Master Template

Selecting **New Master Template** displays the following options (Fig. 7.79):

Create a New Master Template
: This option allows you to customize your own class settings and assignments. Select this option to go through the Master Template creation wizard (Sec. 7.10.3).

Create a Master Template from an Existing Class
: This timesaving option allows you to copy all class settings and assignments from an existing class into the new Master Template (Sec. 7.10.9).

Duplicate a Master Template
: This timesaving option allows you to copy all class settings and assignments from an existing Master Template into a new one (Sec. 7.10.10).

After the Master Template is created, administrators can view it under the the Master Templates List.

7.10.3 Master Template Basic Settings

Clicking on **Create a New Master Template** displays the following basic settings:

Master Template Basic Information

- Select the ALEKS Course Product for the template. The ALEKS Course Product should not be changed after the class has begun, as doing so will be disruptive to the students' learning and to the class reports and records.
- Select a **Grade**.
- The Master Template is required to have a name; this name can be the name appearing in your institution's class catalogue or anything else you wish. The Master Template name will be a part of the linked classes' names.
- Class Dates are used to configure the Class Calendar, and should include the entire period of time that the students will be using ALEKS. All linked classes created with this Master Template will have the same Start and End dates. The option to automatically archive the Master Template is also available in this step.
- Choose a **Subscription Length**.

QuickTables

QuickTables may be added to the template during this step or at a later time. For complete details about QuickTables, see Chapter 6.

Class Specific Settings

These are specific settings that apply to this class template, such as providing ALEKS graphing calculator functionality.

To edit the Master Template Basic Information and Course Specific Settings sections at a later time, select **Master Template List**, select the desire Master Template, and then select **Class Summary**, followed by **Edit** next to the Master Template Information section.

Adminstrators will click **Create Master Template Now** to generate the template.

On the page that follows, Administrators have the following choices:

- **Continue to Master Template Summary** (Sec. 7.10.4) to view setup details; or select
- **Customize This Master Template** to set objectives, edit content, or integrate a textbook. For complete details, see Secs. 7.4.4 and 7.4.5.

7.10.4 Master Template (Class Summary)

The Master Template Summary displays all settings and options for the template. Administrators can view and edit any section by selecting **Edit**.

The available options are:

- Master Template Information (Sec. 7.10.3)
- Syllabus (Sec. 7.4.16)

- Standards (Sec. 7.4.17)
- Class Content (Sec. 7.4.18)
- Class Options (Sec. 7.4.19)
- QuickTables Settings (Sec. 7.4.26 and Chap. 6)
- Implementation Information (Sec. 7.4.27)
- Resources (Sec. 7.4.30)
- Lockout Options (Sec. 7.10.5)
- Gradebook (Sec. 7.4.29)
- Assignments (Sec. 7.10.6)
- Linked Classes (Secs. 7.10.7 and 7.10.8)
- Incoming and Exiting (Sec. 7.4.31)

7.10.5 Lockout Options

This feature allows administrators to prevent instructors from editing the class content or assignments in classes linked to the Master Template.

Class Content

If this option is selected, instructors of linked classes cannot edit the class content for their linked classes. Additionally, if administrators use textbook integration or objectives with the Master Template, instructors of linked classes can edit the due dates for each objective, but not edit the content within an objective.

Assignments

If this option is selected, instructors of linked classes cannot edit or delete their assignments linked to the Master Template. They can adjust the dates for these assignments and also create additional assignments for the linked classes.

Incoming and Exiting Student Options

If this option is selected, instructors of linked classes cannot edit Incoming and Exiting Student Options.

7.10.6 Create Assignments in Master Template

To create assignments in a Master Template:

1. In the **Master Templates List**, click on the name of the template to view the Master Template Summary. Alternatively, you can check the box next to the template and then click **Class Summary**.
2. Locate the **Assignments** section, and click **Edit**.

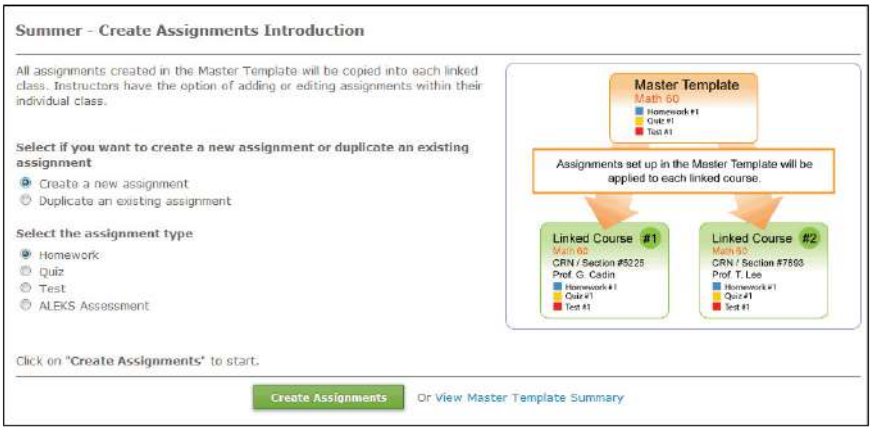


Figure 7.80: Create Assignments in Master Template

At the **Create Assignments Introduction** page, you will see two options for creating an assignment (Fig. 7.80):

Create a new assignment
: This option takes you through the ALEKS assignment creation process (Sec. 7.5.2).

Duplicate an existing assignment
: This option allows you to duplicate an existing assignment (Sec. 7.5.1).

Select the assignment type that you wish to create or duplicate: Homework, Quiz, Test, or ALEKS Assessment.

After creating assignments, you will see an Assignment list with the assignments created in the Master Template. You will also have options to modify or add additional assignments on this page. For more complete details about the Assignments List, see Sec. 7.5.1.

NOTE. If administrators want to create External assignments in the Master Template, they can do this from the **Gradebook Setup** page. Only the assignment name and date can be set at the Master Template level; the students' grades and maximum point values are set at the linked class level.

7.10.7 Create Linked Classes

After you have defined the Master Template settings, content, and created assignments, you can create linked classes and assign instructors to these classes (Fig. 7.81). A linked class contains the same content and settings as the Master Template. Both the administrator and the instructor assigned to the class will receive a message in their ALEKS Message Center containing important information about the linked classes.

To add linked classes:

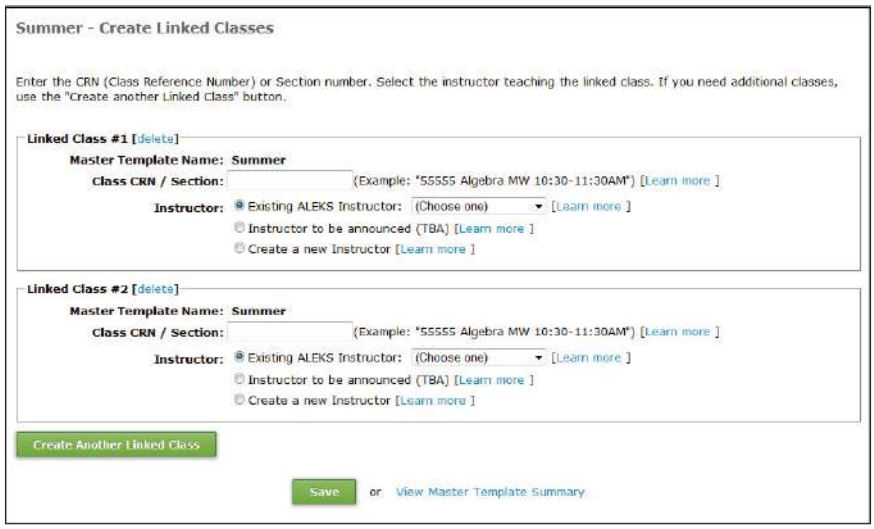


Figure 7.81: Create Linked Classes

1. In the **Master Templates List**, click on the name of the template to view the Master Template Summary. Alternatively, you can check the box next to the template and then click **Class Summary**.
2. Locate the **Linked Classes** section and click **Edit**.

On the **Create Linked Classes** page, enter the name of the Class CRN/Section and assign an instructor to the individual linked class. (The name of the linked class will consist of the name of the template plus the name of the CRN/Section.) There are three options for the "Instructor" field:

Existing ALEKS Instructor
: Select this option and then use the drop-down menu to select the name of the Instructor teaching the linked class.

Instructor to be announced (TBA)
: Select this option if the name of the instructor is unknown. The linked class can be assigned to an instructor at a later time (Sec. 7.10.8).

Create a new Instructor
: Select this option if the instructor does not have an existing ALEKS account. Enter the title, first and last names, and e-mail address of the instructor teaching the linked class. ALEKS will send an email message containing login information to the instructor. If an email address is not provided, the administrator will need to edit the instructor account, change the password, and send it to the instructor at a later time (Sec. 7.2.1).

A maximum of 15 linked classes can be created at a time. To add more linked classes, repeat the steps.

Once saved, you will receive a confirmation and arrive at the Linked Class List page with the linked classes that have been created. You can create another linked class by selecting **New Linked Class**, edit the linked classes by clicking on the CRN/Section name of each class, or complete the Master Template set-up process by clicking **I am done creating linked classes**.

NOTE. There is no limit on the number of linked classes you can associate with a Master Template. The interface allows you to link up to 15 at a time: to add more than 15 linked classes, just return to the Master Template Summary page, locate the Linked Classes section, and select **Edit**. On the Linked Class List page, select **New Linked Class**.

7.10.8 Classes to be Assigned

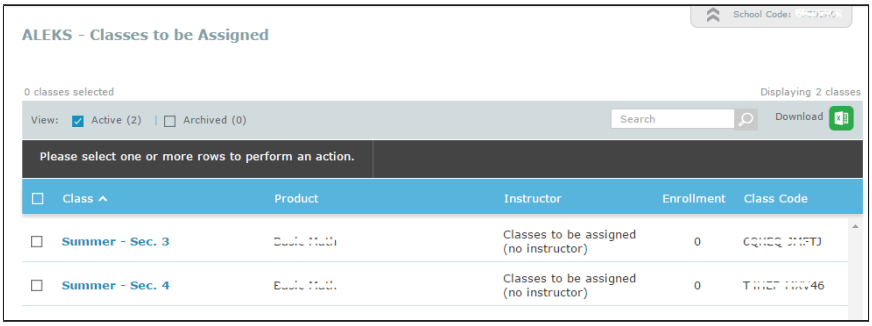


Figure 7.82: Classes to be Assigned

The **Classes to be Assigned** page contains linked classes that were set to "Instructor to be announced (TBA)" (Fig. 7.82).

To assign a linked class to an instructor:

1. From the **Master Templates** sub-navigation, select **Classes to be Assigned**.
2. Check the box next to the name of the linked class that needs an instructor.
3. Click **Move**.
4. Select the instructor who is going to teach the class.
5. Click **Apply**.
6. Click **Confirm**.

Once a linked class has been assigned, the instructor assigned to the class will receive a message about the new class information in their ALEKS Message Center. The Master Template name will be part of the linked Class Name; instructors can view this information or edit the information by clicking on **Class Summary**.

7.10.9 Create a Master Template from an Existing Class

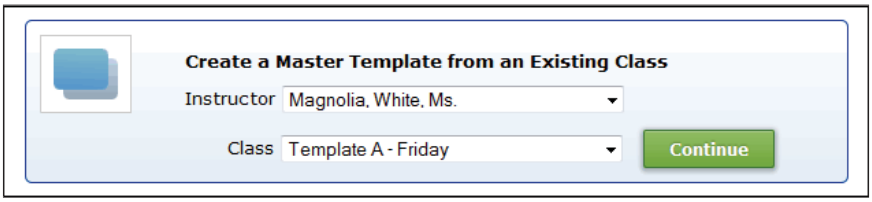


Figure 7.83: Create a Master Template from an Existing Class

After selecting **Create a Master Template from an Existing Class**, use the drop-down menu to select an instructor and a class. Then, click on **Continue** Fig. 7.83).

On the page that follows, fill in the new Master Template information, including Name, Start Date/End Date, and Subscription Length. At this time, you also have the option to select the settings you wish to copy into the new Master Template. Click **Save** to create the template.

If there are assignments in the previous template, you will arrive at the **Edit Due Dates** page to adjust the start and end dates to correspond to your new Master Template or select **Continue to Master Template Summary**.

7.10.10 Duplicate a Master Template

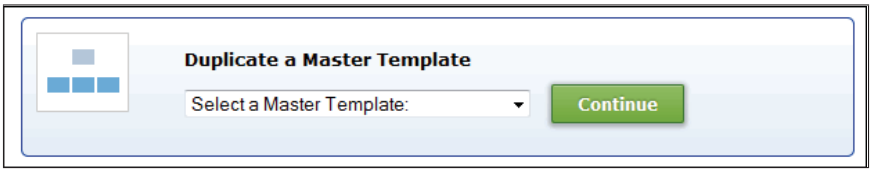


Figure 7.84: Duplicate a Master Template

After selecting **Duplicate a Master Template**, use the drop-down menu to select a Master Template, and click **Continue** (Fig. 7.84).

On the page that follows, fill in the new Master Template information, including Name, Start Date/End Date, and Subscription Length. At this time, you also have the option to select the settings you wish to copy into the new Master Template. Click **Save** to create the template.

If there are assignments in the previous template, you will arrive at the **Edit Due Dates** page to adjust the start and end dates to correspond to your new Master Template or select **Continue to Master Template Summary**.

Duplicating a Master Template does not copy the linked sections (nor would you generally want to). Administrators will need to link sections from the **Master Template Summary** page.

7.10.11 Archive Master Templates

The **Archive** feature allows administrator to simplify the list of Master Templates without removing templates from the system.

To archive a Master Template:

1. From the **Master Templates** sub-navigation, select **Master Templates List**.
2. Check the box(es) next to the Master Template(s) you wish to archive.
3. Select **Archive**.
4. Click **Confirm** to save the action.

This will hide the archived Master Template(s) from the list.

Please note that archiving the Master Template does not archive its linked classes. Individual instructors will need to archive their own linked classes from the **Class Summary** page (Sec. 7.4.15) or the **Class List** page (Sec. 7.4.34).

7.10.12 Delete Master Template

Administrators can delete a Master Template if no linked classes are set up.

To delete a Master Template:

1. From the **Master Templates** sub-navigation, select **Master Templates List**.
2. Check the box next to a Master Template you wish to remove.
3. Select **Delete**.
4. Click **Confirm** to proceed with the deletion.

This will remove the selected template from the list.

7.10.13 Master Template Reports

Administrators can run reports quickly and easily at the Master Template level using the Master Template Reports feature. This feature allows administrators to generate a single report for all classes linked to a Master Template.

For each Master Template in use, Administrators can select from a variety of reports. ALEKS will generate the report and email it to the administrator as an Excel attachment. The report will include the students' names, instructors' names, class sections, and the relevant report data.

To access the Master Template reports:

1. From the **Master Templates** sub-navigation, select **Master Templates List**.
2. Locate the Master Template you wish to run reports for.
3. Under the **Reports** column, select the paper-like icon for the pre-built Master Templates Reports options. (Or, select the tool-like icon to create a Custom Report; Sec. 7.3.29.)
4. You will see a list of available reports. Click on the link of the report you would like to generate.
5. Select the **Send Me the report** button.

At the end of the process, you will see a confirmation message letting you know that the request is being processed.

NOTE. Blank Excel attachments will be generated if linked classes to a Master Template do not contain students.

7.10.14 Effects of Editing a Master Template

The effects of editing a Master Template are as follows:

- Edits to the Master Template will apply automatically to all linked classes under the Master Template.
- A change made to the Master Template will override changes made in individual linked classes. If something was changed in the course settings on the Master Template, then that specific change is made to all linked classes. Changes are modular. Changing one part in a module will save all settings of that particular module. For example, if something is changed in the template basic settings, all settings from that part of the wizard are saved and will override the linked courses. If a due date is changed in a homework assignment, clicking on the **Save** button will resave all settings for that assignment.
- Instructors of linked classes will receive a message in their ALEKS Message Center (Inbox) when an administrator has made a change to the Master Template.

7.11 District Features

Figure 7.85: Tab Indications

In addition to all the features that are available to school administrators, district administrators have access to the features described below. District administrators have access to four levels of account: institution, instructor, class, and student (Fig. 7.85).

7.11.1 Account Summary

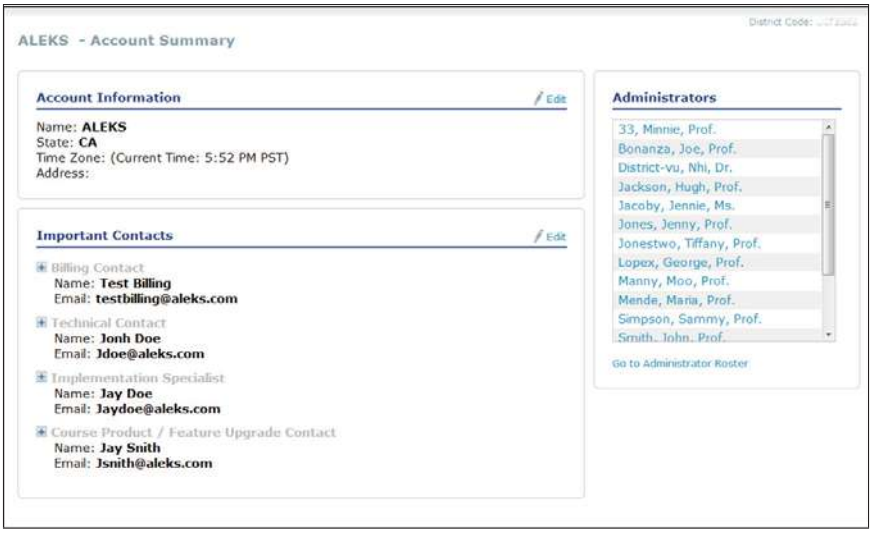


Figure 7.86: Account Summary

Selecting **Institution Administration** and then **Account Summary** displays a page containing account settings and important contact information for the district (Fig. 7.86).

7.11.2 Administrator Roster

District administrators can view a roster for all administrators in the district by selecting **Administrator Roster** from **Institution Administration**. The administrator roster displays administrator information (Fig. 7.87). This roster can be used to manage administrator accounts, including viewing their dashboards, sending messages, and moving and unenrolling students. Many functions are streamlined on this page for updating and managing accounts efficiently.

7.11.3 New Administrator

New district administrator accounts can be created through this feature (Fig. 7.88).

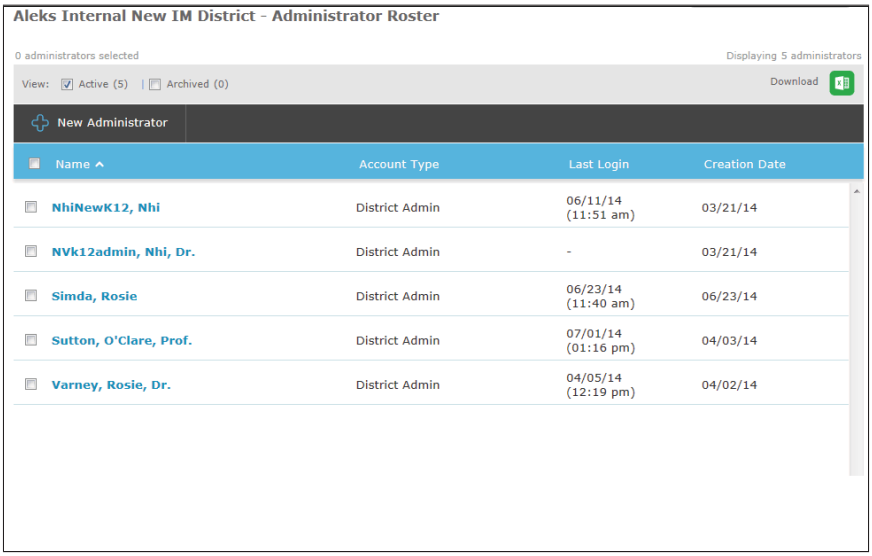


Figure 7.87: Administrator Roster

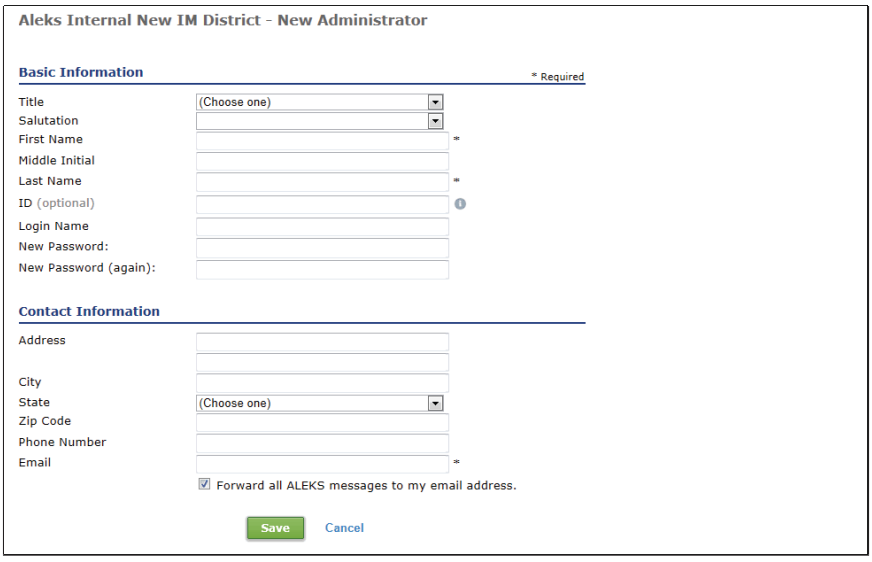


Figure 7.88: New Administrator

7.11.4 Class Activity

Administrators can view the number of students who worked in ALEKS at each school each month and the average hours worked each week.

7.11.5 Student Roster (District Level)

Like the student roster at the institution level, district administrators can manage many student accounts within the district, including viewing their dashboards, sending messages, and moving and unenrolling students. Many functions are streamlined on this page for updating and managing accounts efficiently. For full details on the student roster, see Sec. 7.9.11.

7.11.6 Subscription Management System (District Level)

District administrators can also view and manage subscriptions for the district and for schools within the district. For more information about Subscription Management System, see Sec. 7.9.5.

7.11.7 Administrative Reports (District Level)

District administrators can also generate administrative reports for the district and for schools within the disitrict. For more information about administrative reports, see Sec. 7.9.10.

Chapter 8

Teaching with ALEKS

8.1 The ALEKS Educational Paradigm

ALEKS is based on the understanding that students learn mathematics in different ways, at differing speeds. Starting from an accurate assessment of their current knowledge, students in ALEKS are only offered what they have shown themselves ready to learn. (The term "knowledge check" is synonymous with assessment.) They therefore experience less frustration from material that is too difficult and boredom from material that is too easy. Students are engaged in the learning process, and grow in confidence and independence as they use the program. ALEKS periodically reassesses students to test their retention of new knowledge, and if they forget what was once learned, ALEKS smoothly and efficiently guides them through necessary review and reinforcement. With time and persistence, every ALEKS student will progress toward mastery, in a way clearly visible to both student and instructor.

It is normal for students to be in disparate knowledge states; ALEKS puts this information clearly at the instructor's disposal. The relative mastery attained by students appears clearly from the "Learning Progress Since Latest Assessment" report in the Instructor Module. ALEKS does not require students to progress as a unified group. ALEKS will permit a student to work on any topic in the category "ready to learn," a list of topics that the student has not yet learned, but has demonstrated (within ALEKS) the readiness to begin learning.

Students using ALEKS will experience new independence and excitement in learning. Instructors also may find different opportunities for optimizing their role in the learning process, with a greatly expanded ability to accurately monitor and effectively promote their students' learning. The role of the instructor is critical in providing structure, support, and reward for the students' effective use of ALEKS. If ALEKS is used properly, the instructor's scope for individual coaching and small-group instruction will be greatly expanded, as will the freedom to teach mathematics in a broader and richer way.

ALEKS gives the instructor a set of powerful resources. Various styles of use of ALEKS

are possible. The following should be understood as suggestions, designed to give instructors a sense of the possibilities offered by ALEKS's extensive library of tools.

8.2 The Instructor and ALEKS

ALEKS is often used in regular classroom settings.

The instructor in an ALEKS class need not be collecting, correcting, or distributing papers, organizing groups, managing materials, giving instructions, or supervising activities. The instructor in an ALEKS class may be just as busy teaching mathematics to individual learners: getting one student started on a new topic, checking another student's work, responding to questions, suggesting alternate methods and explanations, making or reinforcing connections among concepts, and congratulating those who add an item to their pie. ALEKS provides comprehensive support to the student in every phase of its use; the instructor will find that the additional direct support given this way is especially productive. The relation of teacher and student is based on knowledge and discovery, not management and sanction. No one is "behind" in ALEKS; setbacks are readily addressed and overcome; every student can expect to make progress and be recognized.

It is important, especially in the early stages of an ALEKS class, to be generous in recognizing student progress. Students need to understand that when they add an item to their pie, or show progress in a new assessment (knowledge check), it is an achievement. At the same time, formal rewards for the effective use of ALEKS need to be built into the class structure and made clear from the outset (Sec. 8.3).

Students will be assessed at the beginning of their use of ALEKS (following Registration and the Tutorial), and at regular intervals after that. The instructor does not need to supervise all ALEKS assessments; normally, students will be using ALEKS both in and out of the classroom, and taking assessments at various times and locations. Once the students realize that the purpose of the ALEKS assessment is to provide appropriate material in the Learning Mode, there will be little reason to get help, use the textbook or calculator inappropriately, or in any other way achieve inaccurate assessment results.

We recommend supervising the Initial Assessment (Knowledge Check). The students may need assistance in their first use of the system, they will need to be reassured that the assessment is not for a grade, and it is important to get valid results on this Initial Assessment, so that that the students' work in the Learning Mode will be productive from the start. For the instructor's own information, other supervised assessments may also be held at regular intervals to provide accurate "snapshots" of overall progress by the class (Sec. 8.11). We suggest that such supervised assessments be scheduled at the midpoint and end of the class. Also, any assessment results which may be used as a component in the students' grades should, of course, be obtained from supervised assessments.

NOTE. In cases where students do not seem to be making adequate progress in ALEKS,

the student may have received help, or inappropriately used a calculator on an unsupervised assessment, skewing the assessment results and leading to inappropriate material in the Learning Mode. This can be corrected by requesting a new assessment for the student.

8.3 Planning the ALEKS Class

In ALEKS, the instructor has complete freedom in planning lectures, lessons, and assignments, while ALEKS ensures that students can progress toward mastery regardless of their level of preparation. To the extent that students will be working independently in ALEKS, the content of lab classes is provided by their work in ALEKS. Instructors can, however, plan focused small-group instruction from week to week (Sec. 8.5).

It is important to make ALEKS an integral part of the class requirements and grading scheme. The main factor influencing the success of students using ALEKS is the time that they spend in it. This means that the students must be required to spend a suitable amount of time in ALEKS on a weekly basis. (A minimum of three hours is recommended.) They should be informed of this at the beginning of the class, and the instructor should monitor their fulfillment of this obligation. The amount of time required must be reasonable and in balance with other requirements for the course; the instructor should not simply include an ALEKS requirement without reducing the other requirements that the students have to fulfill. For example, the quantity of homework problems may be reduced, as the students will be solving problems in their ALEKS sessions.

These are only suggestions, and experienced instructors may well find approaches that will be more effective with their own students. There must, however, be clear, formal support for the use of ALEKS.

One approach is to provide a certain number of points toward the final grade for each week that the student fulfills their required hours. It is advisable to reward each week, so that the student does not fall into the expectation that all of the required hours can be done at the end; consistency should be rewarded, along with total hours. If a student falls short of the specified hours during a particular week, that week is not rewarded, but the "deficit" is not carried forward; the next week begins with a clean slate (the primary concern is regular use of the system; for this reason a surplus is also not carried forward). Proportional rewards can also be used; each hour spent has a point value, up to the required minimum.

In order to effectively monitor the students' use, the instructor should check the hours on the "Learning Progress Since Latest Assessment" page or the "Time and Topic" report. This page can be printed out every week for record-keeping. In rare cases, students may try to fool ALEKS by logging on to their accounts and doing something else; this can be seen when the number of items gained per hour is far too low. ALEKS will log the student off if there is no activity after a certain amount of time. Instructors can obtain

a precise record of a student's actual work in ALEKS by viewing the student's "Time and Topic" report.

The students' achievement in ALEKS (as opposed to their use of the system) may also be used as a component in their final grade. For information on how to do this, see the **Instructor Manual**.

8.4 Preparing Your Students

The following considerations may be useful in preparing your students to begin to use ALEKS.

Difficulty of Assessment Questions

The ALEKS Initial Assessment (Knowledge Check) is always comprehensive, in order to achieve the highest accuracy and reliability. In the course of the assessment, some questions may be too easy or too difficult for some students. The students should be told to click the **I don't know** button only if a question is completely unfamiliar to them; otherwise they should do their best to answer. As the assessment proceeds, the questions will focus more and more closely on the outer limits of the student's actual knowledge. In Learning Mode (following the assessment), students will be provided only material that they are prepared to learn.

Length of Assessments

The number of questions asked in an ALEKS assessment varies. Normally, an assessment in Arithmetic requires between 20 and 30 questions.

No Help in Assessments

Explain to the students that they will need paper and pencil for answering assessment questions, but that no help or collaboration whatsoever is permitted during assessment. If the teacher or anyone else helps the student during assessment, even just explaining or rephrasing a question, assessment results may be inaccurate and the student's learning in ALEKS may initially be hindered. Be sure students understand that the purpose of the Initial Assessment is to gain a precise, detailed understanding of what they know, so that in Learning Mode they are given material they are ready to learn. It is not a "test" to pass or fail, and they will not receive a grade on an ALEKS assessment (unless the instructor chooses to use assessments for grading).

8.5 Focused Instruction with ALEKS

The features of the Instructor Module make it possible to prepare students for specific topics that they are going to work on, and to reinforce and expand on knowledge that students have recently acquired. This involves either guiding lectures or focused instruction to small groups of students based on data obtained from ALEKS.

The two kinds of teaching opportunities cued by ALEKS come from two types of information maintained by the system for students over the entire time that they use it: the set of items a student is "ready to learn" (or "outer fringe" of the student's knowledge state), and the set of items most recently learned ("what students can do," the "highest" topics in the student's knowledge state, called the "inner fringe"). (See the Instructor's Guide under "Inner and Outer Fringes of a Knowledge State," in the chapter "Knowledge Spaces and the Theory Behind ALEKS".) The items "ready to learn" are the topics a student may normally choose to work on in ALEKS; the items recently learned ("what a student can do") are considered the least secure and most likely to need reinforcement. (These items can be reviewed by clicking the **Review** button.) When the students are logged on to ALEKS, these two types of information are used automatically to guide and manage their learning. The instructor, however, can also view the inner and outer fringes in a convenient format to plan focused instruction that will parallel, supplement, and enhance the individual work that their students are doing in ALEKS.

To find this information for a class, the instructor can enter the Instructor Module and select the class, then click on **Reports** and select the **ALEKS Pie** report. This report represents the average student in the given class, and displays the weaknesses and strengths of the class as a whole. The **Show** drop-down box can be used to filter the report by "Current Learning," "Most Recent Knowledge Check," or "Initial Knowledge Check." Complete details on which topics students have mastered, not mastered, and are ready to learn in the class are available in the section below the pie chart and can be viewed by Objectives (if textbook integration or intermediate objectives are being used) or ALEKS Table of Contents.

Using the ALEKS Pie Report we can see a breakdown of student mastery for each topic, send messages directly to students, and view additional topics that a group of students is ready to learn. The purpose of this analysis is that the instructor may pick one or more topics from the list and schedule small-group sessions of focused instruction.

The following are examples that illustrate how these features may be used.

Example 1: Basic

On a Friday evening, the instructor sits down to plan lessons for the following week. He or she logs onto ALEKS, selects the name of a class in Arithmetic, and clicks on "ALEKS Pie" under "Reports" to access the ALEKS Pie Report. A pie chart appears showing the average profile of mastery in the class. The "slice" of the pie chart for Whole Numbers is full to about 90 percent; the slices for Fractions, Decimals, and Proportions and Percents are filled much less, ranging between 20 and 40 percent. This indicates that lessons for the week may focus profitably on the most advanced Whole Numbers topics as well as on topics of moderate difficulty in Fractions, Decimals, and Proportions and Percents.

Example 2: Intermediate

On a weekend afternoon, the instructor logs on to ALEKS, selects the name of a class in Arithmetic, and clicks on "ALEKS Pie" under "Reports" to access the

ALEKS Pie Report. Next the instructor clicks on the "View all topics" toggle, in either the ALEKS tab or the Objectives tab, and when the list of topics appears, the instructor scans this list for items of particular difficulty. "Ordering Numbers with Exponents" has 16 students currently able to choose this topic from their pie charts. The instructor notes this topic down for class discussion early in the week. With the benefit of some timely preparation, the students can be expected to master this troublesome topic with less difficulty.

Example 3: Advanced

On a Monday morning, the instructor logs on to his or her ALEKS account, selects the name of a class in Algebra 1, and clicks on "ALEKS Pie" under "Reports" to access the ALEKS Pie Report. Next, the instructor clicks on the "View all topics" toggle, in either the ALEKS tab or the Objectives tab, and the list of topics appears, clearly showing what students have mastered, not mastered and are ready to learn. The experience and expertise of the instructor are used to used to plan with this information. Suppose that there is only time in the week's schedule for two small group sessions. (The ALEKS class has only one hour in the lab, and ten minutes are set aside to speak with each small group; the remaining forty minutes are for helping students in the lab.) The instructor will look over the topics with two questions in mind: which topics have the greatest numbers of students, and which are most worth discussing.

For example, looking at the list of topics "Ready to learn," the instructor sees "Solving a Linear Equation with Absolute Value: Problem Type 1." The instructor knows from experience that students have difficulty with the concept, and that they are more successful with it if they have had a chance to review. This topic has twelve students out of thirty in the class. The instructor uses the message feature to send a note to these students, asking them to meet in the front of the room at the beginning of the lab; the students will receive this note the next time they log on to ALEKS, no later than the beginning of that lab.

Looking over the list of topics "Mastered," the instructor sees "Marking a point in the coordinate plane," with ten students. Although the number of students is less than for other topics, this one seems to the instructor richer in its content of mathematical culture than the others; students who have just worked on this topic are may be using the coordinate plane for the first time. Thus this is chosen as the second topic, and a second message is sent to these students, to meet at the front of the room, ten minutes into the lab.

8.6 Models of Classroom Integration

There are numerous ways in which ALEKS can be and is used in concrete educational situations.

Supervised Math Lab

Expert supervision can be provided for the students' use of ALEKS in regularly scheduled mathematics lab periods, whether or not these are part of a conventional class structure. Students benefit from the direct coaching and assistance of qualified instructors in the course of their work with ALEKS.

Math Lab in Structured Course

The supervised mathematics lab may be part of a structure of class meetings, combined with conventional and lecture-style classes. The instructor in such a setting need not gear the sequence of topics covered in classes in any way to what the students are doing in ALEKS; the students' independent work in ALEKS will increasingly benefit their performance on quizzes and tests, as well as their understanding of lectures. ALEKS is not designed to "teach to the test," although experience has shown that students' performance on comprehensive tests improves dramatically when they have worked with ALEKS over time.

Small-Group Instruction

The recommended use of ALEKS in a classroom setting makes use of the detailed analysis of individual student knowledge provided through the Class Report page to tailor the lectures to the skills of students.

Self-Paced Learning

In this scenario students may use the school computer lab on their own, with only informal supervision. ALEKS is used in this case much as it is for distance learning, except that students have the opportunity for closer consultation with the instructor.

Distance Learning

ALEKS is used by students who may never enter the physical classroom, or may enter only on a few occasions for orientation and supervised assessments. ALEKS provides a range of features for communication between instructor and student, as well as powerful facilities for the monitoring and evaluation of student work.

Regardless of which approach is used, you can derive more benefit from ALEKS through monitoring the students' use of ALEKS and communicating with them, whether in direct contact, by email, or by messages through the ALEKS system. As discussed above, we recommend that a certain number of hours in ALEKS each week be required (Sec. 8.3); this should be made clear from the start as part of the published course syllabus and rewarded appropriately through the grading scheme. Students' progress in ALEKS should be recognized and reinforced early on; conversely, students who do not seem to make adequate progress should be contacted promptly.

The following sections of this chapter provide more information on these issues affecting the classroom use and integration of ALEKS.

8.7 Monitoring Student Use

In the day-to-day use of ALEKS by a class, a principal concern of the instructor is to monitor that students are using ALEKS regularly and for at least the required amount of time. The most convenient place to find this information is the "Time and Topic report for all students" (under "Reports"). Each student's name is displayed on this page along with the total number of hours that student has spent logged on to the system. There is also a breakdown of how much time the student has spent in ALEKS on a daily basis. Students can see this same breakdown of daily usage in their own accounts by using the "Report" link.

It is also important that critical assessments be supervised by the instructor, to ensure that valid results are received (Sec. 8.2).

8.8 Monitoring the Progress of a Class

The instructor can also use the bar graphs on the "Learning progress since latest assessment" page to see how close each student is to mastery of the subject matter. Keep in mind that the bar graphs displayed on this page show only the students' achievement as of their last assessment (in blue) and any progress made in the Learning Mode since that assessment (in green). For a more panoramic view of the progress made by a group, select the "Total progress" report. This displays the difference between the students' knowledge on their first and their most recent assessments.

The "Detailed progress history" report is an expanded version of "Learning progress since latest assessment." It shows the learning history for all students, with one bar graph for each assessment taken. The bar graphs are stacked, with the earliest on the bottom, and the most recent at the top. To the left of each bar there is the date of the assessment and a notation indicating the reason for the assessment.

To see each of the assessments for a given student, with that student's progress subsequent to each assessment in the Learning Mode, the instructor should view the page "Progress report for a particular student in this class" for the student.

8.9 Monitoring Individual Progress

On the page "Progress report for a particular student in this class" there is a line for each assessment taken by a particular student, with bar graphs showing mastery as of that assessment and subsequent progress made in the Learning Mode. The Initial Assessment is shown in the bottom line, with later assessments "stacked" upward. By following progression from earlier to later assessments, the instructor can see very clearly how a student is progressing toward mastery of the subject matter.

Use caution in interpreting this information. Students vary widely in how they master

material. Progress made in the Learning Mode (green bar) is not always immediately reflected in the student's level of mastery on a subsequent assessment. Some students progress more quickly in Assessment Mode than in the Learning Mode. In such cases the "new" blue line is further ahead than the green line just below it. On the other hand, many students make faster progress in the Learning Mode than in assessment. In such cases the "new" blue line lags behind the green line below it. It is very common for a student to master the entire subject matter two or more times in the Learning Mode before that mastery is finally confirmed in an assessment. Part of the power of the ALEKS system is that it accommodates individual differences in behavior.

NOTE. In cases where a student moves backward in his or her mastery, the instructor should contact the student. If the student did not take the assessment seriously enough, a new one can be requested.

8.10 Moving a Student to a New Class

A student subscription to ALEKS entitles the student to work through as many subjects in the sequence as the student masters during the subscription period (with some exceptions). When a student completes the objectives of a class, the student should be moved to a more advanced class.

8.11 Ordering Assessments

Following the Initial Assessment or Knowledge Check (which should be taken under the instructor's supervision), the ALEKS system will automatically schedule other assessments as needed to guide the students' progress. The instructor, however, can order an individual or group assessment at any time. It is a good practice for the instructor to schedule supervised assessments at regular intervals (interim and end of the class), as "snapshots" of overall class achievement.

8.12 Independent Study and Distance Learning

The ALEKS system is well suited to use in an independent study or distance learning context. ALEKS is self-contained and adaptable to any program or class materials. Students using ALEKS under these circumstances know exactly what the class goals are, where they stand in relation to those goals, and what they need to do to achieve them.

For the instructor administering an independent study or distance learning program, ALEKS solves nearly every problem of management, oversight, evaluation, and communication. All of the information needed to keep track of far-flung independent learners is at the instructor's fingertips, through the features of the Instructor Module. The

internal message system of ALEKS puts the instructor in constant touch with students, without dependence on telephone or email communication.

8.13 The ALEKS Knowledge Structure

Each ALEKS subject, such as Algebra 1, has a knowledge structure associated with it. The number of items comprised in a knowledge structure ranges roughly between 200 and 1000 topics. A knowledge state is a subset of items which may correspond to the knowledge of an actual student (i.e., there may be a student who has mastered exactly those items, and no others). A knowledge structure is the family of all the knowledge states that we may encounter for a given subject.

An ALEKS structure affects virtually every aspect of ALEKS's functioning. In the ALEKS Assessment Mode it enables ALEKS to make inferences from student answers, keeping the ALEKS assessments brief but accurate.

The structure is also crucial in the ALEKS Learning Mode. Using the structure of a given course product, the system knows precisely which items are in the inner fringe and outer fringe of each of the knowledge states in ALEKS. The items in the outer fringe of a student's knowledge state are those items that the student is the most ready to learn next. (From a technical standpoint, an item is in the outer fringe of a state if adding that item to the state results in another feasible knowledge state.) These items are presented to the student in MyPie when the student moves the mouse pointer over the ALEKS Pie Chart. Similarly, an item in the inner fringe of a student's state is an item either recently learned or one whose mastery by the student might be shaky. (Technically, an item is in the inner fringe of a state if removing that item from the state results in another feasible knowledge state.) They are presented to the student when the student is having difficulty in the ALEKS Learning Mode and during ALEKS Review.

An additional benefit of the proliferation of connections among items in ALEKS is its extreme flexibility from the students' viewpoint: for any particular topic, there is a vast number of possible approaches, or learning paths, which may lead students to mastery of that topic. This flexibility does not imply, however, that *any* order is possible. Each learning path leading to a particular topic must contain, at a minimum, the items which are "below" such topic in the ALEKS structure.

8.14 Objectives

ALEKS also provides a facility for creating multiple sets of programs within a single class (See the **Instructor's Guide** under **Set Objectives / Modules,** in the chapter **Instructor Module**). The Objectives feature makes it possible to prioritize particular sets of items for particular periods of time, by constraining the choices available to the

students. When Objectives have been set, students will be guided to these items by the shortest possible path.

Chapter 9

Knowledge Spaces and the Theory Behind ALEKS

9.1 History

Knowledge Space Theory has been under development since 1983 by Professor Jean-Claude Falmagne, who is the Chairman and founder of ALEKS Corporation, and other scientists (especially, Jean-Paul Doignon from Belgium) in the United States and Europe.

ALEKS is the first computer system to embody Knowledge Space Theory for assessment and teaching.

9.2 Theory

A complete exposition of Knowledge Space Theory is not intended here. The Bibliography contains a number of references for those interested in further details (Sec. 9.3). Knowledge Space Theory is expressed in a mathematical discipline often referred to as "Combinatorics." What follows here is a brief, intuitive summary introducing certain fundamental terms employed in discussions of ALEKS.

9.2.1 Domain, Items, and Instances

An academic discipline such as Arithmetic or Algebra is represented as a particular set of problems or questions that comprehensively embody the knowledge of the discipline. That set is called the **domain**, and the problems are called **items**. A symbolic representation of the domain of Arithmetic uses dots standing for items (Fig. 9.1). One of the items, which might be entitled "Word problem with percentages," is indicated by a line. The problem in the rectangle is an **instance** of that item.

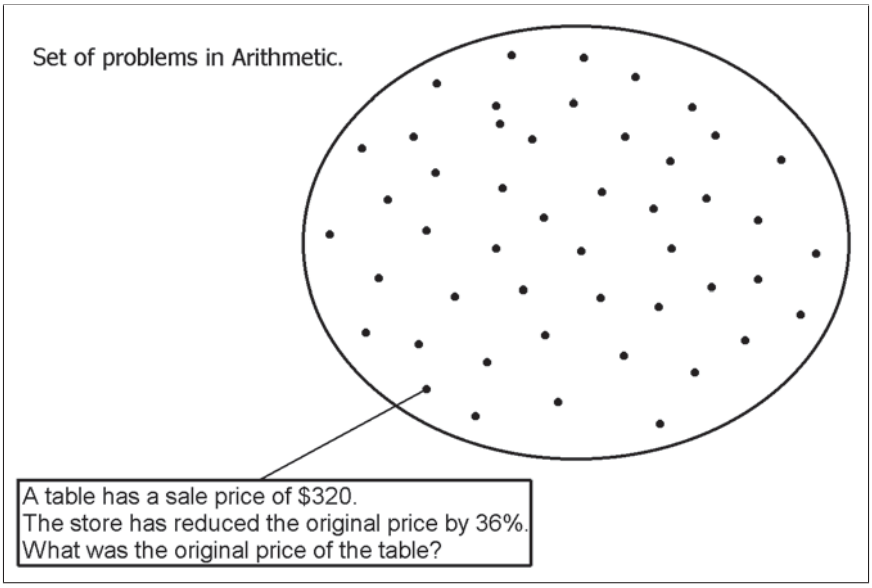


Figure 9.1: Domain of Arithmetic

Each item, or problem type, has at least dozens, more often hundreds or thousands of instances. Full mastery of the subject implies the ability to solve problems corresponding to all the items making up the domain.

Determining the set of items that make up the domain is the first step in constructing a "knowledge structure" for that domain. This is done by research in instructional materials and standards and systematic consultation with professionals. Substantial agreement is achieved among expert pedagogues on the choice and definition of items. The set of items finally arrived at and forming the domain must be comprehensive, that is, it must cover all the concepts that are included in the particular academic discipline.

9.2.2 Knowledge States

The **knowledge state** of a student is represented by the set of items in the domain that he or she is capable of solving under ideal conditions (Fig. 9.2). This means that the student is not working under time pressure, is not upset or impaired in any way, etc. In reality, careless errors may arise. Also, the correct response to a question may occasionally be guessed by a subject lacking any real understanding of the question asked. (This will occur very rarely when using the ALEKS system, because multiple-choice answers are not used.) An individual's knowledge state is not directly observable and has to be inferred from responses to questions.

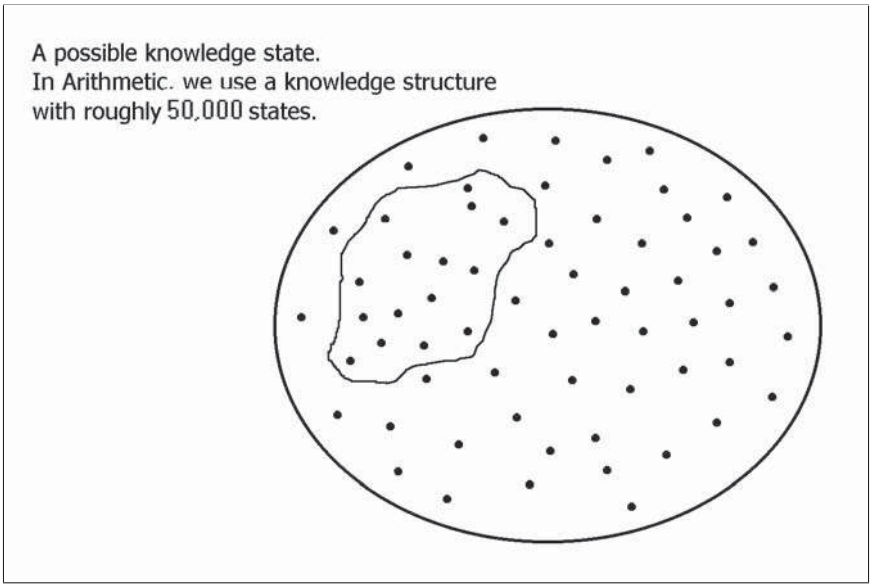


Figure 9.2: Knowledge State

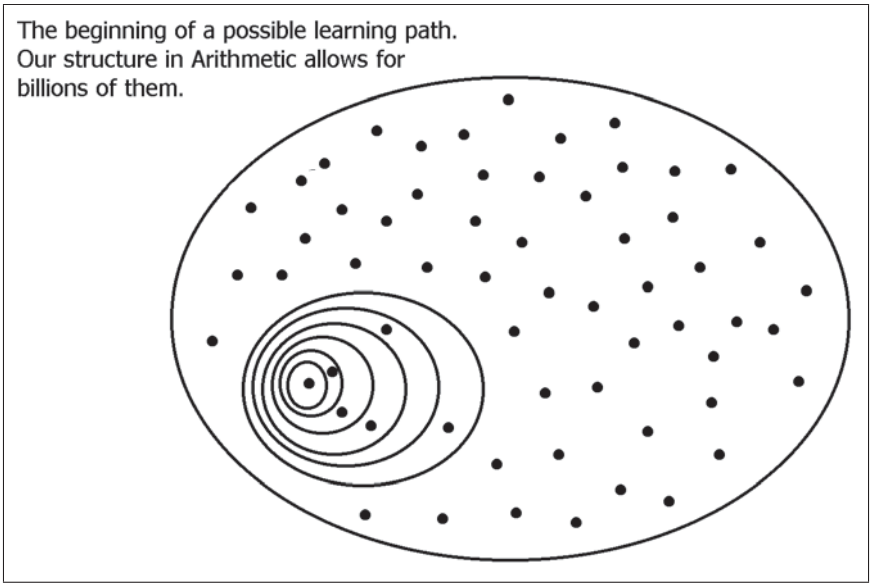


Figure 9.3: Learning Path

9.2.3 Knowledge Structures and Knowledge Spaces

It should be obvious that not all possible subsets of the domain are feasible knowledge states. For instance, every student having mastered "long division" would also have mastered "addition of decimal numbers." Thus, there is no knowledge state containing the "long division" item that does not also contain the "addition of decimal numbers" item. The collection of all feasible knowledge states is referred to as the **knowledge structure**. The very large number of states for any product means that there are many possible ways of acquiring knowledge, i.e., many learning paths (Fig. 9.3). In the ALEKS knowledge structure there are literally billions of such learning paths. A "knowledge space" is a particular kind of knowledge structure.

As in many real-life applications, "noise" and errors of various sorts often creep in, which require the elaboration of a probabilistic theory. The ALEKS System is based on such a probabilistic theory, which makes it capable of recovering from errors. For instance, ALEKS is capable of deciding that a student has mastered an item, even though the student has actually made an error when presented with a problem instantiating this item. This is not mysterious: a sensible examiner in an oral exam, observing an error to a question about addition would nevertheless conclude that the student has mastered addition, for example, if that student had given evidence of skillful manipulation of fractions.

9.2.4 Inner and Outer Fringes of a Knowledge State

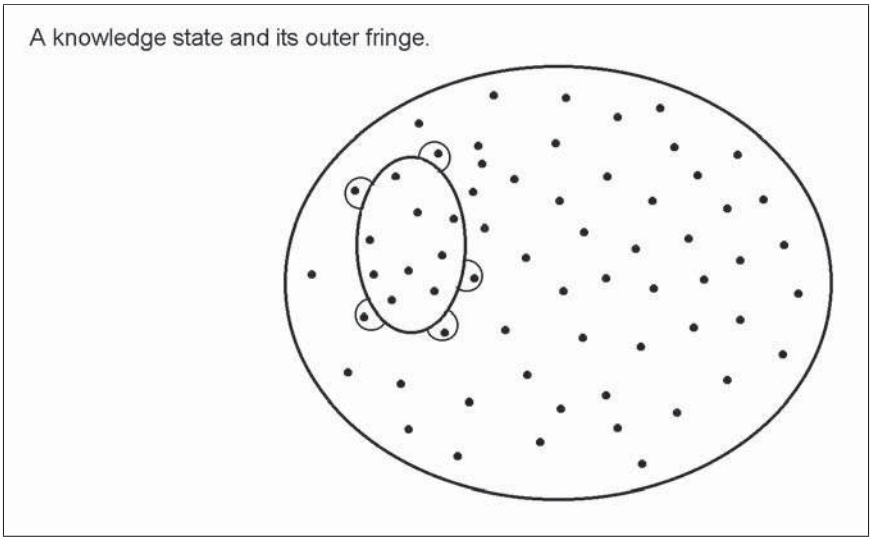


Figure 9.4: Outer Fringe of a Knowledge State

An item that has not yet been mastered by a student may not be immediately learnable by that student. Learning one or more prerequisite items may be necessary. Consider

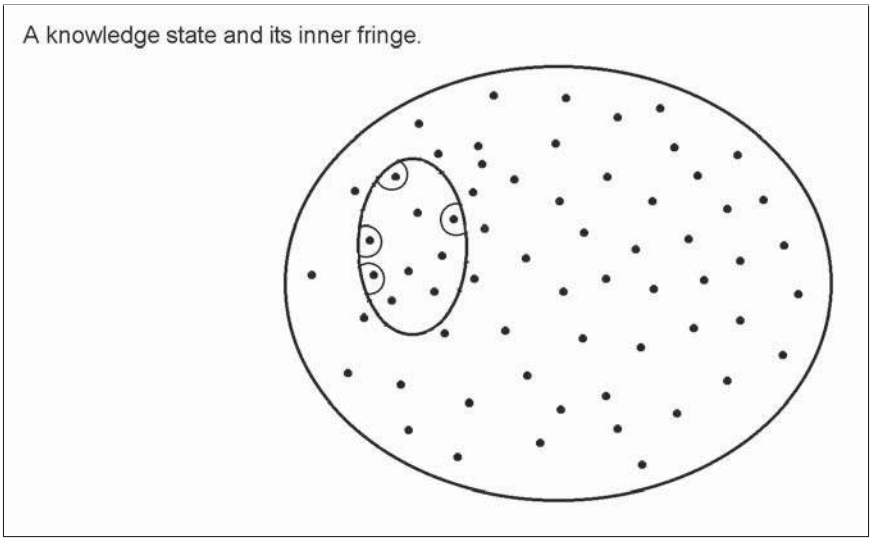


Figure 9.5: Inner Fringe of a Knowledge State

a student in a particular knowledge state **K**. The set of all items that may be learned immediately by a student in that state **K** is called the **outer fringe** of the state **K**. The outer fringe of a state **K** is defined as the set of all items, any one of which **may** be the next one learned. An item is in the outer fringe of the state **K** if the addition of that item to the state **K** forms a new, feasible knowledge state (Fig. 9.4). Typically, the outer fringe of a knowledge state will contain between one and several items.

Similarly, an item is in the inner fringe of a state **K** if there is some other knowledge state to which that item may be added to form state **K** (Fig. 9.5). The **inner fringe** of a state **K** is thus defined as the set of all items, any one of which **may** have been the last one learned.

These two concepts of inner and outer fringes are used in powerful ways in the Learning Mode of the ALEKS system. For example, the system always offers a student problems to solve that are based on items in the outer fringe of his or her state. If ALEKS judges that a student is experiencing difficulties in learning some new item, ALEKS typically reviews the mastery of items in the inner fringe of the student's state that are also related to the new item to be learned.

9.2.5 Assessment

How can ALEKS uncover, by efficient questioning, the particular knowledge state of a student? While the details of ALEKS's method for achieving such a goal are technical, the guiding intuition is straightforward. At every moment of an assessment, ALEKS chooses a question to be "as informative as possible." (In ALEKS, assessments may be called "knowledge checks.") In our context, this means a question which the student has, in the system's estimate, about a 50 percent chance of getting right. The student's

response (correct or false) determines a change in all the likelihood values: for instance, if the question involved manipulation of fractions, and the student's response was correct, then all the knowledge states containing this item would have their likelihood values increased. The specific way the questions are chosen and the likelihood values altered makes it possible for ALEKS to pinpoint the student's state in a relatively short time. In Arithmetic, for example, approximately 15–25 questions usually suffice.

Finally, it should be noted that the assessment report given to students, instructors, and administrators is a very precise **summary** of the student's knowledge state. If the structure is known, the outer fringe and inner fringe together completely define the student's knowledge state. Internally, the system registers the student's knowledge or non-knowledge of each item in the domain.

A more thorough but still accessible overview of Knowledge Space Theory is available on the ALEKS website: Cosyn, Doignon, Falmagne, "The Assessment of Knowledge, in Theory and Practice":

https://www.aleks.com/about_aleks/Science_Behind_ALEKS.pdf

A comprehensive treatment of Knowledge Space Theory can be found in Doignon and Falmagne, *Learning Spaces* (Springer-Verlag, Berlin, Heidelberg, 2011).

A comprehensive scientific bibliography on Knowledge Spaces is maintained here:

http://css.uni-graz.at/kst.php

For a more selective bibliography, see the following section.

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Chapter 10

Frequently Asked Questions

10.1 General

General questions on ALEKS concern what it is, its purpose, and what it contains.

What is ALEKS?

ALEKS is an online educational software program based on a cycle of assessment and learning. ALEKS course products include Mathematics, Statistics, Accounting, Business, and Chemistry. By knowing exactly which concepts the student has mastered and which are new but within reach, ALEKS enables the student to work on those concepts they are most ready to learn. ALEKS is a full-time automated tutor, including explanations, practice and feedback. ALEKS interacts closely with the student, continuously updating its precise map of the student's knowledge state. ALEKS combines the advantages of one-on-one instruction and evaluation with the convenience of being on-call, on your computer, 24 hours a day, seven days a week. The cost of ALEKS is a small fraction of the cost of a human tutor.

What makes ALEKS different?

A great many important differences exist between ALEKS and other kinds of "educational software," including its finely individualized instructional features, easy access over the Internet, rigorous and comprehensive educational content, and full-featured class-management module for instructors and administrators. A critical difference is the capacity of ALEKS for efficient, precise, comprehensive, and qualitative assessment. This not only makes it a valuable tool for monitoring educational progress, but also enables it to provide students with the material they are most able to learn at a particular time. Students will not be given material they have already mastered, or topics for which they have not yet demonstrated prerequisite knowledge.

ALEKS is a self-contained learning environment, with complete sets of practice and explanatory units needed for the subjects that it covers. The units may also

be referenced or linked to textbooks for extended treatment of mathematical concepts. There is an online student mathematics dictionary accessed by clicking on underlined mathematical terms (hypertext links), and a diagnostic feedback facility that, in many cases, is able to explain the nature of misunderstandings and errors made by students.

For instructors, ALEKS offers a complete administrative and monitoring facility through which individual and group progress can be checked, standards established, enrollment managed, and messages exchanged. ALEKS can be configured for use with diverse educational standards.

ALEKS is not a game or "edutainment." It is an automated educational tool with robust, carefully-designed features for both learners and educators.

What are the parts or "modules" of ALEKS?

The principal "modules" of ALEKS are the **Assessment Mode** (assessments are also called "knowledge checks"), in which student knowledge is rigorously assessed, the **Learning Mode**, where students work on mastering specific concepts, the Instructor Module, in which instructors and administrators are able to monitor student progress and carry out administrative functions, and the Administrator Account, which permits management and monitoring of an arbitrary number of separate institutions, such as those making up a school district. There is also a Tutorial (which students take when first registering with the system), online help, a mathematical dictionary, graphic display of assessment results and learning progress, and many other features.

Why is ALEKS on the Internet?

ALEKS is available on the Internet so that a student who has registered with the system can use it from any suitable computer, in any location. No disks, CD's, peripherals, or backup facilities are required.

10.2 Technical

The technical information needed to use ALEKS is minimal. These few questions are all that are likely to be asked, even in a large group of users.

What are the system requirements for using ALEKS?

[Sec. 3.2] Fig. 10.1 presents the technical requirements for ALEKS in summary form.

Tablets. All courses are desktop and tablet compatible with the exception of AP Statistics (Quantitative), High School Prep for Statistics, Business Math, Fundamentals of Accounting, and Introduction to Statistics. These courses are not compatible with tablet devices.

Note that any of the kinds of Internet connection (cable, ISDN, DSL, or wireless) typical in computer labs are adequate for use with ALEKS.

	PC	Macintosh	Chromebook
Operating System	Windows 7+	MacOS 10.7+	Chrome OS
Processor	Any	Any	Any
RAM Memory	64+ MB	64+ MB	Any
Browser	Explorer 11+, Firefox 25+, Chrome 30+	Safari 6+, Firefox 25+, Chrome 30+	Chrome 30+
Screen Resolution	800x600 (1024x768 for Chemistry)	800x600 (1024x768 for Chemistry)	Any

Figure 10.1: System Requirements

Where can I get more information on ALEKS? How can I try out the system?

The ALEKS website provides complete information on the ALEKS system, including a Quick Tour, Free Trial use, licensing, history and theory, and technical support.

https://www.aleks.com

10.3 Theory

For those interested in looking beneath the surface, these questions concern the principles on which ALEKS is designed and constructed.

What is the theory behind ALEKS?

[Chapter 9] ALEKS is based on a field of Cognitive Science (Mathematical Psychology) called "Knowledge Spaces" (or "Learning Spaces"). The purpose of research in Knowledge Spaces is to model human knowledge in any subject, using mathematical tools such as Set Theory, Combinatorics, and Markovian Processes, so as to make possible fast and accurate assessment through interactive computer applications. There are numerous scientific publications in the field of Knowledge Spaces dating back to the early 1980's. A recent, authoritative treatment (with Bibliography) is Doignon and Falmagne, *Learning Spaces* (Berlin, Heidelberg: Springer-Verlag, 2011).

What is an "item"?

[Sec. 9.2.1] In Knowledge Space theory, an "item" is a concept or skill to be learned, the mastery of which is captured by a "problem type" serving as the basis for specific assessment and practice problems. Thus the item "Addition of two-digit numbers without carry" might produce the problem (instance) "What is 25 plus 11?"

What is a "domain"?

[Sec. 9.2.1] In Knowledge Space theory, a "domain" is the set of all items making up a particular subject matter, such as Arithmetic. A learner is considered to have

mastered the domain when that learner can solve problems corresponding to all the items in the domain.

What is a "knowledge state"?

[**Sec. 9.2.2**] In Knowledge Space theory, a "knowledge state" is the set of items belonging to a domain that a learner has mastered at some point in time. We speak of knowledge states in relation to a particular learner and a particular domain. Obviously, a learner's knowledge changes in time, and the goal of learning is that the knowledge state should eventually include (correspond to) the entire domain.

What is the "outer fringe" of a knowledge state?

[**Sec. 9.2.4**] In Knowledge Space theory, a learner's "outer fringe" is the set of items, any one of which can be added to the current knowledge state without others to make a new, feasible knowledge state. These are the items that the student is considered most "ready to learn." Progress is made from one state to another through one of the items in the first state's "outer fringe."

What is the "inner fringe" of a knowledge state?

[**Sec. 9.2.4**] In Knowledge Space theory, a learner's "inner fringe" is the set of items, any one of which can be taken away without any others from the current knowledge state to make a new, feasible knowledge state. These are the items that the student may have learned recently, and thus whose knowledge might need reinforcement.

What is a "knowledge structure"? What is a "knowledge space"?

[**Sec. 9.2.3**] In Knowledge Space theory, "knowledge structure" or "knowledge space" (the two concepts differ in a technical way) refers to the collection of feasible knowledge states for a particular domain. It is a key point that not all sets of items from the domain (subsets of the domain) are feasible knowledge states. For instance, in mathematics there can be no knowledge state containing the item "finding the square root of an integer" that does not contain the item "addition of two-digit numbers without carry," since no one will master the first without having mastered the second.

How was the structure created?

The knowledge structures (or, briefly, "structures") used by ALEKS are created by analysis of the subject matter and refined on the basis of data obtained from students' learning experiences. When ALEKS assesses a student, it is actually searching the structure for knowledge states that match the student's present competence.

What is the educational philosophy behind ALEKS?

The educational use of ALEKS is not tied to any particular theory of education or knowledge acquisition. A key insight underlying ALEKS is the existence of a vast multiplicity of diverse "learning paths" or sequences of topics by which a field can be mastered. Based on an inventory of knowledge states that numbers in the tens of thousands (for the subjects currently covered by ALEKS), the specialized tools of

Knowledge Space theory make it possible for the system to accommodate literally billions of possible individual learning paths implied by the relations among states.

ALEKS does not embody a particular philosophy of teaching mathematics; it is compatible with any pedagogical approach.

10.4 Assessments and Reports

Much of the power of ALEKS comes from its capacity for accurately and efficiently assessing the current state of a learner's knowledge.

What is an ALEKS assessment (knowledge check)?

[Chapter 4] An assessment by the ALEKS system consists of a sequence of mathematical problems posed to the student. The answers are in the form of mathematical expressions and constructions produced by the system's input tools (no multiple choice). The student can answer "I don't know" where necessary. During an ALEKS assessment, the student is not told whether answers are correct or incorrect. The assessment is adaptive. Each question after the first is chosen on the basis of answers previously submitted. Assessment problems (like practice problems) are algorithmically generated, with random numerical values. The length of the assessment is variable, between 15 and 35 questions. There are no time constraints, but some assessments can take less than a half-hour and a few more than an hour and a half. Students taking an assessment need to have paper and pencil. The ALEKS calculator button will become active when use of a calculator is permitted.

No help whatsoever should be given to students taking a knowledge check, not even rephrasing problems. Outside help can easily lead to false assessment results and hinder subsequent work in the ALEKS Learning Mode.

Students may be assessed when they first register with ALEKS. It is advisable that all assessments from which the instructor uses data for grading or a similar purpose take place under the instructor's supervision. At a minimum, the Initial Assessment should be supervised.

How does the ALEKS assessment work?

[Sec. 9.2.5] In assessing a student's knowledge, the system is in fact determining which of the feasible knowledge states for that subject correspond to the student's current knowledge. The assessment is probabilistic, so it is not fooled by odd careless errors. (Lucky guesses are very rare, because multiple choice answers are not used.) Likelihood values (values for the likelihood that the student is in a particular knowledge state) are spread out over the states belonging to the structure. With each correct answer, the likelihood of states containing the item for which a correct answer was given is raised and that of states not containing the item lowered. The reverse occurs for incorrect answers or "I don't know." At each step of the assessment, the system attempts to choose an item for which it

estimates, based on current likelihood values, that the student has about a fifty-fifty chance of success; such questions are maximally informative. When the likelihood values of a few states are extremely high and those of all the rest are extremely low—in technical terms, when the entropy of the structure is lower than a certain threshold value—the assessment ends and results are produced.

If a student makes a careless error or lucky guess, this will appear inconsistent with the general tendency of the student's responses, and the system will "probe" that area of knowledge until it is sure. For this reason, inconsistent assessments may require more questions.

10.5 Learning Mode

Students spend by far the greatest part of their time in ALEKS in the Learning Mode. The features of the Learning Mode are designed to provide a maximum of support to the student's growing mastery of course materials.

What is the Learning Mode?

[Chapter 5] The Learning Mode in ALEKS contains features to help students practice and master specific mathematical concepts and skills. In the Learning Mode, students are always working on a specific concept that they have chosen and that, in the system's estimation, they are fully prepared to master. If the learner successfully solves an appropriate number of problems based on that concept, the system will tentatively determine that it has been mastered and offer a new choice of topics. If the student has difficulty, the system will attempt to diagnose and interpret the student's errors. It will also provide explanations of how to solve problems and definitions of mathematical terms. It may suggest the name of a classmate who can help. If the student is unable to master the concept right now, or if the student wishes to change topics, a new choice of topics will be offered. After a certain amount of time has been spent in the Learning Mode, or after a certain amount of progress has been made, the student will automatically be reassessed.

What is the relationship between the Assessment Mode and the Learning Mode in ALEKS?

The Assessment and Learning Modes work together in a cyclical fashion, beginning with the Initial Assessment (Knowledge Check). A student is assessed, and the results of the assessment serve as a basis for the student's entry into the Learning Mode (the student works on concepts that the assessment showed that student most "ready to learn"). After a certain time in the Learning Mode, during which the results of the previous assessment are tentatively updated according to whether the student masters or fails to master new concepts, the student is reassessed and the cycle begins again. In this sense, ALEKS is an interactive learning system guided and powered by ongoing diagnostic assessment.

NOTE. Students who do not take an Initial Assessment will begin this cycle in Learning Mode.

10.6 Educational Use

ALEKS also provides a full range of features for successful integration into a variety of teaching styles and class plans.

What is the best way to use ALEKS with my class?

The greatest factor in successful use of ALEKS is regular, structured use, with close monitoring of student progress by the instructor. We recommend scheduling regular lab sessions with ALEKS, totalling at least three hours per week, as part of your class requirements. Not every lab session need be supervised by the instructor, but the Initial Assessment should be. Any other interim and concluding assessments scheduled specially by the instructor normally should also be supervised.

There has been successful use of ALEKS in a very wide variety of contexts and structures, including independent study. ALEKS Corporation is happy to consult with instructors on the best way to use ALEKS with their students. Also, extensive materials on implementation strategies in ALEKS are available on the ALEKS website.

Can ALEKS be used with handicapped and learning-disability students? Is ALEKS a remedial tool?

ALEKS is designed to help all students who can read sufficiently to understand what is being displayed on the screen, and who can use a computer. It has been used successfully with students exhibiting a range of learning disabilities. A large part of ALEKS content is compatible with screen-reading technology.

Does ALEKS need to be used with a particular textbook or curriculum?

ALEKS is designed to be used with any program, curriculum, or textbook. The system may also be referenced or linked to a textbook or online applications for particular classes. The fundamental idea of the ALEKS system is to allow students to pursue individualized paths to mastery of the subject matter. For this reason instructors may often find their students learning material that has not yet been covered in the class.

Does ALEKS have special features for educators?

[Chapter 7] Students' use of ALEKS and their progress toward mastery can be monitored using the features of the Instructor Module. The Instructor Module also enables instructors and administrators to establish the programs and standards used by ALEKS, to configure accounts, to find statistics on school district use, and to exchange messages. A instructor or administrator who has been registered with ALEKS enters the Instructor Module immediately upon login.

How can I contact ALEKS Corporation Customer Support?

[**Sec. 11**] You can contact ALEKS Corporation using the information in Chapter 12 of this manual. Students should approach their instructor first with any questions or problems regarding the use of ALEKS. Questions the instructor cannot answer should be brought to our attention.

Chapter 11

Support

Current information on ALEKS is available at the ALEKS website:

https://www.aleks.com

Technical support and consultation on the effective use of ALEKS is provided to educators by ALEKS Corporation Customer Support. Please contact the support group via the web:

https://support.aleks.com

by telephone:

(714) 619-7090

or by fax:

(714) 245-7190

NOTE. We ask that students using ALEKS not contact us directly, but approach their instructors first. It is hoped that the information in this Instructor's Manual will enable instructors to answer many of their students' questions.

We also welcome any and all comments and feedback on ALEKS. Here is our mailing address:

ALEKS Corporation Customer Support
15460 Laguna Canyon Road
Irvine, CA 92618

Appendix A

ALEKS Student User's Guide

A.1 System Requirements

ALEKS runs on many devices with various operating system and web browser configurations.

- PCs must have at least 64 MB of RAM and Windows 7 or higher. Compatible browsers are Internet Explorer 11.0 or higher, Firefox 25 or higher, and Chrome 30 or higher.
- PowerMacs or iMacs must have at least 64 MB of RAM and operating system Mac OS 10.7 or higher. Compatible browsers are Safari 6 or higher, Firefox 25 or higher, and Chrome 30 or higher.
- All courses are desktop and tablet compatible with the exception of AP Statistics (Quantitative), High School Prep for Statistics, Business Math, Fundamentals of Accounting, and Introduction to Statistics. These courses are not compatible with tablet devices.

NOTE. The most up-to-date requirements can always be found on the ALEKS website.

A.2 Registration

In order to register as an ALEKS user, you need a **Class Code** (10 characters) provided by your instructor. When you register with ALEKS, your name is entered into the database, and records of your progress are kept.

1. Go to the ALEKS website:

   https://www.aleks.com

Figure A.1: The ALEKS Website

When entering this URL, pay careful attention to the spelling of **aleks.**

2. Click on **SIGN UP NOW!** on the left of the page, under the space for Registered Users (Fig. A.1).

3. At the beginning of Registration you will be asked for your **Class Code**. The Class Code is supplied by your instructor. Enter this in the spaces provided, on the **left-hand side** of the window, and click on **Continue** (Fig. A.2).

4. Next, ALEKS will check whether you have ever used ALEKS before. Check the appropriate response and click on **Continue.** If you have used ALEKS before, you will be prompted to enter your ALEKS Login Name and Password before moving on.

5. Enter your personal information and choose a Password. Supplying an email enables your site administrator to help you with problems more quickly. You will also be able to enter your Student ID number.

6. At the end of registration you will be given a Login Name. You will need the ALEKS Login Name and your Password to return to ALEKS.

   Your Login Name and Password can be typed with upper- or lower-case letters. Neither may contain spaces or punctuation. If you forget your Password, click on the link **Forgot your login info?** located underneath the Password field on the ALEKS Home page.

7. You will need to wait for your instructor's authorization before starting to use your new account. If you need to log off now, you can log back on later using your Login

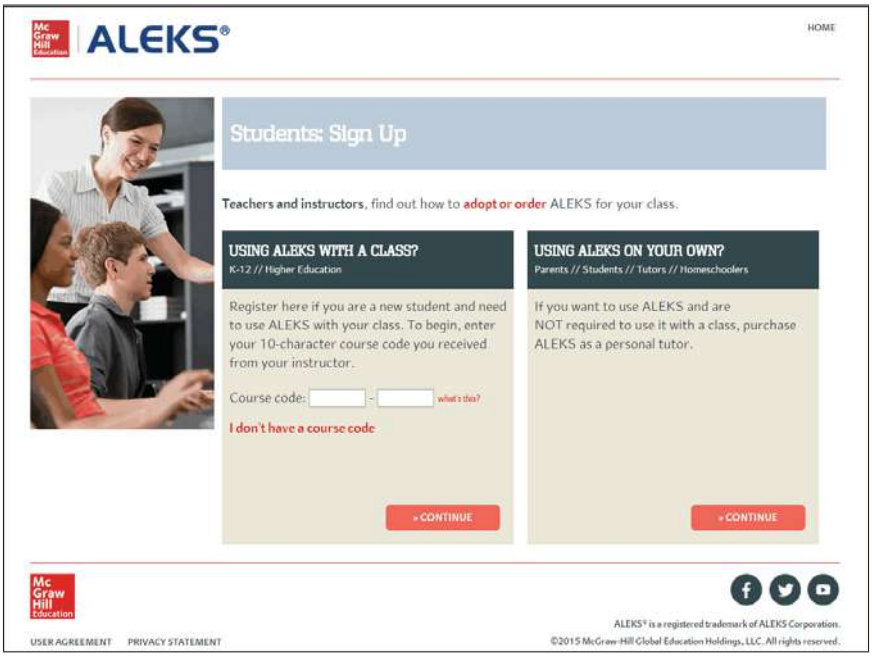

Figure A.2: Class Code

Name and Password. As soon as your instructor authorizes your registration, you will be able to start using ALEKS by beginning the Tools Tutorial.

A.3 Tools Tutorial

The ALEKS Tools Tutorial teaches you how to enter your answers in ALEKS. ALEKS avoids multiple-choice questions. Most answers are complete mathematical expressions and constructions. The Tools Tutorial is not intended to teach mathematics. The Tools Tutorial teaches you how to use the ALEKS input tools called the **Answer Editor** (Fig. A.3). Online help is also available while you are using ALEKS; just click the **?** button next to the input tools when you are working in ALEKS. This will give you access to the various sections of the Tools Tutorial.

A.4 Knowledge Checks

Instruction through ALEKS is guided by a precise understanding of your knowledge of the ALEKS class material. This information is obtained by Knowledge Checks in which ALEKS asks you to solve a series of problems. (ALEKS's estimate of your knowledge is also updated when you make progress in the Learning Mode.) Your Initial Knowledge Check occurs immediately after the ALEKS Tools Tutorial.

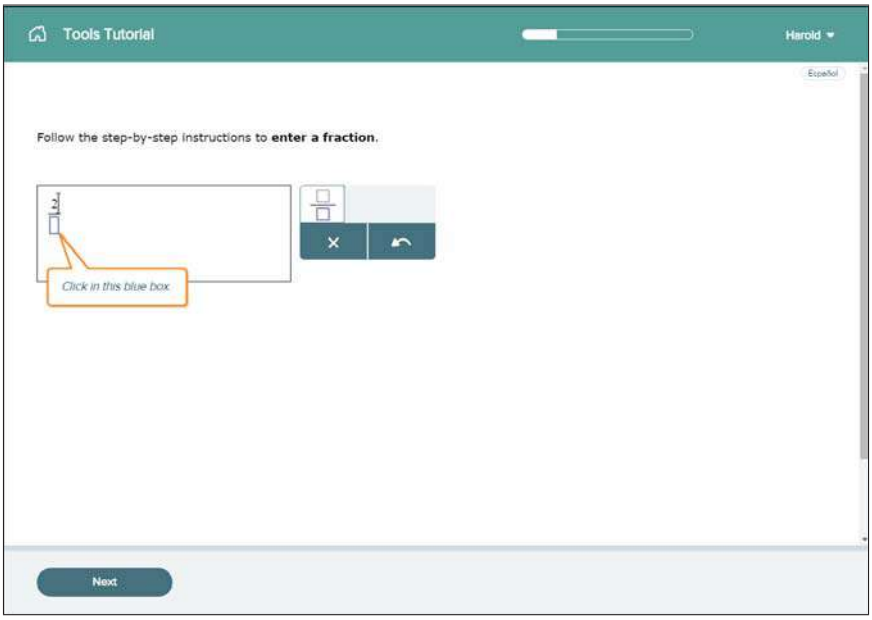

Figure A.3: The Answer Editor

A.4.1 Knowledge Checks in ALEKS

The Initial Knowledge Check determines which class topics you already have mastery of, which topics are not currently mastered, and which topics you are ready to learn. When the Initial Knowledge Check is completed ALEKS will display your unique knowledge state and individualized learning path.

Additional Knowledge Checks may be scheduled for you by your instructor. These may or may not need to be supervised, depending on the instructor's preference. ALEKS also prompts for automatic Knowledge Checks when you have spent a certain amount of time in ALEKS or have made a certain amount of progress (Fig. A.4).

NOTE. Your instructor may require that the Initial Knowledge Check be taken under supervision. **Don't try to begin your Initial Knowledge Check at home until you find out where your instructor wants you to take it.**

A.4.2 Knowledge Check Results

Upon completion of your Initial Knowledge Check you will see your ALEKS Pie along with quick tips that describe how it works and how to use it. The ALEKS Pie will display the number of topics mastered per pie slice and the overall mastery percent in the class based on the Initial Knowledge Check. Clicking on an individual pie slice will give specific information about the topics in that slice.

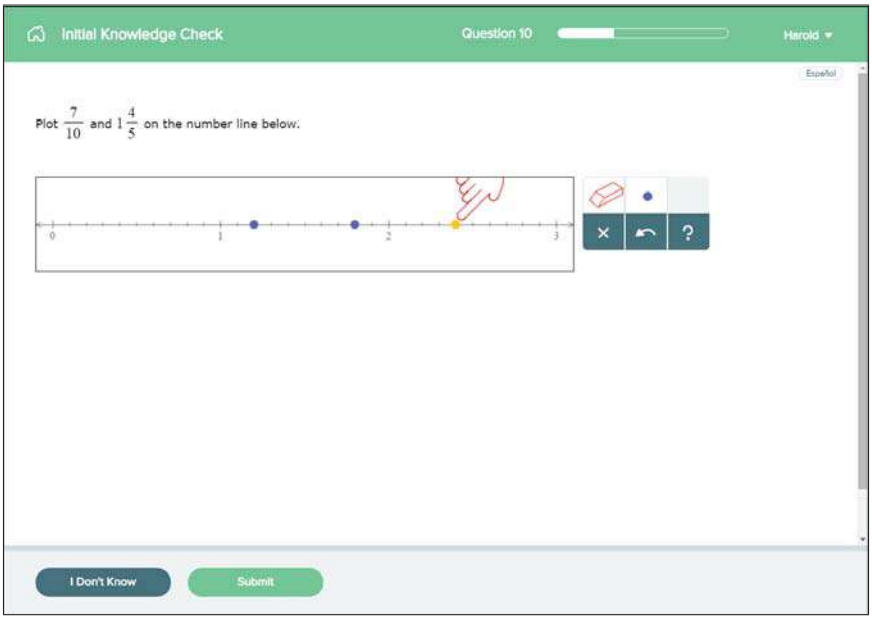

Figure A.4: Knowledge Check

A.4.3 Knowledge Checks and Your Learning

The purpose of Knowledge Checks in ALEKS is to throughout your learning path to confirm that you have retained material previously learned and to provide review and reinforcement when it is needed. New Knowledge Checks occur at regular intervals (typically 20 new topics learned or 10 hours in the system), or after the completion or due date of an Objective. Note that any new Knowledge Check "resets the clock," so that they don't occur one after another.

You can see when your next Knowledge Check is coming up by clicking on the Knowledge Check icon on your Home page, next to the Timeline/ALEKS Pie switch. When it is time for the Knowledge Check, you will see a notification, and you will have 24 hours to begin it (the exact period may be different if your instructor sets it differently for your class). Before beginning the Knowledge Check, you may wish to review by clicking on **Review for Knowledge Check**; this option appears under the Knowledge Check notification and on your Primary Guidance Menu.

It is important to make your best effort on the Knowledge Check! Do not rush or work when tired; remember you can always break off and resume the Knowledge Check later. As always, only use the **I don't know** button when you have no idea of the answer; it's always better to try to respond if you possibly can, since "I don't know" is counted as "incorrect." Note that you are likely to get at least a couple of questions that you haven't learned yet, due to the adaptive nature of the Knowledge Check mechanism.

Needs More Practice. It is also normal to lose some topics from your mastery count on a Knowledge Check. This simply means that those topics need additional

reinforcement; in most cases you will add them back quickly. ALEKS will present these topics in the beginning of the Topic Carousel under **Needs More Practice**.

A.5 Home

The first time you enter your ALEKS Home page you will be guided through an introduction giving a brief description of how ALEKS works. There are also pop-ups and animations that appear when you are seeing something in ALEKS for the first time, to ensure that you understand the interface and know how to use it.

The Home page includes some important information such as the name of the ALEKS class, progress bar, notifications, Main Navigation Menu (Sec. A.5.4), account Settings (Sec. A.5.5), Primary Guidance Menu (Sec. A.5.3), and next Knowledge Check indicator.

The Home page shows the Timeline by default (Sec. A.5.1), but you can switch to the ALEKS Pie view (Sec. A.5.2) to see your progress within each slice. The view last selected will appear as your Home Page the next time you log in.

At any point in ALEKS, you can click on the Home symbol or ALEKS icon in the upper left corner to return to the Home page.

A.5.1 ALEKS Timeline

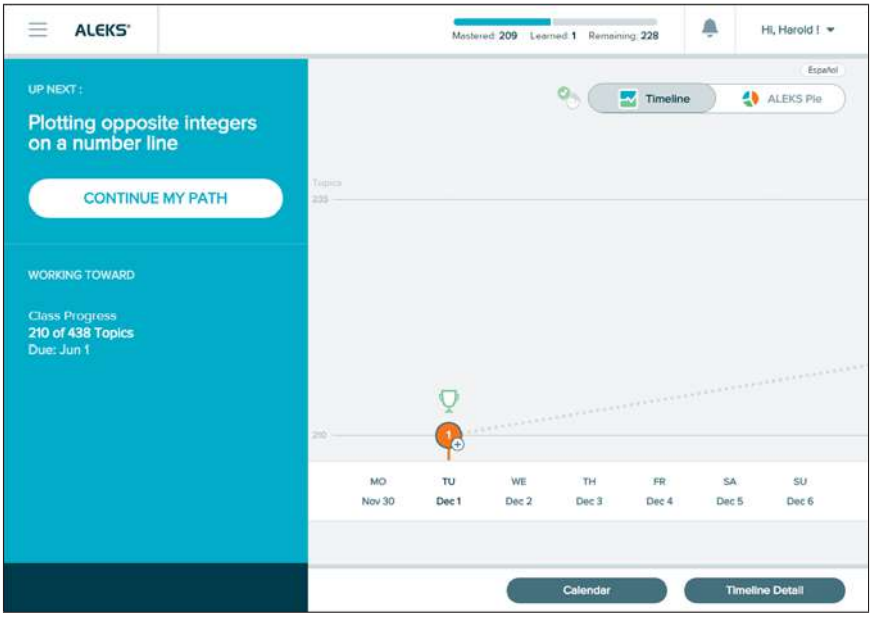

Figure A.5: ALEKS Timeline

The ALEKS Timeline is a visual tool that graphs your progress and growth over time. It helps you understand how to achieve learning goals and reach milestones. You can use the timeline to view what you worked on in the past, what's ahead, and when topics are due next so you can plan your class accordingly. As you learn or lose topics, the timeline is updated with real-time information.

Some key points about the timeline:

- The timeline is intended to show information at a macro level. You can select points on the graph to access information. For example, the blue goal topic marker is a projection to show what you are working towards next.
- The orange marker displays your progress today, and the number of topics you have left to reach the next goal on the timeline. It also shows what was completed on that day.
- The area below the timeline contains assignments created by the instructor, showing when the assignments start and end. You can select the assignment name to view detailed information. When there are multiple assignments available, they are stacked and prioritized by due dates.

You can select the **Timeline Detail** button to see a more detailed full-screen view and a longer time range than what is displayed on the Home page. You can filter the timeline by day, week, or month.

Timeline Icons	Past	Present/ Future	Timeline Icons	Past	Present/ Future
Objective Icons			Assignment (Homework)		
Goal (Topic)			Assignment (Quiz)		
Goal (Time)			Assignment (Test)		
Goal (Mastery)			Assignment (External)		
Knowledge Check			Assignment Worksheet		
QuickTables			Next Knowledge Check Indicator		

Figure A.6: Timeline Icons

For a key to the icons that may appear on the timeline, see Fig. A.6.

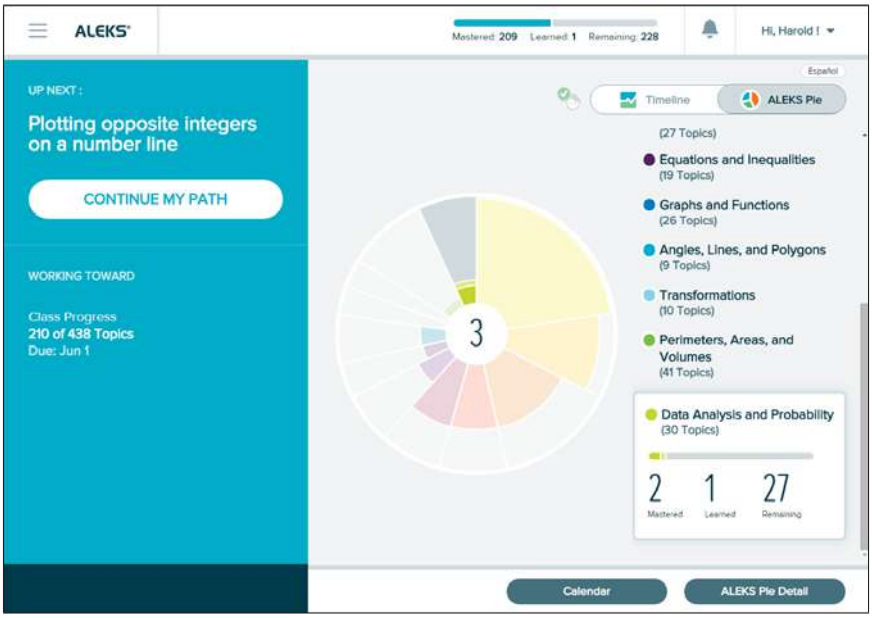

Figure A.7: ALEKS Pie

A.5.2 ALEKS Pie and Details

The ALEKS Pie view is an alternate Home page. You can switch back and forth between the Pie view and the Timeline; whichever you looked at last will appear as your Home page on your next login.

The ALEKS Pie allows you to see your overall progress toward completion of the class. Slices represent topic categories. Mastered, learned, and remaining topics are shown in different colors within each slice. Each pie slice is color-coded to match the list next to the ALEKS Pie. The darker color in the slice represents topics mastered, the lighter color represents topics learned, and the outer space without color represents the topics remaining to be learned and mastered (Fig. A.7).

You can view your progress in real time by selecting a pie slice. The area to the right is a legend that displays the slice name and the number of topics mastered, learned, and remaining in each category for the slice selected.

Mastered

The number of topics you have demonstrated mastery of in a Knowledge Check.

Learned

The number of topics that you have practiced successfully in Learning Mode but have not yet confirmed through a Knowledge Check.

Remaining

The number of topics you have left to learn.

The number in the middle of the ALEKS Pie is a counter that represents the total number of topics you have mastered or learned.

You can also click on the **ALEKS Pie Detail** button to see your class progress broken down by the topics that you are ready to learn, have learned, and have mastered in each slice. Category headings can be expanded to view progress and sample problems. The drop-down menu at the top of the report displays progress in Knowledge Checks. You can use this drop-down to track how they have performed across all Knowledge Checks in their class.

A.5.3 Primary Guidance Menu

The blue bar area on the left-hand side of the Home page is called the Primary Guidance Menu. This menu will show you the next topic in your path. You will also see your class progress and any upcoming assignments.

The Primary Guidance Menu displays the following features:

UP NEXT
: This section contains buttons such as **START MY PATH/CONTINUE MY PATH** to direct you to Learning Mode to practice problems that are Ready to Learn. The **GET STARTED/CONTINUE** button begins or continues an assignment.

WORKING TOWARD
: This section displays goals and what the student is working toward, including due dates.

WORK ON SOMETHING ELSE
: This section contains class assignments as they become available to work on.

A.5.4 Main Navigation Menu

The ALEKS Navigation Menu located in the upper-left corner of your screen provides easy access to features in the Student Module. Depending on your ALEKS class, you will see some or all of the following menu options displayed:

- Assignments (Sec. A.9)
- Worksheet
- Calendar
- Gradebook (Sec. A.10)
- Reports (Sec. A.8)
- Message Center (Sec. A.7)
- Class Forum

- Dictionary
- Instructor Resources
- QuickTables (Sec. A.12)
- Manage My Classes (Secs. A.11.1 and A.11.2)

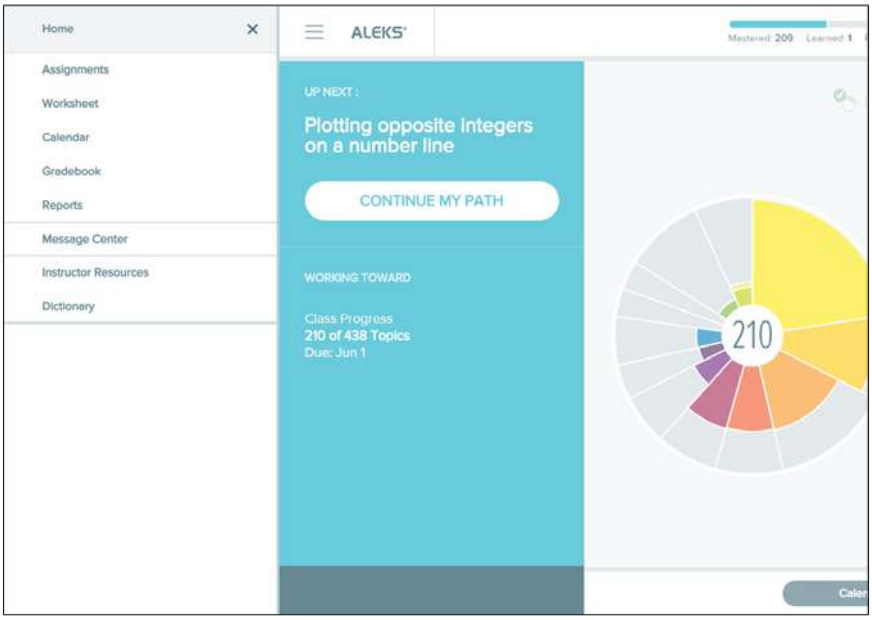

Figure A.8: Main Navigation Menu

When the menu is open, you can return to the Home page by selecting Home or by clicking the **X**. (Fig. A.8).

A.5.5 Settings

You can access your account settings and log out of ALEKS by selecting the down arrow in the upper-right corner by your name. On the Settings page, you have the option to have ALEKS messages forwarded to your email address; if you did not provide one during Registration, you can put it in now.

A.6 Learning Mode

In Learning Mode you can practice Ready to Learn topics and review previously learned and mastered topics. To access Learning Mode, go to the Primary Guidance Menu and select **START MY PATH**.

A.6.1 Learning Page/Problem Page/Explanation Page

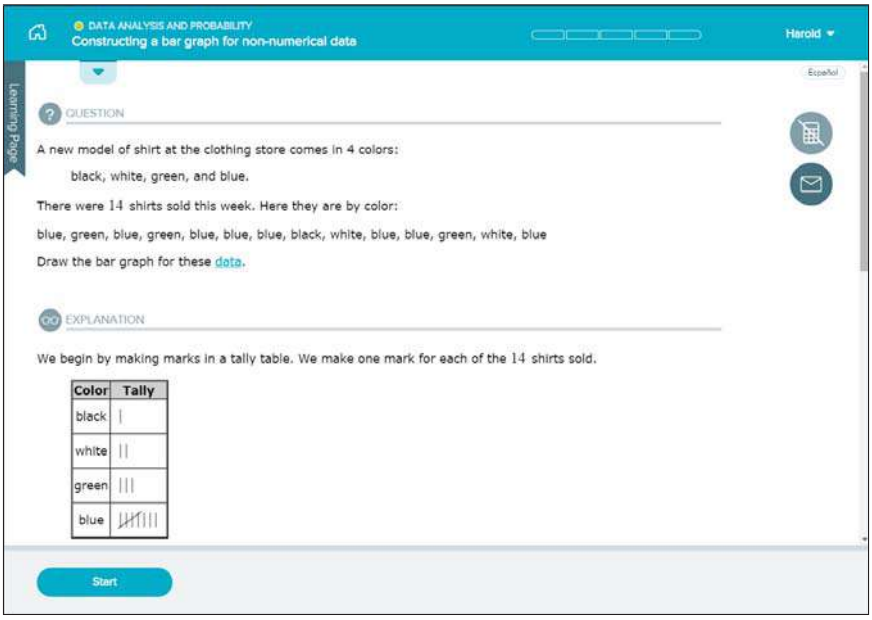

Figure A.9: Learning Page

The following pages are available in Learning Mode:

Learning Page

The ALEKS Learning Page provides a sample problem for the current topic, with detailed explanation and answer (Fig. A.9). After reviewing the Learning Page, select the **Start** button to move to the first problem.

Problem Page

The ALEKS Problem Page displays a problem for the current topic. Enter your answer in the space provided and then select the **Check** button at the bottom of the screen. If your answer is correct, ALEKS will display the message **Correct** on the screen. If your answer is incorrect, you will be given the opportunity to correct the answer and then select the **re-check** button.

Explain Page

If you are not sure how to answer a problem, you can click on the **Explanation** button at the bottom of the screen. This will take you to the Explanation page showing detailed information about how to solve the problem. For some topics an **Additional Explanation** link will be available showing another method of solving the problem.

Resources

Resources on the right hand side of the Problem Pages and Explain Pages are provided to help you solve the problem. These may include tools such as a calculator,

an eBook link, the ALEKS dictionary, and the Message Center.

A.6.2 Progress Indicator

Mastery of problems is based on a point system: one point added for a correct answer, two points added for two correct in a row without using the Explanation page, and one point subtracted for an incorrect answer. The number of points cannot go below zero. ALEKS considers a topic learned when a student earns a total of five points for that topic. The bars in the progress indicator represent how many points you have earned for the current topic (top right of the Learning Page). The progress bars change color to show how the topic is going: green to show success, yellow, orange, and red to indicate difficulty.

A.6.3 Topic Carousel

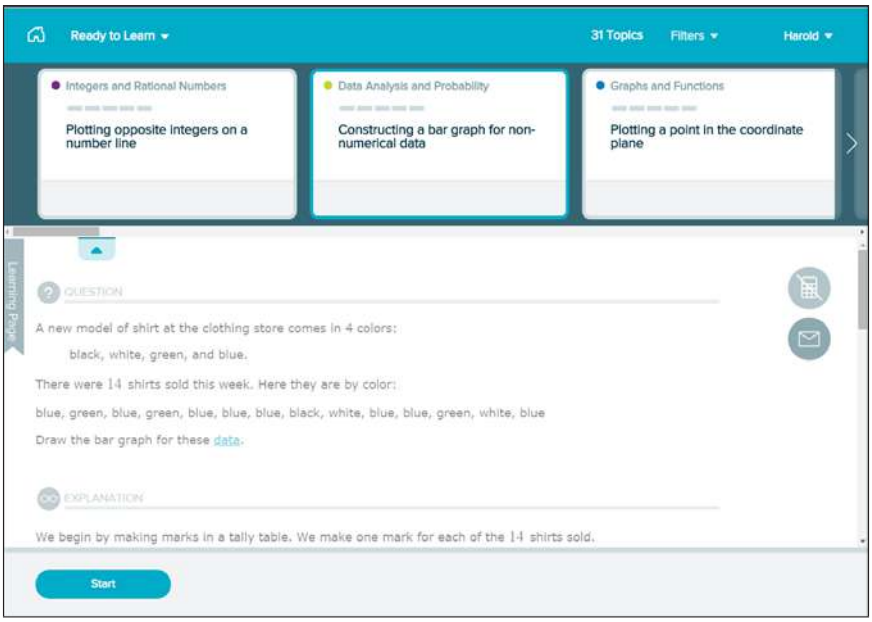

Figure A.10: Topic Carousel

In Learning Mode you can access the Topic Carousel by selecting the downward arrow tab in the upper left corner of your screen (Fig. A.10). The Carousel lists topics that you are currently ready to learn, sorted by degree of difficulty or complexity, with the most accessible first. Each topic has its own card containing the slice name, the topic name, and attributes (if any) indicated by icons (Fig. A.11). The Topic Carousel shows three cards at a time and is scrolled using the scroll bar or the back/forward arrows.

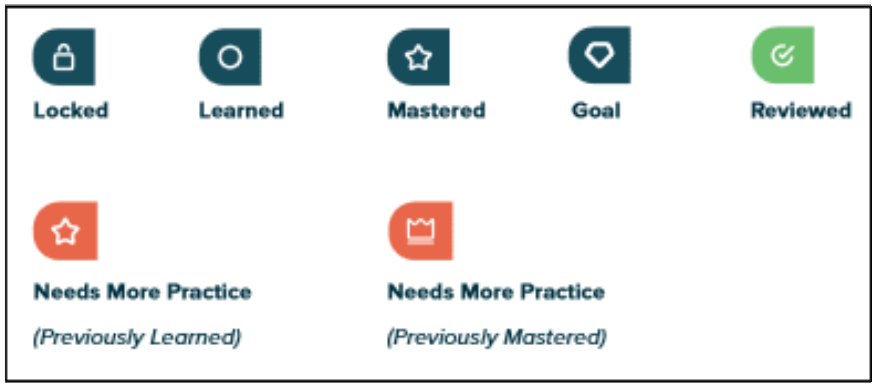

Figure A.11: Topic Icons

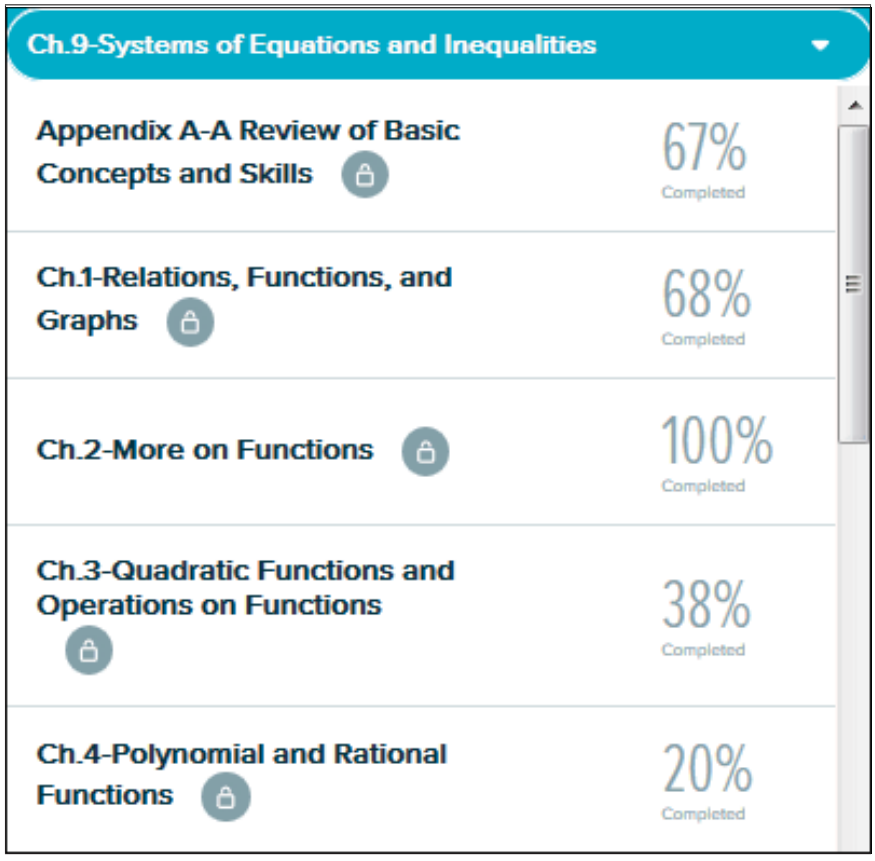

Figure A.12: Objectives/Ready to Learn Drop-Down Menu

Filters

You can filter topics by selecting **Filters** in the upper right corner of the screen (Fig. A.10). The Filters feature lets you search for topics by name and type.

Switching Topics

You can switch topics at any time by selecting a new topic card in the Topic Carousel. When you select a card, a sample problem is previewed in the bottom half of the window. Switching topics mid-way through a topic will not cause you to lose work; when you return to the topic, ALEKS will resume where you left off.

Objectives/Ready to Learn Drop-Down Menu

The drop-down menu above the Topic Carousel allows you to see progress in Objectives (if used in the class) or Ready to Learn pie slices. To see this drop-down menu, select the Ready to Learn/Objectives drop-down menu in the upper left (Fig. A.12).

Review

You can review previously-learned topics by choosing **Review** (rather than **Ready to Learn**) in the filter. Note that you will also be prompted to review when you receive the notification for a new Knowledge Check (Sec. A.4.3).

A.6.4 Classes with Objectives

Objectives are sections of the material in your class, similar to chapters in a textbook or units or modules in a lecture course. If your ALEKS class uses Objectives, they will be in a definite order and you will need to work through them in that order. They may have individual due dates, or there may be one due date for all the Objectives; the following paragraphs explain how the Objectives work on both cases. Note that when the next Objective begins, you will be notified by tool tips appearing on the Home page and in the Topic Carousel.

Objectives with Due Dates

In Learning Mode, the Topic Carousel will display Ready to Learn topics in the current Objective. If you complete the current Objective before the scheduled due date, you will move into Open Pie Mode, which unlocks all Ready to Learn topics until the start of the next Objective. During this time, you can return to previous Objectives and work on topics you did not learn or may have lost during a Knowledge Check. For example, if you missed an Objective, did not complete all topics in an Objective by the due date, or lost topics from previous Objectives in a Knowledge Check, you can go back to the previous Objectives and learn or re-learn those topics. After you learn all topics in a given Objective, the Topic Carousel will be empty. You can select another Objective to work on from the Objectives drop-down menu, or use the review filter to practice previously learned and mastered topics in the selected Objective.

Objectives with One Final Due Date

In Learning Mode, the Topic Carousel will display Ready to Learn topics in the current Objective. The Objectives drop-down menu conveniently displays the breakdown for the number of topics that must be learned to complete the current Objective. Future Objectives are locked. Completing the current Objective at the level specified by your instructor (e.g., 90%) will unlock the next Objective.

A.6.5 Locked Topics

Some topics that appear in the Topic Carousel may be locked. This occurs when there is one or more prerequisite topic that must be learned prior to attempting the topic. A lock icon appears in the topic card to distinguish the locked topics.

A.7 Message Center

The Message Center allows you to send messages to your instructor if you need assistance with a topic or problem in ALEKS. To compose a message, click the Navigation Menu in the upper left corner of your screen. Next, click the **Message Center** link and select the **Compose** button to create an email.

To include mathematical notation and illustrations:

1. Click the **Math** or **Graphs** tab at the right end of the tool bar. This switches you to the Enhanced message editor, with a robust set of math input tools.
2. Click on the **Graphs** tab for graphing tools, or on **Algebra**, **Trig**, **Matrix**, or **Stat** for symbolism specific to these areas.

While working in the Learning Mode, you can send a specific problem to your instructor for assistance. This will include a link in the message, showing a screenshot of the practice problem that you see on your screen.

To attach a specific problem, with the problem on the screen:

1. Click on the **Envelope** icon (located on the right-hand side of the screen). This will take you into the ALEKS Message Center. The system will automatically be in the **Compose** mode.
2. Fill in the **Subject** line and any details you want included in your message.
3. Below the body message section, the system will automatically check the box next to **Attach Page** to include the current problem. Uncheck this box if you don't want the page attached to your message.
4. Click on the **Send** button to send the message.

You can also include attachments of up to 2MB in your messages.

A.8 Reports

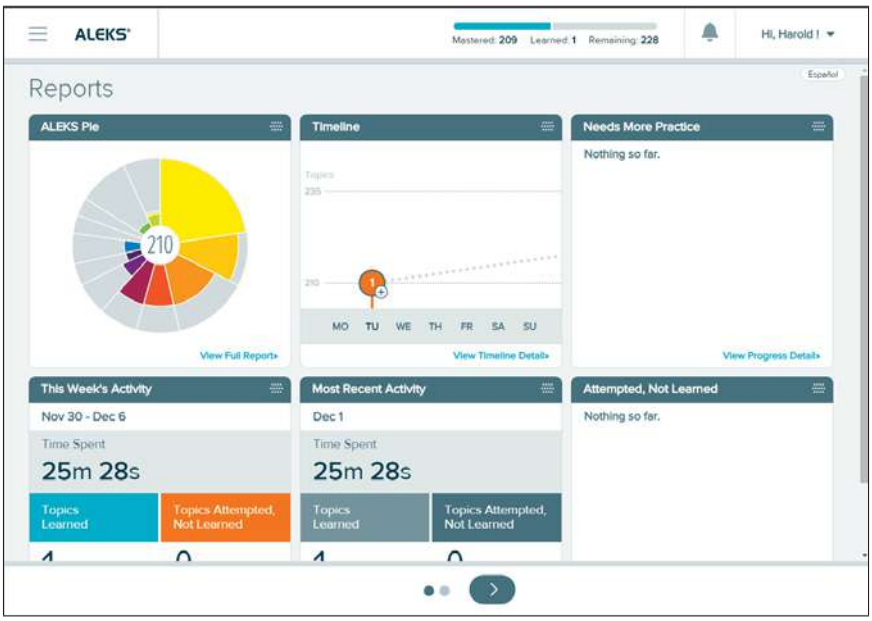

Figure A.13: Report Dashboard

You can access a wide range of reports in your ALEKS account by selecting the Main Navigation Menu in the upper left corner and then selecting **Reports**.

The Report dashboard displays quick overviews of important data applicable to your progress in ALEKS (Fig. A.13). You can move the tiles around by selecting the icon in the upper-right corner of a tile. Selecting **View Full Report** on a tile will give you more detailed information about that report.

Reports that may be available in your account include:

- ALEKS Pie (Sec. A.5.2)
- Timeline (Sec. A.5.1)
- Progress History (Sec. A.8.1)
- Time and Topic Report (Sec. A.8.2)
- Objective Details Report (Sec. A.8.3)
- QuickTables Report (Sec. A.8.4)

A.8.1 Progress History

This report shows your progress on Knowledge Checks and in Learning Mode. Clicking on the **Current Class** tab shows the progress for the current class. Clicking on the **All Classes** tab shows the progress for all classes that you have been enrolled in.

- The dark blue bar shows the content mastered based on your most recent Knowledge Check.
- The light blue bar shows progress made in Learning Mode since your last Knowledge Check.
- The gray bar shows the content remaining to be learned.

A.8.2 Time and Topic Report

This report gives a daily breakdown of time spent in ALEKS. The view can be adjusted to a weekly, monthly, or cumulative view or to a specific date range.

- Hover over a bar to see how much time was spent and which topics were attempted and learned on a given day.
- Select a bar to view the Learning Sequence Log, which shows the sequence of actions you followed to learn the topic, including the exact problems practiced and the answers entered.
- Select the magnifying glass icon to see the answer that you entered with the correct answer if different.

A.8.3 Objective Details Report

This report helps you track your progress towards Objective completion for classes set up to use Objectives. The report displays goal topics, prerequisite topics, and locked topics (topics not yet Ready to Learn). You can scroll through the Carousel to view details on past, current, or future objectives.

A.8.4 QuickTables Report

This report shows your progress in QuickTables (Sec. A.12) based on Knowledge Checks and Learning Mode. The report displays the following information:

- The total time spent in Quicktables since completion of the typing tutorial.
- The last login date.
- The date the last Knowledge Check was completed.

A.9 Assignments

The Assignments link on the Navigation Menu allows you to view all current, upcoming, and past assignments in your class. Assignments are displayed in a table that includes

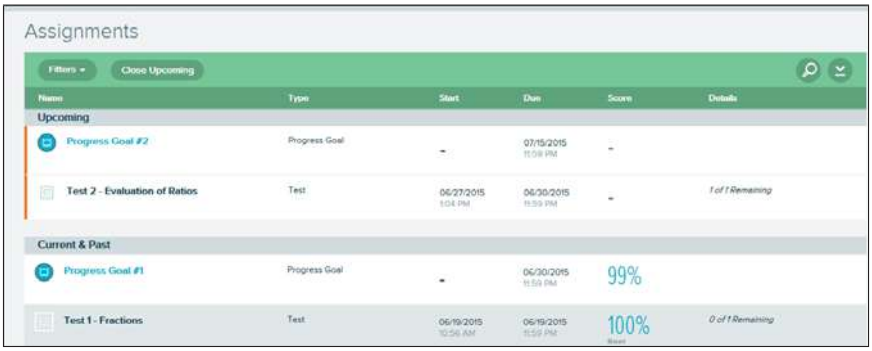

Figure A.14: Assignments

the assignment type, start date, due date, score, and details about the specific assignment. Assignments are sorted by due date. Assignments can be started by selecting an assignment name. ALEKS indicates when assignments are **In Progress** or **Saved for Later**; clicking on such assignments lets you pick up where you left off. Clicking on an assignment score (for assignments that have been completed) will display detailed information about that assignment (Fig. A.14).

A.10 Gradebook

Figure A.15: Student Gradebook

The ALEKS Gradebook allows you to check your overall grade in the class as well as individual assignment scores. The Gradebook link will be available on the Navigation Menu for classes where the Gradebook has been enabled. Selecting the Gradebook link displays assignments in your ALEKS class, e.g., tests, quizzes, and Objectives. You

can click on the Filters drop-down to customize the Gradebook display to show specific assignment types (Fig. A.15).

A.11 Student Account Home

Figure A.16: Student Account Home Main Screen

The Student Account Home groups all your ALEKS accounts under one profile with one Login Name and Password. When you log on to ALEKS, you will go directly to your currently active class unless there is more than one. If for any reason you have more than one active class, you will come to the Student Account Home, where you can click on the name of the class you wish to work in now.

The Student Account Home lists your current and past ALEKS classes, and includes options to sign up for new classes, switch classes, download summary reports, and continue working on an expired account as an independent user.

A.11.1 Account Management

When you log in to your ALEKS account, you arrive at the Student Account Home main screen.

Active Classes

All classes in which you have an active account will be listed here. You will see the name of the class, the name of the instructor, the date you last logged in to the account, and the date your access to the class will expire. Additional information can be accessed by clicking on the **Show more** link, including the Class Code, the Reference ID for the account, the date the account was started, the amount of time spent in the class, and the current level of progress.

Accessing a Class

You can access an active class by clicking on the class name. You will be taken to your Home page for that class and will be able to work on topics. To return

to the Student Account Home main screen, click on your name in the upper right corner and select the **Account home** option. To completely log out, choose the **Log out** option after clicking on your name.

Inactive Classes

The INACTIVE section will display a list of your classes that are no longer active. The same class information that is displayed in the ACTIVE courses is available here.

Adding a New Class

You can add a new class by clicking on the **+ NEW CLASS** button (Fig. A.16). You will be prompted to enter the class code for the new class. Once the new class has been added, it will be displayed in the ACTIVE section on the Student Account Home main page, along with any other active courses.

+ NEW CLASS creates a new account in a new class, using a new subscription; it does not transfer your current subscription to a different class. To transfer a currently active subscription to a different class (and set the previously active account to inactive), use **Switch class** (below, Sec. A.11.2).

Account Settings

To access your account settings, click on your name in the upper right corner of the Student Account Home main screen, and select **Account settings**. The pop-up window displays information both for the profile account and for the school that you attend. This information includes your name, Student ID number, and the email address linked to the account. The email address is the only editable entry. To return to the main screen, click on the **Save** button (if changes were made to the email address) or on the **Cancel** link.

A.11.2 Class Management

Different options are available, depending on whether a class is ACTIVE, INACTIVE, or Pending Instructor Authorization:

ACTIVE Class Options

The following options are available for ACTIVE classes:

Switch class. You can switch to a new class by entering a new class code. When you do this, the new class will become active and the previously active class will normally appear under INACTIVE (depending on the instructor's configuration of the class). If the new class uses the same course product or a closely related course product to the one you were in previously, your progress will be carried over; otherwise, a new Initial Knowledge Check will be required.

To begin a new class with a new subscription, leaving the current class active, use **+ NEW CLASS** (above, Sec. A.11.1).

INACTIVE Class Options

The following options are available for INACTIVE classes:

Summary Report. Clicking on this link will give you access to a PDF report displaying the pie chart and learning history progress achieved in the inactive class.

Continue this class on your own. You can continue your work in an inactive class as an independent user by clicking on the **Activate** link and following the prompts for purchase and registration. This option should only be used if you wish to use ALEKS independently; it will not allow you to continue within the regular school class you were previously enrolled in.

Pending Instructor Authorization

The following option is available for classes where you are waiting for your instructor to authorize your enrollment:

Switch class. If your instructor had you register your ALEKS account through the ALEKS website, using a class code, you may see your account pending authorization the first time you log in. If you mistakenly enrolled into the wrong class, you can switch into the correct class using the **Switch class** link and the class code of the class you need to move into.

A.12 QuickTables

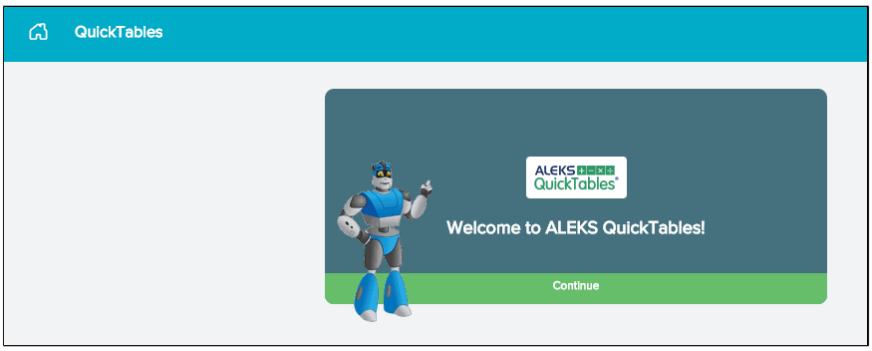

Figure A.17: ALEKS QuickTables

QuickTables is a special tool in ALEKS for learning the math facts of Addition, Subtraction, Multiplication, and Division. It is available where needed as a component in ALEKS classes or as a separate class in ALEKS.

When you log in to an ALEKS class where QuickTables is enabled, you will see the **QuickTables** link in the Main Navigation Menu. Clicking on this link will switch you into the QuickTables environment (Fig. A.17).

The first time you use QuickTables, you will have a short training session before starting to practice. The purpose of the training is to make sure that you are comfortable typing and entering numbers in ALEKS. There will be a series of quick drills in which you are asked to type numbers that appear on the screen. If you make a mistake, QuickTables

will stop to let you correct it. You can enter the numbers by pressing either your computer's Enter key or the Space bar (the long bar at the bottom of the keyboard).

You will need to enter the numbers quickly; QuickTables wants you to learn the math facts so well that you can answer easily and smoothly. If you prefer to click numbers using the onscreen keypad, contact your instructor to turn on this feature.

After this training, you will begin a Knowledge Check of what you know now about the math facts. Do not be anxious about this Knowledge Check; just relax and do your best. The results of the Knowledge Check will tell QuickTables where you should start off in your math facts table. **This Initial Knowledge Check must be finished in one login session. Logging out before it is complete will require restarting the test.**

You may have more than one table set up. If so, you will see different tabs on your screen with the names of the tables: Addition, Subtraction, Multiplication, Division. Simply click on the tab for the table you wish to work in. You will need to take a brief Knowledge Check when you first start working in any table.

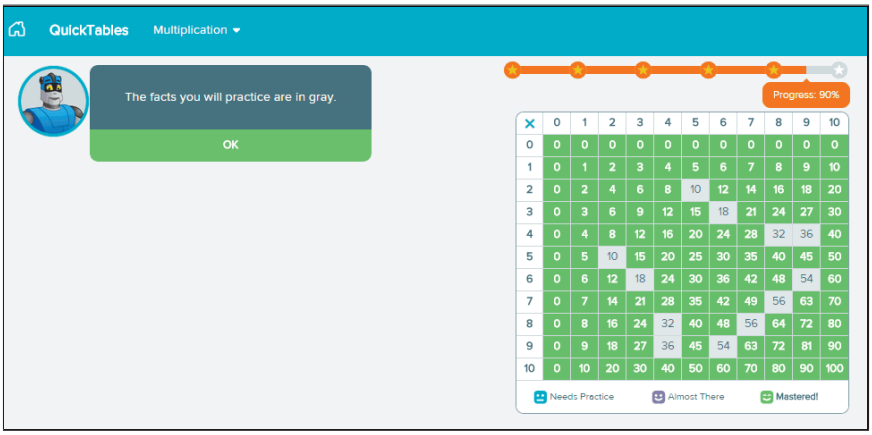

Figure A.18: QuickTables Learning Display

Once you finish the test, you will see a colored display that shows all the facts in the table (Fig. A.18). The colors in the cells show whether you have learned that fact, and how well you know it. In general, you will see that the colors fill in through the table diagonally, from the top left corner down. The **hardest** facts are the ones you get to last, in the lower right-hand corner.

Above the table is a Progress bar that gives your overall percentage of the table. Notice that there are gold stars on the bar. Every time you reach one of these stars, there will be a new game for you to play. You earn access to the games by the progress that you make filling in your table. Any time you want to play a game that you have earned, click on the **Games** link top right. These are fun games that give you extra practice on the math facts that you have been learning.

NOTE. You will only be able to use QuickTables for a certain amount of time on any day, and only a certain number of times per week. These limits are set for the best possible progress in learning and remembering math facts.

Appendix B

Programs in ALEKS

B.1 Arithmetic - 3

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
arith128 Adding or subtracting 10, 100, or 1000
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
arith682 Subtraction with multiple regrouping steps
arith637 Subtraction and regrouping with zeros
arith613 Word problem with addition or subtraction of whole numbers
arith126 Multiplication as repeated addition
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
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
arith614 Word problem with multiplication or division of whole numbers
arith023 Word problem with division of whole numbers and rounding
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
arith061 Rounding to thousands, ten thousands, or hundred thousands
arith123 Rounding to hundreds or 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
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
arith240 Word problem with common multiples
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
arith100 Fractional part of a circle
arith088 The reciprocal of a number
arith079 Product of a unit fraction and a whole number
arith119 Introduction to fraction multiplication
arith086 Product of a fraction and a whole number: Problem type 1

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

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
arith089 Converting a fraction to a repeating decimal
arith672 Converting a decimal to a mixed number
arith223 Converting a mixed number to a decimal
arith668 Addition with money
arith624 Addition of aligned decimals
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
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
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

Measurement and Geometry

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
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
time010 Telling time
unit012 Time unit conversion with whole number values
time008 Reading a calendar
time009 Introduction to adding time
time006 Adding time
time011 Introduction to elapsed time
time007 Elapsed time
arith063 Word problem with clocks
mstat024 Interpreting a bar graph
mstat044 Interpreting a double bar graph
mstat007 Interpreting a line graph
stat804 Interpreting a circle graph or pie chart
arith103 Average of two numbers
mstat001 Mean of a data set
geom866 Perimeter and area on a grid
geom300 Perimeter of a square or a rectangle
geom339 Perimeter of a polygon
geom019 Area of a square or a rectangle
geom221 Finding the missing length in a figure
geom340 Area of a piecewise rectangular figure
geom801 Area of a triangle
geom022 Area of a parallelogram
geom016 Circumference of a circle
geom802 Circumference and area of a circle
geom354 Volume of a rectangular prism made of unit cubes
geom311 Volume of a rectangular prism
geom031 Surface area of a cube or a rectangular prism

Proportions and Percents

arith663 Writing ratios for real-world situations
arith064 Solving a word problem on proportions using a unit rate
arith045 Word problem with powers of ten
arith122 Word problem on rates
arith073 Word problem with inverse proportion
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
arith120 Word problem on percentage: Problem type 2
arith121 Word problem on percentage: Problem type 3
arith232 Finding simple interest without a calculator

Signed Numbers and Exponents

mstat038 Reading the temperature from a thermometer
alge286 Plotting integers on a number line
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

arith231 Integer multiplication and division
arith117 Signed decimal addition and subtraction
arith234 Signed decimal addition and subtraction with 3 numbers
arith116 Signed fraction addition or subtraction: Basic
arith105 Signed fraction multiplication: Advanced
arith104 Operations with absolute value: Problem type 2
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
arith047 Evaluating expressions with exponents: Problem type 1
arith049 Evaluating expressions with exponents: Problem type 2
arith600 Order of operations with integers and exponents
arith029 Ordering numbers with positive exponents
arith024 Ordering numbers with negative exponents
arith042 Evaluating an expression with a negative exponent: Positive fraction base
arith043 Evaluating an expression with a negative exponent: Negative integer base
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
arith032 Square root addition or subtraction
arith039 Square root multiplication: Advanced

B.2 Arithmetic - 4

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geom016 Circumference of a circle
geom802 Circumference and area of a circle
geom354 Volume of a rectangular prism made of unit cubes
geom311 Volume of a rectangular prism
geom031 Surface area of a cube or a rectangular prism

Proportions and Percents

arith663 Writing ratios for real-world situations
arith064 Solving a word problem on proportions using a unit rate
arith045 Word problem with powers of ten
arith122 Word problem on rates
arith073 Word problem with inverse proportion
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
arith120 Word problem on percentage: Problem type 2
arith121 Word problem on percentage: Problem type 3
arith232 Finding simple interest without a calculator

Signed Numbers and Exponents

mstat038 Reading the temperature from a thermometer
alge286 Plotting integers on a number line
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
arith231 Integer multiplication and division
arith117 Signed decimal addition and subtraction
arith234 Signed decimal addition and subtraction with 3 numbers
arith116 Signed fraction addition or subtraction: Basic
arith105 Signed fraction multiplication: Advanced
arith104 Operations with absolute value: Problem type 2
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
arith047 Evaluating expressions with exponents: Problem type 1
arith049 Evaluating expressions with exponents: Problem type 2
arith600 Order of operations with integers and exponents
arith029 Ordering numbers with positive exponents
arith024 Ordering numbers with negative exponents
arith042 Evaluating an expression with a negative exponent: Positive fraction base
arith043 Evaluating an expression with a negative exponent: Negative integer base
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
arith032 Square root addition or subtraction
arith039 Square root multiplication: Advanced

B.3 Arithmetic - 5

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
arith128 Adding or subtracting 10, 100, or 1000
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
arith682 Subtraction with multiple regrouping steps

arith637 Subtraction and regrouping with zeros
arith613 Word problem with addition or subtraction of whole numbers
arith126 Multiplication as repeated addition
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
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
arith614 Word problem with multiplication or division of whole numbers
arith023 Word problem with division of whole numbers and rounding
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
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
arith240 Word problem with common multiples
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
arith100 Fractional part of a circle
arith088 The reciprocal of a number
arith079 Product of a unit fraction and a whole number
arith119 Introduction to fraction multiplication
arith086 Product of a fraction and a whole number: Problem type 1
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

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
arith089 Converting a fraction to a repeating decimal
arith672 Converting a decimal to a mixed number
arith223 Converting a mixed number to a decimal
arith668 Addition with money
arith624 Addition of aligned decimals
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
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
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

Measurement and Geometry

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
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
time010 Telling time
unit012 Time unit conversion with whole number values
time008 Reading a calendar
time009 Introduction to adding time
time006 Adding time
time011 Introduction to elapsed time
time007 Elapsed time
arith063 Word problem with clocks
mstat024 Interpreting a bar graph
mstat044 Interpreting a double bar graph
mstat007 Interpreting a line graph
stat804 Interpreting a circle graph or pie chart
arith103 Average of two numbers
mstat001 Mean of a data set
geom866 Perimeter and area on a grid
geom300 Perimeter of a square or a rectangle
geom339 Perimeter of a polygon
geom019 Area of a square or a rectangle
geom221 Finding the missing length in a figure
geom340 Area of a piecewise rectangular figure
geom801 Area of a triangle
geom022 Area of a parallelogram
geom016 Circumference of a circle
geom802 Circumference and area of a circle
geom354 Volume of a rectangular prism made of unit cubes
geom311 Volume of a rectangular prism
geom031 Surface area of a cube or a rectangular prism

Proportions and Percents

arith663 Writing ratios for real-world situations
arith064 Solving a word problem on proportions using a unit rate
arith045 Word problem with powers of ten
arith122 Word problem on rates
arith073 Word problem with inverse proportion
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

arith120 Word problem on percentage: Problem type 2
arith121 Word problem on percentage: Problem type 3
arith232 Finding simple interest without a calculator

Signed Numbers and Exponents

mstat038 Reading the temperature from a thermometer
alge286 Plotting integers on a number line
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
arith231 Integer multiplication and division
arith117 Signed decimal addition and subtraction
arith234 Signed decimal addition and subtraction with 3 numbers
arith116 Signed fraction addition or subtraction: Basic
arith105 Signed fraction multiplication: Advanced
arith104 Operations with absolute value: Problem type 2
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
arith047 Evaluating expressions with exponents: Problem type 1
arith049 Evaluating expressions with exponents: Problem type 2
arith600 Order of operations with integers and exponents
arith029 Ordering numbers with positive exponents
arith024 Ordering numbers with negative exponents
arith042 Evaluating an expression with a negative exponent: Positive fraction base
arith043 Evaluating an expression with a negative exponent: Negative integer base
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
arith032 Square root addition or subtraction
arith039 Square root multiplication: Advanced

B.4 Arithmetic - 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
arith128 Adding or subtracting 10, 100, or 1000
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
arith682 Subtraction with multiple regrouping steps
arith637 Subtraction and regrouping with zeros
arith613 Word problem with addition or subtraction of whole numbers
arith126 Multiplication as repeated addition
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
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
arith614 Word problem with multiplication or division of whole numbers
arith023 Word problem with division of whole numbers and rounding
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
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
arith240 Word problem with common multiples
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
arith100 Fractional part of a circle
arith088 The reciprocal of a number
arith079 Product of a unit fraction and a whole number
arith119 Introduction to fraction multiplication
arith086 Product of a fraction and a whole number: Problem type 1
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

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
arith089 Converting a fraction to a repeating decimal
arith672 Converting a decimal to a mixed number
arith223 Converting a mixed number to a decimal
arith668 Addition with money
arith624 Addition of aligned decimals
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
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
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

Measurement and Geometry

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
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
time010 Telling time
unit012 Time unit conversion with whole number values
time008 Reading a calendar
time009 Introduction to adding time
time006 Adding time
time011 Introduction to elapsed time
time007 Elapsed time
arith063 Word problem with clocks
mstat024 Interpreting a bar graph
mstat044 Interpreting a double bar graph
mstat007 Interpreting a line graph
stat804 Interpreting a circle graph or pie chart
arith103 Average of two numbers
mstat001 Mean of a data set
geom866 Perimeter and area on a grid
geom300 Perimeter of a square or a rectangle
geom339 Perimeter of a polygon
geom019 Area of a square or a rectangle
geom221 Finding the missing length in a figure
geom340 Area of a piecewise rectangular figure
geom801 Area of a triangle
geom022 Area of a parallelogram
geom016 Circumference of a circle
geom802 Circumference and area of a circle
geom354 Volume of a rectangular prism made of unit cubes
geom311 Volume of a rectangular prism
geom031 Surface area of a cube or a rectangular prism

Proportions and Percents

arith663 Writing ratios for real-world situations
arith064 Solving a word problem on proportions using a unit rate
arith045 Word problem with powers of ten

arith122 Word problem on rates
arith073 Word problem with inverse proportion
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
arith120 Word problem on percentage: Problem type 2
arith121 Word problem on percentage: Problem type 3
arith232 Finding simple interest without a calculator

Signed Numbers and Exponents

mstat038 Reading the temperature from a thermometer
alge286 Plotting integers on a number line
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
arith231 Integer multiplication and division
arith117 Signed decimal addition and subtraction
arith234 Signed decimal addition and subtraction with 3 numbers
arith116 Signed fraction addition or subtraction: Basic
arith105 Signed fraction multiplication: Advanced
arith104 Operations with absolute value: Problem type 2
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
arith047 Evaluating expressions with exponents: Problem type 1
arith049 Evaluating expressions with exponents: Problem type 2
arith600 Order of operations with integers and exponents
arith029 Ordering numbers with positive exponents
arith024 Ordering numbers with negative exponents
arith042 Evaluating an expression with a negative exponent: Positive fraction base
arith043 Evaluating an expression with a negative exponent: Negative integer base
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
arith032 Square root addition or subtraction
arith039 Square root multiplication: Advanced

B.5 MS RtI Screening Assessment

Whole Numbers

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
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
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
arith632 Multiplication with trailing zeros: Problem type 1
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
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
arith614 Word problem with multiplication or division of whole numbers
arith651 Introduction to inequalities
arith077 Ordering large numbers
arith078 Rounding to tens or hundreds
arith061 Rounding to thousands, ten thousands, or hundred thousands
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

Fractions

arith623 Introduction to fractions
arith212 Equivalent fractions
arith666 Introduction to simplifying a fraction
arith067 Simplifying a fraction
arith044 Ordering fractions with the same denominator
arith092 Using a common denominator to order fractions
arith687 Fractional position on a number line
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
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
arith694 Division involving a whole number and a fraction
arith022 Fraction division
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

Decimals

arith221 Rounding decimals
arith129 Introduction to ordering decimals
arith608 Ordering decimals
arith670 Converting a decimal to a fraction: Basic
arith671 Converting a fraction with a denominator of 10, 100, or 1000 to a decimal
arith222 Converting a fraction to a terminating decimal
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
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
arith629 Word problem with multiple decimal operations: Problem type 2

Geometry

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
geom019 Area of a square or a rectangle
geom217 Finding the side length of a rectangle given its perimeter or area
geom022 Area of a parallelogram
geom016 Circumference of a circle
geom311 Volume of a rectangular prism
geom354 Volume of a rectangular prism made of unit cubes

Measurement and Data

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
unit001 Metric distance conversion with whole number values
unit002 Metric mass or capacity conversion with whole number values

unit034 Converting between metric and U.S. Customary unit systems
unit012 Time unit conversion with whole number values
time009 Introduction to adding time
time006 Adding 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

Proportions, Percents, and Probability

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
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
arith074 Finding the sale price without a calculator given the original price and percent discount
mstat026 Introduction to the probability of an event
mstat010 Probability of an event
mstat042 Interpreting a Venn diagram of 2 sets

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
alge010 Additive property of equality with integers
alge813 Introduction to solving an equation with multiplication or division
alge008 Multiplicative property of equality with whole numbers
alge797 Multiplicative property of equality with integers
alge803 Using two steps to solve an equation with whole numbers
alge006 Solving a two-step equation with integers
alge802 Solving a fraction word problem using a linear equation of the form Ax = B
alge281 Function tables with one-step rules
alge282 Function tables with two-step rules
alge278 Reading a point in quadrant 1
alge067 Plotting a point in the coordinate plane
alge280 Graphing a line in quadrant 1
arith233 Introduction to exponents
arith692 Writing expressions using exponents
arith683 Power of 10: Positive exponent

arith702 Exponents and integers: Problem type 1

B.6 LV3

Place Value and Money

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
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
arith660 Finding the value of a collection of coins
arith661 Finding the value of a collection of bills and coins

Addition and Subtraction

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
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
arith128 Adding or subtracting 10, 100, or 1000
arith613 Word problem with addition or subtraction of whole numbers
arith101 Estimating a sum of whole numbers
arith102 Estimating a difference of whole numbers
arith653 Fact families for addition and subtraction
arith655 Introduction to properties of addition
alge284 Evaluating an algebraic expression: Whole number addition or subtraction
alge009 Additive property of equality with whole numbers

Multiplication and Division

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
arith632 Multiplication with trailing zeros: Problem type 1
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
arith130 Word problem with multiplication and addition or subtraction of whole numbers
arith075 Division facts
arith052 Division without carry
arith005 Division with carry
arith680 Division with trailing zeros: Problem type 1
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
arith614 Word problem with multiplication or division of whole numbers
arith677 Estimating a product
arith678 Estimating a quotient
arith645 Introduction to parentheses
arith658 Filling in missing operations to make an equation
arith654 Fact families for multiplication and division
arith656 Introduction to properties of multiplication
alge683 Evaluating an algebraic expression: Whole number multiplication or division
alge813 Introduction to solving an equation with multiplication or division
arith056 Factors
arith646 Even and odd numbers
arith647 Divisibility rules for 2, 5, and 10
alge807 Finding the next terms of a sequence with whole numbers
alge281 Function tables with one-step rules
mstat061 Describing an increasing or decreasing pattern from a table of values

Geometry, Measurement, and Graphs

geom349 Naming segments, rays, and lines
geom358 Identifying parallel and perpendicular lines
geom303 Acute, obtuse, and right angles
geom361 Naming polygons
geom306 Acute, obtuse, and right triangles
geom300 Perimeter of a square or a rectangle
geom339 Perimeter of a polygon
geom866 Perimeter and area on a grid
geom019 Area of a square or a rectangle
geom867 Identifying parallelograms, rectangles, and squares
geom868 Classifying solids
geom354 Volume of a rectangular prism made of unit cubes
geom348 Vertices, edges, and faces of a solid
geom219 Nets of solids
geom359 Identifying congruent shapes on a grid
geom360 Identifying similar or congruent shapes on a grid
geom357 Identifying transformations
geom334 Drawing lines of symmetry
alge732 Finding patterns in shapes
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
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
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
time008 Reading a calendar
unit012 Time unit conversion with whole number values
time009 Introduction to adding time
time011 Introduction to elapsed time
alge278 Reading a point in quadrant 1
alge279 Plotting a point in quadrant 1
mstat056 Interpreting a tally table
mstat005 Constructing a bar graph for non-numerical data
mstat024 Interpreting a bar graph
mstat057 Interpreting a pictograph table
mstat037 Constructing a line plot
mstat007 Interpreting a line graph
mstat042 Interpreting a Venn diagram of 2 sets
mstat055 Finding the mode and range of a data set
mstat040 Introduction to the counting principle
mstat054 Classifying likelihood
mstat026 Introduction to the probability of an event

Fractions and Decimals

arith623 Introduction to fractions
arith665 Understanding equivalent fractions
arith212 Equivalent fractions
arith666 Introduction to simplifying a fraction
arith662 Writing a mixed number and an improper fraction for a shaded region
arith044 Ordering fractions with the same denominator
arith091 Ordering fractions with the same numerator
arith618 Addition or subtraction of fractions with the same denominator
arith079 Product of a unit fraction and a whole number
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
arith129 Introduction to ordering decimals
arith608 Ordering decimals
arith670 Converting a decimal to a fraction: Basic
arith671 Converting a fraction with a denominator of 10, 100, or 1000 to a decimal
arith624 Addition of aligned decimals
arith013 Decimal addition with 3 numbers
arith668 Addition with money
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

B.7 LV4

Number Sense, Addition, and Subtraction

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
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
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
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
arith101 Estimating a sum of whole numbers
arith102 Estimating a difference of whole numbers
arith653 Fact families for addition and subtraction
arith655 Introduction to properties of addition

Multiplication and Division

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
arith632 Multiplication with trailing zeros: Problem type 1
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
arith615 Introduction to multiplication of large numbers
arith638 Multiplication with trailing zeros: Problem type 2
arith014 Multiplication of large numbers
arith130 Word problem with multiplication and addition or subtraction of whole numbers
arith075 Division facts
arith052 Division without carry
arith005 Division with carry
arith680 Division with trailing zeros: Problem type 1
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
arith614 Word problem with multiplication or division of whole numbers
arith631 Quotient and remainder: Problem type 3
arith649 Division with trailing zeros: Problem type 2
arith023 Word problem with division of whole numbers and rounding
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

arith657 Understanding the distributive property
arith652 Comparing a numerical expression with a number
arith654 Fact families for multiplication and division
arith658 Filling in missing operations to make an equation
arith656 Introduction to properties of multiplication
alge807 Finding the next terms of a sequence 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
arith033 Greatest common factor of 2 numbers
arith070 Least common multiple of 2 numbers
arith034 Prime numbers
arith035 Prime factorization

Fractions, Time, and Customary Measurement

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
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
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
time010 Telling time
unit012 Time unit conversion with whole number values
time008 Reading a calendar
time009 Introduction to adding time
time006 Adding time
time011 Introduction to elapsed time
time007 Elapsed time
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
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

Decimals, Money, and Metric Measurement

arith660 Finding the value of a collection of coins
arith661 Finding the value of a collection of bills and coins
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
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
arith674 Finding the percentage of a grid that is shaded
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

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
geom361 Naming polygons
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
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
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
geom351 Areas of rectangles with the same perimeter
geom340 Area of a piecewise rectangular figure
geom869 Estimates and exact answers
alge732 Finding patterns in shapes
geom347 Introduction to a circle: Diameter, radius, and chord
geom311 Volume of a rectangular prism
geom354 Volume of a rectangular prism made of unit cubes
geom868 Classifying solids
geom348 Vertices, edges, and faces of a solid
geom219 Nets of solids
geom359 Identifying congruent shapes on a grid
geom360 Identifying similar or congruent shapes on a grid

geom355 Introduction to translations
geom356 Introduction to reflections
geom357 Identifying transformations
geom334 Drawing lines of symmetry

Algebra, Graphs, and Probability

mstat004 Constructing a histogram for numerical data
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
mstat031 Interpreting a stem-and-leaf plot
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
mstat041 Interpreting a tree diagram
mstat040 Introduction to the counting principle
mstat054 Classifying likelihood
mstat039 Understanding likelihood
mstat026 Introduction to the probability of an event
mstat010 Probability of an event
mstat042 Interpreting a Venn diagram of 2 sets
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
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
alge813 Introduction to solving an equation with multiplication or division
alge008 Multiplicative property of equality with whole numbers
alge733 Writing a one-step expression for a real-world situation
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
alge283 Graphing whole number functions
alge280 Graphing a line in quadrant 1

B.8 LV5

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
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
arith641 Multiples: Problem type 1
arith642 Multiples: Problem type 2
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
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
arith103 Average of two numbers
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
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
arith240 Word problem with common multiples
arith655 Introduction to properties of addition
arith656 Introduction to properties of multiplication
arith657 Understanding the distributive property
arith653 Fact families for addition and subtraction
arith654 Fact families for multiplication and division
arith658 Filling in missing operations to make an equation
alge807 Finding the next terms of a sequence with whole numbers

Fractions and Proportions

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
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
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
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
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
unit034 Converting between metric and U.S. Customary unit systems

Decimals 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
arith221 Rounding decimals
arith129 Introduction to ordering decimals
arith608 Ordering decimals
arith609 Ordering fractions and 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
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
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
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
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
arith069 Writing a ratio as a percentage without a calculator
arith030 Finding a percentage of a whole number without a calculator: Basic
arith074 Finding the sale price without a calculator given the original price and percent discount
arith232 Finding simple interest without a calculator

Geometry and Measurement

geom151 Measuring an angle with the protractor
geom152 Drawing an angle with the protractor
geom303 Acute, obtuse, and right angles
geom159 Constructing congruent angles
geom158 Constructing an angle bisector
geom349 Naming segments, rays, and lines
geom358 Identifying parallel and perpendicular lines
geom154 Constructing the perpendicular bisector of a line segment
geom361 Naming polygons
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
geom908 Finding an angle measure for a triangle with an extended side
geom870 Sum of the angle measures of a quadrilateral
geom867 Identifying parallelograms, rectangles, and squares
geom310 Properties of quadrilaterals

geom532 Classifying parallelograms
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
geom866 Perimeter and area on a grid
geom019 Area of a square or a rectangle
geom217 Finding the side length of a rectangle given its perimeter or area
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
geom022 Area of a parallelogram
geom023 Area of a trapezoid
geom347 Introduction to a circle: Diameter, radius, and chord
geom016 Circumference of a circle
geom802 Circumference and area of a circle
geom869 Estimates and exact answers
alge732 Finding patterns in shapes
geom868 Classifying solids
geom354 Volume of a rectangular prism made of unit cubes
geom311 Volume of a rectangular prism
geom090 Volume of a triangular prism
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
geom219 Nets of solids
geom348 Vertices, edges, and faces of a solid
geom816 Side views of a solid made of cubes
geom359 Identifying congruent shapes on a grid
geom360 Identifying similar or congruent shapes on a grid
geom037 Similar polygons
geom355 Introduction to translations
geom356 Introduction to reflections
geom357 Identifying transformations
geom334 Drawing lines of symmetry
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
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
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
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
time010 Telling time
time008 Reading a calendar
unit012 Time unit conversion with whole number values
time009 Introduction to adding time
time006 Adding time
time011 Introduction to elapsed time
time007 Elapsed time

Algebra and Graphs

mstat004 Constructing a histogram for numerical data
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
stat804 Interpreting a circle graph or pie chart
mstat031 Interpreting a stem-and-leaf plot
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
mstat025 Finding if a question can be answered by the data
mstat041 Interpreting a tree diagram
mstat040 Introduction to the counting principle
stat106 Outcomes and event probability
mstat054 Classifying likelihood
mstat039 Understanding likelihood
mstat026 Introduction to the probability of an event
mstat010 Probability of an event
mstat042 Interpreting a Venn diagram of 2 sets
mstat043 Interpreting a Venn diagram of 3 sets
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
arith605 Plotting rational numbers on a number line
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
arith701 Word problem with addition or subtraction of integers
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
alge733 Writing a one-step expression for a real-world situation
alge602 Writing a one-step variable expression for a real-world situation
alge016 Translating a sentence into a one-step equation
alge009 Additive property of equality with whole numbers
alge010 Additive property of equality with integers
alge800 Additive property of equality with decimals
alge801 Additive property of equality with fractions and mixed numbers
alge813 Introduction to solving an equation with multiplication or division
alge008 Multiplicative property of equality with whole numbers
alge802 Solving a fraction word problem using a linear equation of the form Ax = B
alge803 Using two steps to solve an equation 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
alge064 Reading a point in the coordinate plane
alge279 Plotting a point in quadrant 1
alge067 Plotting a point in the coordinate plane

alge283 Graphing whole number functions
alge066 Finding a solution to a linear equation in two variables
alge280 Graphing a line in quadrant 1
arith233 Introduction to exponents
arith692 Writing expressions using exponents
arith693 Order of operations with whole numbers and exponents: Basic
arith683 Power of 10: Positive exponent
arith036 Scientific notation with positive exponent
arith016 Square root of a perfect square

B.9 Essential Mathematics

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.10 MS RtI Tier 3

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.11 RtI 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
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
arith103 Average of two numbers
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
arith658 Filling in missing operations to make an equation
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
arith240 Word problem with common multiples
arith655 Introduction to properties of addition
arith656 Introduction to properties of multiplication
arith657 Understanding the distributive property
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
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
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

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
arith609 Ordering fractions and 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
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
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
arith046 Decimal multiplication: Problem type 2
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

Geometry

geom151 Measuring an angle with the protractor
geom152 Drawing an angle with the protractor
geom303 Acute, obtuse, and right angles
geom349 Naming segments, rays, and lines
geom358 Identifying parallel and perpendicular lines
geom361 Naming polygons
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
geom908 Finding an angle measure for a triangle with an extended side
geom870 Sum of the angle measures of a quadrilateral
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
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
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
geom022 Area of a parallelogram
geom869 Estimates and exact answers
alge732 Finding patterns in shapes

geom347 Introduction to a circle: Diameter, radius, and chord
geom016 Circumference of a circle
geom802 Circumference and area of a circle
geom868 Classifying solids
geom311 Volume of a rectangular prism
geom354 Volume of a rectangular prism made of unit cubes
geom090 Volume of a triangular prism
geom031 Surface area of a cube or a rectangular prism
geom219 Nets of solids
geom348 Vertices, edges, and faces of a solid
geom816 Side views of a solid made of cubes
geom359 Identifying congruent shapes on a grid
geom360 Identifying similar or congruent shapes on a grid
geom037 Similar polygons
geom355 Introduction to translations
geom356 Introduction to reflections
geom334 Drawing lines of symmetry
geom357 Identifying transformations

Measurement and Graphs

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
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
unit007 U.S. Customary unit conversion with mixed number values: One-step conversion
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
unit034 Converting between metric and U.S. Customary unit systems
time010 Telling time
unit012 Time unit conversion with whole number values
time008 Reading a calendar
time009 Introduction to adding time
time006 Adding time
time011 Introduction to elapsed time
time007 Elapsed time
mstat004 Constructing a histogram for numerical data
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
stat804 Interpreting a circle graph or pie chart
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
stat803 Finding the value for a new score that will yield a given mean

Proportions, Percents, and Probability

arith663 Writing ratios for real-world situations
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
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
arith232 Finding simple interest without a calculator
mstat041 Interpreting a tree diagram
mstat040 Introduction to the counting principle
stat106 Outcomes and event probability
mstat054 Classifying likelihood
mstat026 Introduction to the probability of an event
mstat010 Probability of an event
mstat042 Interpreting a Venn diagram of 2 sets
mstat043 Interpreting a Venn diagram of 3 sets

Algebra

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
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
arith231 Integer multiplication and division
alge606 Distributive property: Whole number coefficients
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
alge733 Writing a one-step expression for a real-world situation
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction
alge009 Additive property of equality with whole numbers
alge800 Additive property of equality with decimals
alge010 Additive property of equality with integers
alge813 Introduction to solving an equation with multiplication or division
alge008 Multiplicative property of equality with whole numbers
alge797 Multiplicative property of equality with integers
alge803 Using two steps to solve an equation with whole numbers
alge016 Translating a sentence into a one-step equation
alge802 Solving a fraction word problem using a linear equation of the form Ax = B
alge015 Translating a sentence by using an inequality symbol
alge019 Solving a linear inequality: Problem type 1
alge017 Graphing a linear inequality on the number line
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

alge064 Reading a point in the coordinate plane
alge279 Plotting a point in quadrant 1
alge067 Plotting a point in the coordinate plane
alge280 Graphing a line in quadrant 1
arith233 Introduction to exponents
arith692 Writing expressions using exponents
arith693 Order of operations with whole numbers and exponents: Basic
arith683 Power of 10: Positive exponent
arith036 Scientific notation with positive exponent
arith702 Exponents and integers: Problem type 1
arith016 Square root of a perfect square

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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
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
arith103 Average of two numbers
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
arith658 Filling in missing operations to make an equation
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
arith240 Word problem with common multiples
arith655 Introduction to properties of addition
arith656 Introduction to properties of multiplication
arith657 Understanding the distributive property
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
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
arith697 Mixed arithmetic operations with fractions
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

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
arith609 Ordering fractions and 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
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
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
arith046 Decimal multiplication: Problem type 2
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

Geometry

geom151 Measuring an angle with the protractor
geom152 Drawing an angle with the protractor
geom303 Acute, obtuse, and right angles
geom349 Naming segments, rays, and lines
geom358 Identifying parallel and perpendicular lines
geom361 Naming polygons

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
geom908 Finding an angle measure for a triangle with an extended side
geom044 Pythagorean Theorem
geom870 Sum of the angle measures of a quadrilateral
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
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
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
geom022 Area of a parallelogram
geom023 Area of a trapezoid
geom344 Area involving rectangles and triangles
geom869 Estimates and exact answers
alge732 Finding patterns in shapes
geom347 Introduction to a circle: Diameter, radius, and chord
geom016 Circumference of a circle
geom802 Circumference and area of a circle
geom302 Area involving rectangles and circles
geom868 Classifying solids
geom311 Volume of a rectangular prism
geom354 Volume of a rectangular prism made of unit cubes
geom090 Volume of a triangular prism
geom035 Volume of a cylinder
geom031 Surface area of a cube or a rectangular prism
geom091 Surface area of a triangular prism
geom219 Nets of solids
geom348 Vertices, edges, and faces of a solid
geom816 Side views of a solid made of cubes
geom359 Identifying congruent shapes on a grid
geom360 Identifying similar or congruent shapes on a grid
geom037 Similar polygons
geom355 Introduction to translations
geom356 Introduction to reflections
geom334 Drawing lines of symmetry
geom357 Identifying transformations

Measurement and Graphs

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
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
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

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
unit034 Converting between metric and U.S. Customary unit systems
time010 Telling time
unit012 Time unit conversion with whole number values
time008 Reading a calendar
time009 Introduction to adding time
time006 Adding time
time011 Introduction to elapsed time
time007 Elapsed time
mstat004 Constructing a histogram for numerical data
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
stat804 Interpreting a circle graph or pie chart
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
mstat031 Interpreting a stem-and-leaf plot
stat803 Finding the value for a new score that will yield a given mean

Proportions, Percents, and Probability

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
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
arith698 Applying the percent equation
arith074 Finding the sale price without a calculator given the original 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
mstat041 Interpreting a tree diagram
mstat040 Introduction to the counting principle
mstat015 Counting principle
stat106 Outcomes and event probability
mstat054 Classifying likelihood
mstat026 Introduction to the probability of an event
mstat010 Probability of an event
mstat042 Interpreting a Venn diagram of 2 sets
mstat043 Interpreting a Venn diagram of 3 sets

Algebra

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
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
arith701 Word problem with addition or subtraction of integers
arith231 Integer multiplication and division
arith118 Order of operations with integers
arith116 Signed fraction addition or subtraction: Basic
arith105 Signed fraction multiplication: Advanced
arith117 Signed decimal addition and subtraction
arith234 Signed decimal addition and subtraction with 3 numbers
alge001 Identifying numbers as integers or non-integers
alge606 Distributive property: Whole number coefficients
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
alge733 Writing a one-step expression for a real-world situation
alge602 Writing a one-step variable expression for a real-world situation
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction
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
alge813 Introduction to solving an equation with multiplication or division
alge008 Multiplicative property of equality with whole numbers
alge797 Multiplicative property of equality with integers
alge803 Using two steps to solve an equation with whole numbers
alge006 Solving a two-step equation with integers
alge016 Translating a sentence into a one-step equation
alge802 Solving a fraction word problem using a linear equation of the form Ax = B
alge015 Translating a sentence by using an inequality symbol
alge019 Solving a linear inequality: Problem type 1
alge017 Graphing a linear inequality on the number line
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
alge064 Reading a point in the coordinate plane
alge279 Plotting a point in quadrant 1
alge067 Plotting a point in the coordinate plane
alge280 Graphing a line in quadrant 1
alge194 Graphing a line given its equation in slope-intercept form
alge198 Graphing a vertical or horizontal line
alge263 Interpreting the graphs of two functions
arith233 Introduction to exponents
arith692 Writing expressions using exponents
arith693 Order of operations with whole numbers and exponents: Basic
arith683 Power of 10: Positive exponent
arith036 Scientific notation with positive exponent
arith702 Exponents and integers: Problem type 1
alge004 Evaluating a quadratic expression: Integers
arith029 Ordering numbers with positive exponents
arith016 Square root of a perfect square
arith602 Estimating a square root

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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
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
arith103 Average of two numbers
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
arith658 Filling in missing operations to make an equation
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
arith240 Word problem with common multiples
arith655 Introduction to properties of addition
arith656 Introduction to properties of multiplication
arith657 Understanding the distributive property
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
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
arith697 Mixed arithmetic operations with fractions
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

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
arith609 Ordering fractions and 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
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
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
arith046 Decimal multiplication: Problem type 2
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

Geometry

geom151 Measuring an angle with the protractor
geom152 Drawing an angle with the protractor
geom303 Acute, obtuse, and right angles
geom349 Naming segments, rays, and lines
geom358 Identifying parallel and perpendicular lines
geom361 Naming polygons
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
geom908 Finding an angle measure for a triangle with an extended side
geom044 Pythagorean Theorem
geom870 Sum of the angle measures of a quadrilateral
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
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

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
geom022 Area of a parallelogram
geom023 Area of a trapezoid
geom344 Area involving rectangles and triangles
geom869 Estimates and exact answers
alge732 Finding patterns in shapes
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
geom802 Circumference and area of a circle
geom036 Word problem involving the area between two concentric circles
geom302 Area involving rectangles and circles
geom868 Classifying solids
geom311 Volume of a rectangular prism
geom354 Volume of a rectangular prism made of unit cubes
geom090 Volume of a triangular prism
geom035 Volume of a cylinder
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
geom219 Nets of solids
geom348 Vertices, edges, and faces of a solid
geom816 Side views of a solid made of cubes
geom359 Identifying congruent shapes on a grid
geom360 Identifying similar or congruent shapes on a grid
geom037 Similar polygons
geom355 Introduction to translations
geom356 Introduction to reflections
geom334 Drawing lines of symmetry
geom357 Identifying transformations

Measurement and Graphs

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
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
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
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
unit034 Converting between metric and U.S. Customary unit systems
time010 Telling time
unit012 Time unit conversion with whole number values
time008 Reading a calendar
time009 Introduction to adding time
time006 Adding time
time011 Introduction to elapsed time

time007 Elapsed time
mstat004 Constructing a histogram for numerical data
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
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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
mstat053 Choosing the best measure to describe data
mstat031 Interpreting a stem-and-leaf plot
stat803 Finding the value for a new score that will yield a given mean

Proportions, Percents, and Probability

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
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
arith698 Applying the percent equation
arith074 Finding the sale price without a calculator given the original 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
mstat041 Interpreting a tree diagram
mstat040 Introduction to the counting principle
mstat015 Counting principle
stat106 Outcomes and event probability
mstat054 Classifying likelihood
mstat026 Introduction to the probability of an event
mstat010 Probability of an event
mstat046 Experimental and theoretical probability
mstat047 Introduction to expectation
mstat042 Interpreting a Venn diagram of 2 sets
mstat043 Interpreting a Venn diagram of 3 sets

Algebra

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
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
arith701 Word problem with addition or subtraction of integers
arith231 Integer multiplication and division
arith118 Order of operations with integers
arith116 Signed fraction addition or subtraction: Basic
arith105 Signed fraction multiplication: Advanced
arith117 Signed decimal addition and subtraction
arith234 Signed decimal addition and subtraction with 3 numbers
alge001 Identifying numbers as integers or non-integers
alge606 Distributive property: Whole number coefficients
alge607 Combining like terms: Integer coefficients
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
alge733 Writing a one-step expression for a real-world situation
alge602 Writing a one-step variable expression for a real-world situation
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction
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
alge813 Introduction to solving an equation with multiplication or division
alge008 Multiplicative property of equality with whole numbers
alge797 Multiplicative property of equality with integers
alge803 Using two steps to solve an equation with whole numbers
alge006 Solving a two-step equation with integers
alge016 Translating a sentence into a one-step equation
alge802 Solving a fraction word problem using a linear equation of the form Ax = B
alge015 Translating a sentence by using an inequality symbol
alge019 Solving a linear inequality: Problem type 1
alge017 Graphing a linear inequality on the number line
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
alge064 Reading a point in the coordinate plane
alge279 Plotting a point in quadrant 1
alge067 Plotting a point in the coordinate plane
alge066 Finding a solution to a linear equation in two variables
alge280 Graphing a line in quadrant 1
alge194 Graphing a line given its equation in slope-intercept form
alge198 Graphing a vertical or horizontal line
alge263 Interpreting the graphs of two functions
arith233 Introduction to exponents
arith692 Writing expressions using exponents
arith693 Order of operations with whole numbers and exponents: Basic
arith683 Power of 10: Positive exponent
arith684 Power of 10: Negative exponent
arith036 Scientific notation with positive exponent
arith037 Scientific notation with negative exponent
arith702 Exponents and integers: Problem type 1
arith600 Order of operations with integers and exponents
alge004 Evaluating a quadratic expression: Integers
arith029 Ordering numbers with positive exponents
arith016 Square root of a perfect square
arith602 Estimating a square root

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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

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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)÷b = c÷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

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—
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge262 Graphing a cubic function of the form y = ax3
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 x2 = 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 x3 = 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

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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)÷b = c÷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

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—
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge262 Graphing a cubic function of the form y = ax3
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 x2 = 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 x3 = 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.17 Algebra Readiness

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)÷b = c÷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

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—
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge262 Graphing a cubic function of the form y = ax3
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 x2 = 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 x3 = 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.18 Pre-Algebra

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)÷b = c÷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

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—
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge262 Graphing a cubic function of the form y = ax3
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 x2 = 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 x3 = 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.19 M.S. Geometry

Whole Numbers and Integers

arith124 Whole number place value: Problem type 1
arith125 Whole number place value: 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
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
alge732 Finding patterns in shapes
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
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
arith692 Writing expressions using exponents
arith233 Introduction to exponents
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
arith409 Introduction to the distributive property
arith056 Factors
arith070 Least common multiple of 2 numbers
arith804 Least common multiple of 3 numbers
alge286 Plotting integers on a number line
arith691 Ordering integers
arith402 Plotting opposite integers on a number line
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
arith440 Operations with absolute value: Problem type 1
alge694 Computing the distance between two integers on a number line
arith231 Integer multiplication and division
arith800 Multiplication of 3 or 4 integers
arith702 Exponents and integers: 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
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
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

Fractions and Decimals

arith623 Introduction to fractions
arith212 Equivalent fractions
arith666 Introduction to simplifying a fraction
arith067 Simplifying a fraction
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
arith088 The reciprocal of a number
arith694 Division involving a whole number and a fraction
arith022 Fraction division
arith821 Exponents and fractions
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
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
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
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
unit009 U.S. Customary area unit conversion with whole number values
arith110 Decimal place value: Tenths and hundredths
arith129 Introduction to 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
arith117 Signed decimal addition and subtraction
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
arith082 Multiplication of a decimal by a power of ten
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
arith743 Division of a decimal by a 1-digit decimal
arith083 Division of a decimal by a power of ten
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
arith727 Converting a fraction to a terminating decimal: Basic
arith733 Using a calculator to convert a fraction to a rounded decimal
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
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
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
arith840 Finding a percentage of a whole number
arith030 Finding a percentage of a whole number without a calculator: Basic
arith862 Applying the percent equation: Problem type 1
arith846 Finding a percentage of a total amount without a calculator: Sales tax, commission, discount
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
arith858 Finding the percentage increase or decrease: Basic
arith225 Finding the percentage increase or decrease: Advanced

Equations

alge010 Additive property of equality with integers
alge797 Multiplicative property of equality with integers
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
alge800 Additive property of equality with decimals
alge825 Multiplicative property of equality with decimals
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

alge608 Using distribution and combining like terms to simplify: Univariate
alge024 Introduction to the product rule of exponents
alge305 Introduction to the power of a product rule of exponents
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
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
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
alge016 Translating a sentence into a one-step equation
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
alge815 Introduction to using substitution to solve a linear equation
alge658 Introduction to solving a rational equation
alge060 Solving a rational equation that simplifies to linear: Denominator x

Graphing

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
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
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
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
alge259 Graphing a line given its slope and y-intercept

alge196 Graphing a line through a given point with a given slope

Angles 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
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
geom358 Identifying parallel and perpendicular 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
geom359 Identifying congruent shapes on a grid
geom159 Constructing congruent angles
geom150 Constructing a pair of perpendicular lines
geom157 Constructing a pair of parallel lines

Triangles and Polygons

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
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
arith016 Square root of a perfect square
arith763 Using a calculator to approximate a square root
arith093 Simplifying the square root of a whole number less than 100
arith767 Introduction to square root addition or subtraction
arith764 Introduction to square root multiplication
arith094 Cube root of an integer
alge698 Solving an equation of the form x3 = a using integers
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
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

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
arith064 Solving a word problem on proportions using a unit rate
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)÷b = c÷d
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
geom360 Identifying similar or congruent shapes on a grid
geom037 Similar polygons
geom038 Similar right triangles
geom337 Indirect measurement
alge814 Using right triangles to find the slope of a line
geom860 Special right triangles: Decimal answers
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
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

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 and Areas

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
geom564 Finding side lengths of squares given an area and a 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
geom814 Angle measure in a circle graph

Volumes and Surface Areas

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
geom311 Volume of a rectangular prism
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
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
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
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
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
geom338 Surface area involving prisms or cylinders
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
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
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

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
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

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Whole Numbers

arith633 One-digit addition with carry
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

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
arith675 Understanding multiplication of a one-digit number with a larger number
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
arith075 Division facts
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
arith617 Quotient and remainder: Problem type 2
arith650 Division involving quotients with intermediate zeros
arith614 Word problem with multiplication or division of whole numbers
arith644 Word problem on quotient and remainder
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
arith124 Whole number place value: Problem type 1
arith125 Whole number place value: Problem type 2
arith651 Introduction to inequalities
arith077 Ordering large numbers
arith078 Rounding to tens or hundreds
arith123 Rounding to hundreds or thousands
arith101 Estimating a sum of whole numbers
arith102 Estimating a difference of whole numbers
arith692 Writing expressions using exponents
arith233 Introduction to exponents
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
arith646 Even and odd numbers
arith647 Divisibility rules for 2, 5, and 10
arith648 Divisibility rules for 3 and 9
arith056 Factors
arith033 Greatest common factor of 2 numbers
arith070 Least common multiple of 2 numbers
arith034 Prime numbers
arith035 Prime factorization

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
arith119 Introduction to fraction multiplication
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
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
arith821 Exponents and fractions
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
arith801 Finding the LCD of two fractions
arith618 Addition or subtraction of fractions with the same denominator
arith802 Addition or subtraction of fractions with the same denominator and simplification
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
arith805 Word problem involving addition or subtraction of fractions with different denominators
arith100 Fractional part of a circle
arith859 Order of operations with fractions: Problem type 1
arith860 Order of operations with fractions: Problem type 2
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
arith815 Mixed number multiplication
arith068 Mixed number division

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
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
arith721 Converting a decimal to a mixed number and an improper fraction without simplifying
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
arith082 Multiplication of a decimal by a power of ten
arith017 Multiplication of a decimal by a whole number
arith738 Multiplication of a decimal by a power of 0.1
arith055 Decimal multiplication: Problem type 1
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
arith083 Division of a decimal by a power of ten
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
arith136 Word problem with division of a decimal and a whole number
arith629 Word problem with multiple decimal operations: Problem type 2
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
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
arith733 Using a calculator to convert a fraction to a rounded decimal
arith609 Ordering fractions and decimals
arith836 Converting a fraction with a denominator of 100 to a percentage
arith674 Finding the percentage of a grid that is shaded
arith837 Converting a percentage to a fraction with a denominator of 100
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
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

Signed 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
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
arith440 Operations with absolute value: Problem type 1
alge694 Computing the distance between two 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
arith118 Order of operations with integers
arith702 Exponents and integers: Problem type 1
arith703 Exponents and integers: Problem type 2
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
arith117 Signed decimal addition and subtraction
arith234 Signed decimal addition and subtraction with 3 numbers
arith750 Signed decimal multiplication
arith822 Signed fraction multiplication: Basic
arith105 Signed fraction multiplication: Advanced
arith704 Exponents and signed fractions
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
arith655 Introduction to properties of addition
arith656 Introduction to properties of multiplication
arith409 Introduction to the distributive property
arith657 Understanding the distributive property
alge647 Identifying like terms
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
alge613 Identifying equivalent algebraic expressions
alge608 Using distribution and combining like terms to simplify: Univariate
alge293 Combining like terms in a quadratic expression

Equations and Inequalities

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
alge813 Introduction to solving an equation with multiplication or division
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
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
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
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
alge920 Introduction to solving an equation with parentheses
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
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
alge823 Solving a one-step word problem using the formula d = rt
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
alge819 Solving a proportion of the form x/a=b/c: Basic
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
arith840 Finding a percentage of a whole number
arith030 Finding a percentage of a whole number without a calculator: Basic
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
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
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
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
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
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
alge695 Finding distances between points that share a common coordinate given the graph
alge925 Finding the next terms of an arithmetic sequence with whole numbers
alge933 Finding the next terms of a geometric sequence with whole numbers
alge630 Finding outputs of a one-step function that models a real-world situation: Two variable equation
fun005 Writing a function rule given a table of ordered pairs: One-step rules
alge282 Function tables with two-step rules
alge850 Table for a linear equation
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
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
alge263 Interpreting the graphs of two functions
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
alge828 Interpreting direct variation from a graph

Exponents and Polynomials

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
alge305 Introduction to the power of a product rule of exponents
alge306 Introduction to the power of a power rule of exponents
alge307 Power rules with positive exponents: Multivariate products
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
arith683 Power of 10: Positive exponent
scinot023 Introduction to scientific notation with positive exponents
arith036 Scientific notation with positive exponent
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
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
alge032 Squaring a binomial: Univariate
arith016 Square root of a perfect square

arith763 Using a calculator to approximate a square root
arith712 Ordering real numbers
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

Geometry

geom525 Computing distances between decimals on the number line
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
geom866 Perimeter and area on a grid
geom019 Area of a square or a rectangle
geom217 Finding the side length of a rectangle given its perimeter or area
geom350 Distinguishing between the area and perimeter of a rectangle
geom351 Areas of rectangles with the same perimeter
geom410 Word problem involving the area of a square or a rectangle
geom340 Area of a piecewise rectangular figure
geom801 Area of a triangle
geom001 Finding an angle measure of a triangle given two angles
alge407 Introduction to the Pythagorean Theorem
geom044 Pythagorean Theorem
alge408 Word problem involving the Pythagorean Theorem
geom016 Circumference of a circle
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
geom354 Volume of a rectangular prism made of unit cubes
geom311 Volume of a rectangular prism
geom035 Volume of a cylinder
geom219 Nets of solids
geom632 Surface area of a rectangular prism made of unit cubes
geom031 Surface area of a cube or a rectangular prism
geom555 Distinguishing between surface area and volume
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
unit012 Time unit conversion with whole number values
alge218 Solving a word problem involving rates and time conversion
mstat097 Constructing a two-way frequency table: Basic
mstat049 Computing a percentage from a table of values
mstat005 Constructing a bar graph for non-numerical data
mstat024 Interpreting a bar graph
mstat044 Interpreting a double bar graph
stat804 Interpreting a circle graph or pie chart
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
mstat026 Introduction to the probability of an event
mstat010 Probability of an event

B.21 Foundations of H.S. Math

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

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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
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)÷b = c÷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

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—
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge262 Graphing a cubic function of the form y = ax3
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 x2 = 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 x3 = 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.22 Essentials for Algebra

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
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
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
geom395 Midpoint of a number line segment: 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
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
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
alge010 Additive property of equality with integers

alge008 Multiplicative property of equality with whole numbers
alge797 Multiplicative property of equality with integers
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
geom151 Measuring an angle with the protractor
geom303 Acute, obtuse, and right angles
geom551 Finding the complement or supplement of an angle given a figure
geom349 Naming segments, rays, and lines
geom358 Identifying parallel and perpendicular lines
geom306 Acute, obtuse, and right triangles
geom001 Finding an angle measure of a triangle given two angles

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
geom394 Computing distances between decimals on a number line
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
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
geom386 Computations involving density, mass, and volume
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
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
geom519 Identifying and naming congruent parts of congruent triangles
geom520 Identifying and naming congruent triangles
geom037 Similar polygons
geom038 Similar right triangles
geom337 Indirect measurement
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
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)÷b = c÷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

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
geom536 Drawing and identifying a polygon in the coordinate plane
geom537 Finding the perimeter or area of a rectangle in the coordinate plane
alge696 Finding distances between points that share a common coordinate given their coordinates
alge191 Midpoint of a line segment in the plane
alge283 Graphing whole number functions
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
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
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

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
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
alge914 Identifying solutions to a system of linear equations
alge725 Graphically solving a system of linear equations
alge317 Writing a system of linear equations given its graph
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
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
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
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
alge312 Finding domain and range from a linear graph in context
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge262 Graphing a cubic function of the form y = ax3
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

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
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
alge324 Distance between two points in the plane: Decimal answers
alge132 Distance between two points in the plane: Exact answers
alge962 Solving an equation of the form x2 = 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 x3 = 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

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
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
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
geom444 Word problem on optimizing an area or 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
geom430 Word problem on population density
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
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
geom481 Side lengths, perimeters, and areas of similar polygons
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
geom464 Identifying chords, secants, and tangents of a circle
geom465 Naming and finding measures of central angles, inscribed angles, and arcs 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
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
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
geom443 Identifying geometric shapes that model real-world objects
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
geom865 Measuring the net of a solid to find surface area or 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
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
geom484 Word problem involving the surface area of rectangular prisms and cylinders
geom483 Word problem involving the surface area of rectangular prisms and pyramids
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

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
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
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
mstat019 Identifying independent events given descriptions of experiments
mstat012 Probability of independent events
mstat013 Probability of dependent events
mstat115 Determining outcomes for compound events and complements of 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
mstat114 Using a random number table to make a fair decision

Angles, Lines, and Polygons

geom152 Drawing an angle with the protractor
geom039 Finding supplementary and complementary angles
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
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
geom389 Constructing congruent line segments
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
geom626 Classifying scalene, isosceles, and equilateral triangles by side lengths

geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or 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
geom628 Finding angle measures of a triangle given angles with variables
geom629 Finding angle measures of an 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
geom317 Understanding trigonometric ratios through similar right triangles
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
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
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

Transformations

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
geom369 Writing a rule to describe a translation
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
geom370 Writing a rule to describe a reflection

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
geom371 Writing a rule to describe a rotation
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

B.23 Algebra 1A

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
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
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
arith683 Power of 10: Positive exponent
arith684 Power of 10: Negative exponent
arith036 Scientific notation with positive exponent
arith037 Scientific notation with negative exponent
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
alge831 Translating a phrase into a one-step expression
alge733 Writing a one-step expression for a real-world situation
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—
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge262 Graphing a cubic function of the form y = ax3
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
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
scinot002 Multiplying and dividing numbers written in scientific notation
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
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 ax2 + 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

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.24 CA Algebra 1A

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
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
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
arith683 Power of 10: Positive exponent
arith684 Power of 10: Negative exponent
arith036 Scientific notation with positive exponent
arith037 Scientific notation with negative exponent
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
alge831 Translating a phrase into a one-step expression
alge733 Writing a one-step expression for a real-world situation
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—
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge262 Graphing a cubic function of the form y = ax3
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
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
scinot002 Multiplying and dividing numbers written in scientific notation
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
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 ax2 + 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

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.25 Traditional Algebra 1A

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
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
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
arith683 Power of 10: Positive exponent
arith684 Power of 10: Negative exponent
arith036 Scientific notation with positive exponent
arith037 Scientific notation with negative exponent
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
alge831 Translating a phrase into a one-step expression
alge733 Writing a one-step expression for a real-world situation
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—
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge262 Graphing a cubic function of the form y = ax3
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
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
scinot002 Multiplying and dividing numbers written in scientific notation
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
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 ax2 + 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

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.26 Algebra 1B

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—
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge262 Graphing a cubic function of the form y = ax3
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 ax2 + 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 = ax2 + bx + c: Integer coefficients
pcalc747 Graphing a parabola of the form y = ax2 + 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 x2 = 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

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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—
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge262 Graphing a cubic function of the form y = ax3
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 ax2 + 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 = ax2 + bx + c: Integer coefficients
pcalc747 Graphing a parabola of the form y = ax2 + 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 x2 = 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.28 Traditional Algebra 1B

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—
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge262 Graphing a cubic function of the form y = ax3
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 ax2 + 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 = ax2 + bx + c: Integer coefficients
pcalc747 Graphing a parabola of the form y = ax2 + 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 x2 = 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.29 Prep. for CA Algebra 1 Part 1

Whole Numbers

arith633 One-digit addition with carry
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
arith128 Adding or subtracting 10, 100, or 1000
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
arith613 Word problem with addition or subtraction of whole numbers
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
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
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
arith616 Quotient and remainder: Problem type 1
arith644 Word problem on quotient and remainder
arith617 Quotient and remainder: Problem type 2
arith650 Division involving quotients with intermediate zeros
arith614 Word problem with multiplication or division of whole numbers
arith130 Word problem with multiplication and addition or subtraction of whole numbers
arith124 Whole number place value: Problem type 1
arith078 Rounding to tens or hundreds
arith123 Rounding to hundreds or thousands
arith651 Introduction to inequalities
arith077 Ordering large numbers
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
arith056 Factors
arith033 Greatest common factor of 2 numbers
arith641 Multiples: Problem type 1
arith642 Multiples: Problem type 2
arith070 Least common multiple of 2 numbers
arith034 Prime numbers

arith035 Prime factorization

Fractions and Mixed Numbers

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
arith801 Finding the LCD of two fractions
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
arith100 Fractional part of a circle
arith079 Product of a unit fraction and a whole number
arith119 Introduction to fraction multiplication
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
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
arith068 Mixed number division

Decimals 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
arith221 Rounding decimals
arith129 Introduction to ordering decimals
arith608 Ordering decimals
arith670 Converting a decimal to a fraction: Basic
arith671 Converting a fraction with a denominator of 10, 100, or 1000 to a decimal
arith222 Converting a fraction to a terminating decimal
arith624 Addition of aligned decimals
arith013 Decimal addition with 3 numbers
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
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
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
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

Signed Numbers and Variable Expressions

mstat038 Reading the temperature from a thermometer
alge286 Plotting integers on a number line
arith699 Writing a signed number for a real-world situation
arith691 Ordering integers
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
arith231 Integer multiplication and division
arith800 Multiplication of 3 or 4 integers
arith118 Order of operations with integers
arith701 Word problem with addition or subtraction of 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
arith117 Signed decimal addition and subtraction
arith234 Signed decimal addition and subtraction with 3 numbers
arith822 Signed fraction multiplication: Basic
arith105 Signed fraction multiplication: Advanced
alge606 Distributive property: Whole number coefficients
alge604 Distributive property: Integer coefficients
alge700 Combining like terms: Whole number coefficients
alge607 Combining like terms: Integer coefficients
alge293 Combining like terms in a quadratic expression
alge798 Simplifying a sum or difference of two univariate polynomials
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
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction
arith233 Introduction to exponents
arith692 Writing expressions using exponents
arith693 Order of operations with whole numbers and exponents: Basic
arith683 Power of 10: Positive exponent
arith036 Scientific notation with positive exponent
arith684 Power of 10: Negative exponent
arith037 Scientific notation with negative exponent
arith702 Exponents and integers: Problem type 1
arith703 Exponents and integers: Problem type 2

arith704 Exponents and signed fractions
alge004 Evaluating a quadratic expression: Integers
alge821 Understanding the product rule of exponents
alge024 Introduction to the product rule of exponents
alge030 Product rule with positive exponents: Multivariate
alge735 Multiplying a univariate polynomial by a monomial with a positive coefficient
alge033 Multiplying binomials with leading coefficients of 1
alge032 Squaring a binomial: Univariate
alge826 Understanding the power rules of exponents
alge754 Introduction to the power rules of exponents
alge827 Introduction to the quotient rule of exponents
alge026 Quotient of expressions involving exponents
arith016 Square root of a perfect square

Equations, Inequalities, and Functions

arith655 Introduction to properties of addition
arith656 Introduction to properties of multiplication
arith657 Understanding the distributive property
alge009 Additive property of equality with whole numbers
alge800 Additive property of equality with decimals
alge010 Additive property of equality with integers
alge813 Introduction to solving an equation with multiplication or division
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
alge810 Introduction to algebraic symbol manipulation
alge272 Solving a proportion of the form x/a = b/c
alge266 Additive property of equality with a negative coefficient
alge803 Using two steps to solve an equation with whole numbers
alge006 Solving a two-step equation with integers
alge824 Solving a two-step equation with signed decimals
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
alge733 Writing a one-step expression for a real-world situation
alge602 Writing a one-step variable expression for a real-world situation
alge016 Translating a sentence into a one-step equation
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
arith064 Solving a word problem on proportions using a unit rate
arith610 Word problem on proportions: Problem type 1
alge823 Solving a one-step word problem using the formula d = rt
alge218 Solving a word problem involving rates and time conversion
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
alge019 Solving a linear inequality: Problem type 1
alge020 Solving a linear inequality: Problem type 2
alge021 Solving a linear inequality: Problem type 3
alge745 Solving a linear inequality: Problem type 5
alge807 Finding the next terms of a sequence with whole numbers
fun005 Writing a function rule given a table of ordered pairs: One-step rules
alge282 Function tables with two-step rules
fun001 Table for a linear function

alge278 Reading a point in quadrant 1
alge064 Reading a point in the coordinate plane
alge279 Plotting a point in quadrant 1
alge067 Plotting a point in the coordinate plane
alge280 Graphing a line in quadrant 1
alge194 Graphing a line given its equation in slope-intercept form
alge198 Graphing a vertical or horizontal line
alge263 Interpreting the graphs of two functions
alge684 Finding slope given the graph of a line on a grid
alge685 Finding slope given two points on the line
alge828 Interpreting direct variation from a graph

Geometry and Measurement

geom525 Computing distances between decimals on the number line
geom339 Perimeter of a polygon
geom300 Perimeter of a square or a rectangle
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
geom351 Areas of rectangles with the same perimeter
geom217 Finding the side length of a rectangle given its perimeter or area
geom221 Finding the missing length in a figure
geom353 Perimeter of a piecewise rectangular figure
geom340 Area of a piecewise rectangular figure
geom801 Area of a triangle
geom001 Finding an angle measure of a triangle given two angles
geom044 Pythagorean Theorem
geom016 Circumference of a circle
geom802 Circumference and area of a circle
geom302 Area involving rectangles and circles
geom219 Nets of solids
geom354 Volume of a rectangular prism made of unit cubes
geom311 Volume of a rectangular prism
geom035 Volume of a cylinder
geom031 Surface area of a cube or a rectangular prism
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
unit012 Time unit conversion with whole number values
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
mstat003 Mode 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
mstat026 Introduction to the probability of an event
mstat010 Probability of an event

B.30 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)÷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—
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge262 Graphing a cubic function of the form y = ax3
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 ax2 + 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 = ax2 + bx + c: Integer coefficients
pcalc747 Graphing a parabola of the form y = ax2 + 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 x2 = 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.31 CA 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)÷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—
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge262 Graphing a cubic function of the form y = ax3
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 ax2 + 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 = ax2 + bx + c: Integer coefficients
pcalc747 Graphing a parabola of the form y = ax2 + 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 x2 = 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.32 Traditional 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)÷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—
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge262 Graphing a cubic function of the form y = ax3
fun030 Evaluating a piecewise-defined function
fun031 Graphing a piecewise-defined function: Problem type 1

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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
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

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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

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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
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 ax2 + 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

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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 = ax2 + bx + c: Integer coefficients
pcalc747 Graphing a parabola of the form y = ax2 + 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 x2 = 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

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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

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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
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.33 H.S. Geometry

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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 x3 = a using integers
alge681 Solving an equation written in factored form
alge956 Finding the roots of a quadratic equation of the form ax2 + 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 x2 = 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)÷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
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + 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 y2 = ax or x2 = 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.34 Support for CA H.S. Geometry

Algebra and Deductive Reasoning

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
arith056 Factors
arith070 Least common multiple of 2 numbers
arith663 Writing ratios for real-world situations
arith212 Equivalent fractions
arith067 Simplifying a fraction
arith230 Addition or subtraction of fractions with different denominators
arith086 Product of a fraction and a whole number: Problem type 1
arith053 Fraction multiplication

arith022 Fraction division
arith015 Writing an improper fraction as a mixed number
arith110 Decimal place value: Tenths and hundredths
arith221 Rounding decimals
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
arith116 Signed fraction addition or subtraction: Basic
arith117 Signed decimal addition and subtraction
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
arith071 Absolute value of a number
alge731 Evaluating an algebraic expression: Whole numbers with two operations
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction
alge004 Evaluating a quadratic expression: Integers
alge606 Distributive property: Whole number coefficients
alge700 Combining like terms: Whole number coefficients
alge607 Combining like terms: Integer coefficients
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
alge820 Multiplicative property of equality with fractions
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
alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution
alge060 Solving a rational equation that simplifies to linear: Denominator x
alge272 Solving a proportion of the form x/a = b/c
alge271 Solving a proportion of the form a/(x+b) = c/x
arith610 Word problem on proportions: Problem type 1
alge810 Introduction to algebraic symbol manipulation
alge743 Algebraic symbol manipulation: Problem type 1
alge744 Algebraic symbol manipulation: 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
arith016 Square root of a perfect square
arith601 Square root of a rational perfect square
arith093 Simplifying the square root of a whole number less than 100
alge086 Rationalizing the denominator of a radical expression
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

Lines and Angles

geom349 Naming segments, rays, and lines
mstat034 Measuring length to the nearest quarter or half inch
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

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
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
geom650 Indirect proof (proof by contradiction)
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
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

Polygons and Circles

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
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
geom078 Sides of polygons having the same perimeter
geom817 Finding a side length given the perimeter and side lengths with variables
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
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
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
geom036 Word problem involving the area between two concentric circles
geom302 Area involving rectangles and circles
geom214 Area involving inscribed figures
mstat011 Area as probability

Similarities and Transformations

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

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
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
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

Coordinate Geometry

alge067 Plotting a point in the coordinate plane
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
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
alge191 Midpoint of a line segment in the plane
alge132 Distance between two points in the plane: Exact answers
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
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
pcalc038 Addition or subtraction of matrices
pcalc037 Scalar multiplication of a matrix
pcalc740 Linear combination of matrices

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Algebra and Deductive Reasoning

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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
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arith116 Signed fraction addition or subtraction: Basic
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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
arith071 Absolute value of a number
alge731 Evaluating an algebraic expression: Whole numbers with two operations
alge005 Evaluating a linear expression: Integer multiplication with addition or subtraction
alge004 Evaluating a quadratic expression: Integers
alge606 Distributive property: Whole number coefficients
alge700 Combining like terms: Whole number coefficients
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alge011 Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution
alge060 Solving a rational equation that simplifies to linear: Denominator x
alge272 Solving a proportion of the form x/a = b/c
alge271 Solving a proportion of the form a/(x+b) = c/x
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alge743 Algebraic symbol manipulation: Problem type 1
alge744 Algebraic symbol manipulation: Problem type 2
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alge822 Writing an inequality given a graph on the number line
alge166 Graphing a compound inequality on the number line
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arith016 Square root of a perfect square
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mstat042 Interpreting a Venn diagram of 2 sets
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glogic001 Conditional statements and negations
glogic005 The converse, inverse, and contrapositive of a conditional statement
glogic008 Conditional statements and deductive reasoning

Lines and Angles

geom349 Naming segments, rays, and lines
mstat034 Measuring length to the nearest quarter or half inch
geom525 Computing distances between decimals on the number line
geom526 Midpoint of a number line segment
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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

Triangles

geom306 Acute, obtuse, and right triangles
geom307 Classifying scalene, isosceles, and equilateral triangles by side lengths or angles
geom801 Area of a triangle
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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
geom650 Indirect proof (proof by contradiction)
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
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

Polygons and Circles

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
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
geom078 Sides of polygons having the same perimeter
geom817 Finding a side length given the perimeter and side lengths with variables
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
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
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
geom036 Word problem involving the area between two concentric circles
geom302 Area involving rectangles and circles
geom214 Area involving inscribed figures
mstat011 Area as probability

Similarities and Transformations

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

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
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
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

Coordinate Geometry

alge067 Plotting a point in the coordinate plane
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
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
alge191 Midpoint of a line segment in the plane
alge132 Distance between two points in the plane: Exact answers
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
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
pcalc038 Addition or subtraction of matrices
pcalc037 Scalar multiplication of a matrix
pcalc740 Linear combination of matrices

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Algebra Review

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 x3 = a using integers
alge681 Solving an equation written in factored form
alge956 Finding the roots of a quadratic equation of the form ax2 + 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 x2 = 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)÷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
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + 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 y2 = ax or x2 = 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.37 Integrated Mathematics I

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
arith418 Word problem involving the least common multiple of 2 numbers
arith240 Word problem with common multiples
arith801 Finding the LCD of two fractions
arith618 Addition or subtraction of fractions with the same denominator
arith802 Addition or subtraction of fractions with the same denominator and simplification
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
arith609 Ordering fractions and 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
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
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
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
arith629 Word problem with multiple decimal operations: Problem type 2
arith103 Average of two numbers
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
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
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
arith836 Converting a fraction with a denominator of 100 to a percentage
arith837 Converting a percentage to a fraction with a denominator of 100
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
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
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
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
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
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
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
arith433 Computing and understanding distances between 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
alge647 Identifying like terms
alge700 Combining like terms: Whole number coefficients
alge432 Introduction to adding fractions with variables and common denominators
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
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
arith410 Introduction to factoring with numbers
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
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
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
geom410 Word problem involving the area of a square or a rectangle
geom142 Word problem involving the area between two rectangles
unit009 U.S. Customary area unit conversion with whole number values

unit010 Metric area unit conversion with decimal values

Linear Equations and Inequalities

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
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
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
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)÷b = c÷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
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
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, Functions, and Linear Systems

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
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
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
arith500 Identifying proportional relationships in tables by calculating unit rates: Whole numbers
arith510 Identifying proportional relationships in tables by calculating unit rates: Fractions
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
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge572 Graphing a function of the form f(x) = ax2
alge573 Graphing a function of the form f(x) = ax2 + c
alge253 Graphing a parabola of the form y = (x-h)2 + k
alge262 Graphing a cubic function of the form y = ax3
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
alge732 Finding patterns in shapes
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

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
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
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
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
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
alge926 Quotient rule with negative exponents: Problem type 2
alge691 Introduction to the power of a power rule with negative exponents: Whole number base
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
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
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

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
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
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

geom151 Measuring an angle with the protractor
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
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
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
mstat083 Computing mean absolute deviation from a bar graph
mstat084 Assessing the degree of overlap of two distributions
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
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

Segments, Lines, 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
geom407 Matching basic geometric terms with their definitions
geom392 Introduction to segment addition
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
geom390 Finding a point that partitions a number line segment in a given ratio
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
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
arith766 Simplifying a quotient of square roots
alge527 Rationalizing a denominator: Quotient involving square roots
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
geom391 Finding a point that partitions a segment in the plane in a given ratio
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
geom001 Finding an angle measure of a triangle given two angles
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

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
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

Triangles, Quadrilaterals, and Polygons

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
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
geom519 Identifying and naming congruent parts of congruent triangles
geom357 Identifying transformations
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
alge407 Introduction to the Pythagorean Theorem
geom044 Pythagorean Theorem

alge675 Using the Pythagorean Theorem to find distance on a grid
alge408 Word problem involving the Pythagorean Theorem
geom862 Using the Pythagorean Theorem repeatedly
geom603 Identifying side lengths that give right triangles
geom589 Demonstrating the converse of the Pythagorean Theorem
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)
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 and Transformations

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
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geom452 Identifying similar right triangles that overlap
alge814 Using right triangles to find the slope of a line
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
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
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

Area, Volume, and Circles

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
geom430 Word problem on population density
geom537 Finding the perimeter or area of a rectangle in the coordinate plane
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
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
mstat011 Area as probability
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
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
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
geom654 Informal argument for the formula of the volume of a cone
geom490 Word problem involving volumes of similar solids
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
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

Polynomials and Quadratic Functions

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
alge681 Solving an equation written in factored form
alge956 Finding the roots of a quadratic equation of the form ax2 + 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
alge713 Using the Pythagorean Theorem and a quadratic equation to find side lengths of a right triangle
alge962 Solving an equation of the form x2 = 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 = x2 + bx + c
pcalc746 Graphing a parabola of the form y = ax2 + bx + c: Integer coefficients
pcalc747 Graphing a parabola of the form y = ax2 + 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
pcalc566 Graphing a parabola of the form y2 = ax or x2 = ay
geom494 Deriving the equation of a parabola given its focus and directrix
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
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
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, Trigonometry, and Rational Expressions

alge413 Finding all square roots of a number
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
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
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
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 x3 = a using integers
geom565 Finding the side length of a cube given its volume
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
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
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
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
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

B.38 Integrated Mathematics II

Real Numbers

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
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
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
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
arith687 Fractional position on a number line
arith667 Plotting fractions on a number line
arith830 Reading decimal position on a number line: Hundredths
alge286 Plotting integers on a number line
arith403 Finding opposites of integers
arith605 Plotting rational numbers on a number line
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
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
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
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
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
geom410 Word problem involving the area of a square or a rectangle
geom142 Word problem involving the area between two rectangles
geom311 Volume of a rectangular prism
geom571 Word problem involving the volume of a rectangular prism
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
unit012 Time unit conversion with whole number values
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
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
arith826 Simplifying a ratio of whole numbers: Problem type 2
arith825 Simplifying a ratio of decimals
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

Linear Equations and Inequalities

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
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
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
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
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
unit035 Converting between compound units: Basic
unit036 Converting between compound units: Advanced
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
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)÷b = c÷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
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
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
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
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
alge015 Translating a sentence by using an inequality symbol
alge653 Introduction to identifying solutions to an inequality
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
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
alge747 Solving a compound linear inequality: Interval notation
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, Functions, and Systems

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
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

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
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—
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge572 Graphing a function of the form f(x) = ax2
alge573 Graphing a function of the form f(x) = ax2 + c
alge253 Graphing a parabola of the form y = (x-h)2 + k
alge262 Graphing a cubic function of the form y = ax3
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
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
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
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
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
alge681 Solving an equation written in factored form
alge956 Finding the roots of a quadratic equation of the form ax2 + 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

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
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
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
alge784 Solving a quadratic inequality written in factored form
alge771 Solving a quadratic inequality
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
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 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
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
arith093 Simplifying the square root of a whole number less than 100
arith762 Simplifying the square root of a whole number greater than 100
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
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
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
alge698 Solving an equation of the form x3 = a using integers
geom565 Finding the side length of a cube given its volume
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 and Exponential Functions

alge962 Solving an equation of the form x2 = 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
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
alge569 Graphing a parabola of the form y = x2 + bx + c
pcalc746 Graphing a parabola of the form y = ax2 + bx + c: Integer coefficients
pcalc747 Graphing a parabola of the form y = ax2 + 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
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
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
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
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
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 logba = 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

Segments, Angles, and Triangles

geom349 Naming segments, rays, and lines
geom459 Analyzing relationships between points, lines, and planes given a figure
geom359 Identifying congruent shapes on a grid
geom407 Matching basic geometric terms with their definitions
geom392 Introduction to segment addition
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
geom390 Finding a point that partitions a number line segment in a given ratio
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
geom391 Finding a point that partitions a segment in the plane in a given ratio
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
geom001 Finding an angle measure of a triangle given two angles
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
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
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
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
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
geom519 Identifying and naming congruent parts of congruent triangles
geom357 Identifying transformations
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
alge407 Introduction to the Pythagorean Theorem
geom044 Pythagorean Theorem
alge675 Using the Pythagorean Theorem to find distance on a grid
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
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, Similarity, and Transformations

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
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
geom452 Identifying similar right triangles that overlap
alge814 Using right triangles to find the slope of a line
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
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
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

Area, Volume, and Circles

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
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
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
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
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
geom654 Informal argument for the formula of the volume of a cone
geom490 Word problem involving volumes of similar solids
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
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
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

Sequences, Probability, 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
alge732 Finding patterns in shapes
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
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
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
mstat001 Mean 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
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
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
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
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
stat021 Population standard deviation
stat852 Word problem involving calculations from a normal distribution
pcalc566 Graphing a parabola of the form y2 = ax or x2 = ay
pcalc067 Graphing a parabola of the form ay2 + by + cx + d = 0 or ax2 + 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 ay2 + by + cx + d = 0 or ax2 + 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: Ax2 + By2 = 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: Ax2 - By2 - 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
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
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

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
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
geom858 Scalar multiplication of a vector: Geometric Approach
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.39 Integrated Mathematics III

Real Numbers

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
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
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
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
arith687 Fractional position on a number line
arith667 Plotting fractions on a number line
arith830 Reading decimal position on a number line: Hundredths
alge286 Plotting integers on a number line
arith403 Finding opposites of integers
arith605 Plotting rational numbers on a number line
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
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
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
geom349 Naming segments, rays, and lines
geom151 Measuring an angle with the protractor
geom303 Acute, obtuse, and right angles
geom306 Acute, obtuse, and right triangles
geom460 Naming angles, sides of angles, and vertices
geom359 Identifying congruent shapes on a grid
geom360 Identifying similar or congruent shapes on a grid
geom519 Identifying and naming congruent parts of congruent triangles
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
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
geom410 Word problem involving the area of a square or a rectangle
geom142 Word problem involving the area between two rectangles
geom501 Finding the area of a right triangle on a grid
geom801 Area of a triangle
geom347 Introduction to a circle: Diameter, radius, and chord
geom016 Circumference of a circle
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
geom868 Classifying solids
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
geom311 Volume of a rectangular prism
geom571 Word problem involving the volume of a rectangular prism
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
unit012 Time unit conversion with whole number values
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
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
arith826 Simplifying a ratio of whole numbers: Problem type 2
arith825 Simplifying a ratio of decimals
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

Linear Equations and Inequalities

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
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
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
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
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
unit035 Converting between compound units: Basic
unit036 Converting between compound units: Advanced
arith514 Converting a repeating decimal to a fraction
geom392 Introduction to segment addition
geom039 Finding supplementary and complementary angles
geom454 Introduction to angle addition

geom001 Finding an angle measure of a triangle given two angles
geom551 Finding the complement or supplement of an angle given a figure
geom583 Finding angle measures of a triangle given two angles of a similar triangle
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
geom430 Word problem on population density
geom386 Computations involving density, mass, and volume
geom387 Word problem on density involving the volume of a rectangular solid
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)÷b = c÷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
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
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
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
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
alge015 Translating a sentence by using an inequality symbol
alge653 Introduction to identifying solutions to an inequality
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
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
alge747 Solving a compound linear inequality: Interval notation
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, Functions, and Systems

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
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
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
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—
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 = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge572 Graphing a function of the form f(x) = ax2
alge573 Graphing a function of the form f(x) = ax2 + c
alge253 Graphing a parabola of the form y = (x-h)2 + k
alge262 Graphing a cubic function of the form y = ax3
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
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

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

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
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
alge681 Solving an equation written in factored form
alge956 Finding the roots of a quadratic equation of the form ax2 + 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
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
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
alge658 Introduction to solving a rational equation
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
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
alge784 Solving a quadratic inequality written in factored form
alge771 Solving a quadratic inequality
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
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 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
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
arith093 Simplifying the square root of a whole number less than 100
arith762 Simplifying the square root of a whole number greater than 100
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
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
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

alge698 Solving an equation of the form x3 = a using integers
geom565 Finding the side length of a cube given its volume
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

Polynomial, Exponential, and Logarithmic Functions

alge962 Solving an equation of the form x2 = 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
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
alge569 Graphing a parabola of the form y = x2 + bx + c
pcalc746 Graphing a parabola of the form y = ax2 + bx + c: Integer coefficients
pcalc747 Graphing a parabola of the form y = ax2 + 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
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
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
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
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
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 logba = 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, Probability, 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
alge732 Finding patterns in shapes
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
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
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
mstat001 Mean 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
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
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
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
stat021 Population standard deviation

stat852 Word problem involving calculations from a normal distribution
alge132 Distance between two points in the plane: Exact answers
alge324 Distance between two points in the plane: Decimal answers
geom395 Midpoint of a number line segment: Integers
alge191 Midpoint of a line segment in the plane
pcalc566 Graphing a parabola of the form y2 = ax or x2 = ay
pcalc067 Graphing a parabola of the form ay2 + by + cx + d = 0 or ax2 + 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 ay2 + by + cx + d = 0 or ax2 + 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: Ax2 + By2 = 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: Ax2 - By2 - 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
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
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

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
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
geom126 Area of a sector of a circle: Exact answer in terms of pi
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
geom858 Scalar multiplication of a vector: Geometric Approach
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

Segments, Angles, and Triangles

geom459 Analyzing relationships between points, lines, and planes given a figure
geom407 Matching basic geometric terms with their definitions
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
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
geom390 Finding a point that partitions a number line segment in a given ratio
geom458 Identifying congruent segments 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
geom391 Finding a point that partitions a segment in the plane in a given ratio
geom152 Drawing an angle with the protractor
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
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
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
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
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
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
geom862 Using the Pythagorean Theorem repeatedly
alge675 Using the Pythagorean Theorem to find distance on a grid
geom603 Identifying side lengths that give right triangles
geom589 Demonstrating the converse of the Pythagorean Theorem
geom588 Informal proof of the Pythagorean Theorem
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, Similarity, and Transformations

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
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
geom452 Identifying similar right triangles that overlap
alge814 Using right triangles to find the slope of a line
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
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
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

Area, Volume, and Circles

geom022 Area of a parallelogram
geom509 Finding the area of a right triangle or its corresponding rectangle
geom537 Finding the perimeter or area of a rectangle in the coordinate plane
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
geom344 Area involving rectangles and triangles
alge724 Finding an area in terms of variables
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
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
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
geom429 Informal argument for the formula of the area of a sector
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
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
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
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
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
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
geom654 Informal argument for the formula of the volume of a cone
geom490 Word problem involving volumes of similar solids
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
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
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

B.40 GPS Integrated H.S. Math I

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
arith663 Writing ratios for real-world situations
arith064 Solving a word problem on proportions using a unit rate
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
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
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

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
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
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

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
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
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
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 = ax2
alge253 Graphing a parabola of the form y = (x-h)2 + k
pcalc746 Graphing a parabola of the form y = ax2 + 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 = ax3
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
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

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
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
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
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
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
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
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.41 Algebra 2

Real Numbers and Linear Equations

arith691 Ordering integers
alge286 Plotting integers on a number line
arith687 Fractional position on a number line
arith605 Plotting rational numbers on a number line
arith108 Integer addition: Problem type 2
arith107 Integer subtraction
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
arith105 Signed fraction multiplication: Advanced
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
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
alge059 Ordering fractions with variables
arith036 Scientific notation with positive exponent
arith037 Scientific notation with negative exponent
scinot002 Multiplying and dividing numbers written in scientific notation
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
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
alge010 Additive property of equality with integers
alge266 Additive property of equality with a negative coefficient
alge008 Multiplicative property of equality with whole numbers
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
alge602 Writing a one-step variable expression for a real-world situation
alge016 Translating a sentence into a one-step equation
alge291 Translating a phrase into a two-step expression
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
alge218 Solving a word problem involving rates and time conversion
alge796 Solving a distance, rate, time problem using a linear 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
stat801 Computations from a circle graph
mstat049 Computing a percentage from a table of values
arith232 Finding simple interest without a calculator
stat803 Finding the value for a new score that will yield a given mean
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
alge747 Solving a compound linear inequality: Interval notation
alge748 Writing an inequality for a real-world situation
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
alge169 Solving an absolute value inequality: Advanced
geom044 Pythagorean Theorem
geom300 Perimeter of a square or a rectangle
geom078 Sides of polygons having the same perimeter
geom817 Finding a side length given the perimeter and side lengths with variables
geom019 Area of a square or a rectangle
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
geom802 Circumference and area of a circle
geom838 Circumference ratios
geom036 Word problem involving the area between two concentric circles
geom311 Volume of a rectangular prism
geom035 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
geom034 Surface area of a cylinder: Exact answers in terms of pi
geom500 Solving equations involving vertical angles and linear pairs
geom502 Finding angle measures of a right or isosceles triangle given angles with variables
geom037 Similar polygons
geom337 Indirect measurement

Lines and Functions

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
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
mstat023 Scatter plots and correlation
mstat030 Sketching the line of best fit
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
set001 Set builder notation
set004 Set builder and interval notation
set002 Union and intersection of finite sets
set005 Union and intersection of intervals
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
fun016 Domain and range from ordered pairs
fun032 Identifying functions from relations
fun010 Vertical line test
pcalc757 Determining whether an equation defines a function: Advanced
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
pcalc773 Transforming the graph of a function using more than one transformation
alge252 Graphing a parabola of the form y = ax2
alge262 Graphing a cubic function of the form y = ax3
alge168 Graphing an absolute value equation in the plane: Advanced
fun031 Graphing a piecewise-defined function: Problem type 1
mstat051 Choosing a graph to fit a narrative: Advanced

Systems of Linear Equations and Matrices

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
alge077 Creating an inconsistent system of linear 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
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
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
pcalc042 Finding the determinant of a 2x2 matrix
pcalc043 Finding the determinant of a 3x3 matrix
pcalc040 Finding the inverse of a 2x2 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
pcalc711 Using the inverse of a matrix 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 Polynomial Expressions

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
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
alge757 Power, product, and quotient rules with negative exponents

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
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
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
alge042 Factoring with repeated use of the difference of squares formula
alge044 Factoring a sum or difference of two cubes
alge038 Factoring a polynomial by grouping: Problem type 1
alge181 Factoring a polynomial by grouping: Problem type 2

Quadratic and Polynomial Functions

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
alge163 Writing a quadratic equation given the roots and the leading coefficient
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
alge193 Discriminant of a quadratic equation with parameter
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
pcalc774 Rewriting a quadratic function to find the vertex of its graph
pcalc793 Using a graphing calculator to find the x-intercept(s) and vertex of a quadratic function
pcalc775 Finding the maximum or minimum of a quadratic function
alge785 Word problem involving the maximum or minimum of a quadratic function
pcalc762 Range of a quadratic function
alge253 Graphing a parabola of the form y = (x-h)2 + k
pcalc746 Graphing a parabola of the form y = ax2 + bx + c: Integer coefficients
pcalc747 Graphing a parabola of the form y = ax2 + bx + c: Rational coefficients
alge702 Classifying the graph of a function
alge723 How the leading coefficient affects the shape of a parabola
pcalc680 Writing the equation of a quadratic function given its graph
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
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
alge681 Solving an equation written in factored form
alge046 Roots of a product of polynomials
pcalc764 Finding zeros of a polynomial function written in factored form
pcalc766 Finding a polynomial of a given degree with given zeros: 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
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
pcalc788 Descartes' Rule of Signs
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
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
pcalc705 Linear factors theorem and conjugate zeros theorem
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
pcalc783 Matching graphs with polynomial functions
pcalc795 Using a graphing calculator to find zeros of a polynomial function
pcalc794 Using a graphing calculator to find local extrema of a polynomial function
pcalc704 Using a graphing calculator to solve a word problem involving a polynomial of degree 3
pcalc115 Using a graphing calculator to solve a word problem involving a local extremum of a polynomial function

Radicals and Advanced Functions

alge213 Domain of a square root function
pcalc781 Graphing a square root function
arith016 Square root of a perfect square
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
alge082 Simplifying a product of radical expressions: Multivariate, fractional expressions
alge276 Simplifying a product involving square roots using the distributive property: Advanced
alge774 Special products of radical expressions: Conjugates and squaring
alge776 Simplifying products or quotients of higher radicals with different indices: Multivariate
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
alge182 Solving a radical equation that simplifies to a quadratic equation: Two radicals
alge777 Solving an equation with a root index greater than 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
alge230 Solving an equation with positive rational exponent
alge231 Solving an equation with negative rational exponent
fun019 Sum, difference, and product of two functions
alge786 Quotient of two functions: Basic
fun022 Composition of two functions: Basic
fun021 Composition of two functions: Domain and range
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
pcalc778 Inverse functions: Quadratic, cubic, radical

Exponential and Logarithmic Functions

pcalc798 Evaluating an exponential function that models a real-world situation
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
alge787 Writing an expression as a single logarithm
pcalc779 Expanding a logarithmic expression: Problem type 1
pcalc780 Expanding a logarithmic expression: Problem type 2
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 logba = 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
pcalc806 Using a graphing calculator to solve an exponential or logarithmic equation
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
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
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
alge788 Graphing a logarithmic function: Basic
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

Rational Expressions and Functions

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
alge162 Complex fraction that contains a complex fraction
alge767 Complex fraction: GCF and quadratic factoring
alge768 Complex fraction made of sums involving rational expressions
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
alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced
alge783 Solving a rational inequality: Problem type 1
pcalc677 Solving a rational inequality: Problem type 2
pcalc789 Finding the asymptotes of a rational function: Basic
pcalc790 Finding horizontal and vertical asymptotes of a rational function: Quadratic numerator or denominator
pcalc108 Graphing a rational function: Constant or 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
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

Conic Sections

alge191 Midpoint of a line segment in the plane
alge132 Distance between two points in the plane: Exact answers
pcalc067 Graphing a parabola of the form ay2 + by + cx + d = 0 or ax2 + 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 ay2 + by + cx + d = 0 or ax2 + bx + cy + d = 0
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
pcalc070 Graphing an ellipse centered at the origin: Ax2 + By2 = C

pcalc734 Graphing an ellipse given its equation in standard form
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
pcalc075 Graphing a hyperbola centered at the origin: Ax2 - By2 - C = 0
pcalc735 Graphing a hyperbola given its equation in standard form
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
pcalc098 Solving a system of nonlinear equations: Problem type 1
pcalc796 Using a graphing calculator to solve a system of equations
pcalc096 Graphing a system of nonlinear inequalities: Problem type 1
pcalc097 Graphing a system of nonlinear inequalities: Problem type 2

Sequences and Probability

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
pcalc715 Finding a specified term of an arithmetic sequence given two terms of the sequence
pcalc717 Finding a specified term of a geometric sequence given two terms of the sequence
pcalc718 Sum of the first n terms of an arithmetic sequence
pcalc719 Sum of the first n terms of a geometric sequence
pcalc720 Sum of an infinite geometric series
mstat015 Counting principle
pcalc082 Factorial expressions
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
mstat010 Probability of an event
stat106 Outcomes and event probability
stat112 Probabilities involving two dice
mstat046 Experimental and theoretical probability
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
stat114 Probability of intersection or union: Word problems
stat115 Independent events: Basic
stat120 Probability of union: Basic
stat116 Conditional probability: Basic
stat174 Binomial problems: Basic
stat155 Binomial problems: Advanced
mstat003 Mode of a data set
mstat055 Finding the mode and range of a data set
mstat028 Mean and median of a data set
mstat066 Weighted mean
mstat006 Constructing a box-and-whisker plot
stat009 Percentiles
stat021 Population standard deviation
stat852 Word problem involving calculations from a normal distribution

Trigonometry

geom506 Special right triangles: Exact answers
pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths
pcalc008 Finding trigonometric ratios given a right triangle
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
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
pcalc626 Reference angles: Problem type 1
pcalc632 Reference angles: Problem type 2
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
pcalc671 Determining the location of a terminal point given the signs of trigonometric values
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
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
pcalc033 Solving a triangle with the law of cosines
pcalc645 Solving a word problem using the law of cosines
pcalc646 Finding the area of a triangle using trigonometry
pcalc647 Heron's formula
pcalc633 Amplitude and period of sine and cosine functions
pcalc634 Amplitude, period, and phase shift of sine and cosine functions
pcalc640 Word problem involving a sine or cosine function: Problem type 1
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
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)
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
pcalc648 Simplifying trigonometric expressions
pcalc666 Using cofunction identities
pcalc029 Sum and difference identities: Problem type 1
pcalc663 Sum and difference identities: Problem type 2
pcalc664 Sum and difference identities: Problem type 3
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
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
pcalc403 Proving trigonometric identities using sum and difference properties
pcalc402 Proving trigonometric identities using double-angle properties
pcalc650 Finding solutions in an interval for a basic equation involving sine or cosine

pcalc660 Solving a basic trigonometric equation using a calculator
pcalc651 Finding solutions in an interval for a basic tangent, cotangent, secant, or cosecant equation
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
pcalc020 Solving a basic trigonometric equation involving sine or cosine
pcalc021 Solving a basic trigonometric equation involving tangent, cotangent, secant, or cosecant
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
pcalc063 Translation of a vector
pcalc739 Multiplication of a vector by a scalar: Geometric approach
geom857 Vector addition: Geometric approach
vector007 Vector subtraction: Geometric approach
geom856 Vector addition and scalar multiplication: Component form
vector008 Linear combination of vectors: Component form
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.42 Algebra 2 with Trigonometry

Real Numbers and Linear Equations

arith691 Ordering integers
alge286 Plotting integers on a number line
arith687 Fractional position on a number line
arith605 Plotting rational numbers on a number line
arith108 Integer addition: Problem type 2
arith107 Integer subtraction
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
arith105 Signed fraction multiplication: Advanced
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
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
alge059 Ordering fractions with variables
arith036 Scientific notation with positive exponent

arith037 Scientific notation with negative exponent
scinot002 Multiplying and dividing numbers written in scientific notation
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
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
alge010 Additive property of equality with integers
alge266 Additive property of equality with a negative coefficient
alge008 Multiplicative property of equality with whole numbers
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
alge602 Writing a one-step variable expression for a real-world situation
alge016 Translating a sentence into a one-step equation
alge291 Translating a phrase into a two-step expression
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
alge218 Solving a word problem involving rates and time conversion
alge796 Solving a distance, rate, time problem using a linear 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
stat801 Computations from a circle graph
mstat049 Computing a percentage from a table of values
arith232 Finding simple interest without a calculator
stat803 Finding the value for a new score that will yield a given mean
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
alge747 Solving a compound linear inequality: Interval notation
alge748 Writing an inequality for a real-world situation
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
alge169 Solving an absolute value inequality: Advanced
geom044 Pythagorean Theorem
geom300 Perimeter of a square or a rectangle
geom078 Sides of polygons having the same perimeter
geom817 Finding a side length given the perimeter and side lengths with variables
geom019 Area of a square or a rectangle
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
geom802 Circumference and area of a circle
geom838 Circumference ratios
geom036 Word problem involving the area between two concentric circles
geom311 Volume of a rectangular prism
geom035 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
geom034 Surface area of a cylinder: Exact answers in terms of pi
geom500 Solving equations involving vertical angles and linear pairs
geom502 Finding angle measures of a right or isosceles triangle given angles with variables
geom037 Similar polygons
geom337 Indirect measurement

Lines and Functions

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
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
mstat023 Scatter plots and correlation
mstat030 Sketching the line of best fit
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
set001 Set builder notation
set004 Set builder and interval notation
set002 Union and intersection of finite sets
set005 Union and intersection of intervals
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
fun016 Domain and range from ordered pairs
fun032 Identifying functions from relations
fun010 Vertical line test
pcalc757 Determining whether an equation defines a function: Advanced
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
pcalc773 Transforming the graph of a function using more than one transformation
alge252 Graphing a parabola of the form y = ax2
alge262 Graphing a cubic function of the form y = ax3
alge168 Graphing an absolute value equation in the plane: Advanced
fun031 Graphing a piecewise-defined function: Problem type 1
mstat051 Choosing a graph to fit a narrative: Advanced

Systems of Linear Equations and Matrices

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
alge077 Creating an inconsistent system of linear 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
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
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
pcalc042 Finding the determinant of a 2x2 matrix
pcalc043 Finding the determinant of a 3x3 matrix
pcalc040 Finding the inverse of a 2x2 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
pcalc711 Using the inverse of a matrix 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 Polynomial Expressions

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
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
alge757 Power, product, and quotient rules with negative exponents
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
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
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
alge042 Factoring with repeated use of the difference of squares formula
alge044 Factoring a sum or difference of two cubes
alge038 Factoring a polynomial by grouping: Problem type 1
alge181 Factoring a polynomial by grouping: Problem type 2

Quadratic and Polynomial Functions

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
alge163 Writing a quadratic equation given the roots and the leading coefficient
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
alge193 Discriminant of a quadratic equation with parameter
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
pcalc774 Rewriting a quadratic function to find the vertex of its graph
pcalc793 Using a graphing calculator to find the x-intercept(s) and vertex of a quadratic function
pcalc775 Finding the maximum or minimum of a quadratic function
alge785 Word problem involving the maximum or minimum of a quadratic function
pcalc762 Range of a quadratic function
alge253 Graphing a parabola of the form y = (x-h)2 + k
pcalc746 Graphing a parabola of the form y = ax2 + bx + c: Integer coefficients
pcalc747 Graphing a parabola of the form y = ax2 + bx + c: Rational coefficients
alge702 Classifying the graph of a function
alge723 How the leading coefficient affects the shape of a parabola
pcalc680 Writing the equation of a quadratic function given its graph
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
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
alge681 Solving an equation written in factored form
alge046 Roots of a product of polynomials
pcalc764 Finding zeros of a polynomial function written in factored form
pcalc766 Finding a polynomial of a given degree with given zeros: 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
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
pcalc788 Descartes' Rule of Signs
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
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
pcalc705 Linear factors theorem and conjugate zeros theorem
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
pcalc783 Matching graphs with polynomial functions
pcalc795 Using a graphing calculator to find zeros of a polynomial function
pcalc794 Using a graphing calculator to find local extrema of a polynomial function

pcalc704 Using a graphing calculator to solve a word problem involving a polynomial of degree 3
pcalc115 Using a graphing calculator to solve a word problem involving a local extremum of a polynomial function

Radicals and Advanced Functions

alge213 Domain of a square root function
pcalc781 Graphing a square root function
arith016 Square root of a perfect square
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
alge082 Simplifying a product of radical expressions: Multivariate, fractional expressions
alge276 Simplifying a product involving square roots using the distributive property: Advanced
alge774 Special products of radical expressions: Conjugates and squaring
alge776 Simplifying products or quotients of higher radicals with different indices: Multivariate
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
alge182 Solving a radical equation that simplifies to a quadratic equation: Two radicals
alge777 Solving an equation with a root index greater than 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
alge230 Solving an equation with positive rational exponent
alge231 Solving an equation with negative rational exponent
fun019 Sum, difference, and product of two functions
alge786 Quotient of two functions: Basic
fun022 Composition of two functions: Basic
fun021 Composition of two functions: Domain and range
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
pcalc778 Inverse functions: Quadratic, cubic, radical

Exponential and Logarithmic Functions

pcalc798 Evaluating an exponential function that models a real-world situation
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
alge787 Writing an expression as a single logarithm
pcalc779 Expanding a logarithmic expression: Problem type 1
pcalc780 Expanding a logarithmic expression: Problem type 2
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 logba = 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
pcalc806 Using a graphing calculator to solve an exponential or logarithmic equation
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
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
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
alge788 Graphing a logarithmic function: Basic
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

Rational Expressions and Functions

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
alge162 Complex fraction that contains a complex fraction
alge767 Complex fraction: GCF and quadratic factoring
alge768 Complex fraction made of sums involving rational expressions
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
alge047 Solving a rational equation that simplifies to quadratic: Proportional form, advanced

alge783 Solving a rational inequality: Problem type 1
pcalc677 Solving a rational inequality: Problem type 2
pcalc789 Finding the asymptotes of a rational function: Basic
pcalc790 Finding horizontal and vertical asymptotes of a rational function: Quadratic numerator or denominator
pcalc108 Graphing a rational function: Constant or 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
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

Conic Sections

alge191 Midpoint of a line segment in the plane
alge132 Distance between two points in the plane: Exact answers
pcalc067 Graphing a parabola of the form ay2 + by + cx + d = 0 or ax2 + 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 ay2 + by + cx + d = 0 or ax2 + bx + cy + d = 0
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
pcalc070 Graphing an ellipse centered at the origin: Ax2 + By2 = C
pcalc734 Graphing an ellipse given its equation in standard form
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
pcalc075 Graphing a hyperbola centered at the origin: Ax2 - By2 - C = 0
pcalc735 Graphing a hyperbola given its equation in standard form
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
pcalc098 Solving a system of nonlinear equations: Problem type 1
pcalc796 Using a graphing calculator to solve a system of equations
pcalc096 Graphing a system of nonlinear inequalities: Problem type 1
pcalc097 Graphing a system of nonlinear inequalities: Problem type 2

Sequences and Probability

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
pcalc715 Finding a specified term of an arithmetic sequence given two terms of the sequence
pcalc717 Finding a specified term of a geometric sequence given two terms of the sequence
pcalc718 Sum of the first n terms of an arithmetic sequence
pcalc719 Sum of the first n terms of a geometric sequence
pcalc720 Sum of an infinite geometric series
mstat015 Counting principle
pcalc082 Factorial expressions
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
mstat010 Probability of an event
stat106 Outcomes and event probability
stat112 Probabilities involving two dice
mstat046 Experimental and theoretical probability
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
stat114 Probability of intersection or union: Word problems
stat115 Independent events: Basic
stat120 Probability of union: Basic
stat116 Conditional probability: Basic
stat174 Binomial problems: Basic
stat155 Binomial problems: Advanced
mstat003 Mode of a data set
mstat055 Finding the mode and range of a data set
mstat028 Mean and median of a data set
mstat066 Weighted mean
mstat006 Constructing a box-and-whisker plot
stat009 Percentiles
stat021 Population standard deviation
stat852 Word problem involving calculations from a normal distribution

Trigonometry

geom506 Special right triangles: Exact answers
pcalc600 Sine, cosine, and tangent ratios: Variables for side lengths
pcalc008 Finding trigonometric ratios given a right triangle
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
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
pcalc626 Reference angles: Problem type 1
pcalc632 Reference angles: Problem type 2
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
pcalc671 Determining the location of a terminal point given the signs of trigonometric values
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
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
pcalc033 Solving a triangle with the law of cosines

pcalc645 Solving a word problem using the law of cosines
pcalc646 Finding the area of a triangle using trigonometry
pcalc647 Heron's formula
pcalc633 Amplitude and period of sine and cosine functions
pcalc634 Amplitude, period, and phase shift of sine and cosine functions
pcalc640 Word problem involving a sine or cosine function: Problem type 1
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
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)
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
pcalc648 Simplifying trigonometric expressions
pcalc666 Using cofunction identities
pcalc029 Sum and difference identities: Problem type 1
pcalc663 Sum and difference identities: Problem type 2
pcalc664 Sum and difference identities: Problem type 3
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
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
pcalc403 Proving trigonometric identities using sum and difference properties
pcalc402 Proving trigonometric identities using double-angle properties
pcalc650 Finding solutions in an interval for a basic equation involving sine or cosine
pcalc660 Solving a basic trigonometric equation using a calculator
pcalc651 Finding solutions in an interval for a basic tangent, cotangent, secant, or cosecant equation
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
pcalc020 Solving a basic trigonometric equation involving sine or cosine
pcalc021 Solving a basic trigonometric equation involving tangent, cotangent, secant, or cosecant
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
pcalc063 Translation of a vector
pcalc739 Multiplication of a vector by a scalar: Geometric approach
geom857 Vector addition: Geometric approach
vector007 Vector subtraction: Geometric approach
geom856 Vector addition and scalar multiplication: Component form
vector008 Linear combination of vectors: Component form
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.43 PreCalculus

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)÷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
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 ax2 + 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 x2 = 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—
alge954 Graphing a parabola of the form y = ax2
alge955 Graphing a parabola of the form y = ax2 + c
alge262 Graphing a cubic function of the form y = ax3
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) = ax2
alge573 Graphing a function of the form f(x) = ax2 + 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 = x2 + bx + c
pcalc574 Graphing a parabola of the form y = a(x-h)2 + k
pcalc746 Graphing a parabola of the form y = ax2 + bx + c: Integer coefficients
pcalc747 Graphing a parabola of the form y = ax2 + 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 logba = 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 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