Name: Key

8th Grade – Test 2

10/18/2016

1) Simplify the following expressions by combining like terms. (8)

a) $5x + 10y + 7y - 12x$ $-7x+17y$

b) $4x + 6x - 10x^2$ $10x-10x^2$

c) $-2x + 11 + 10x$ $8x+11$

d) $-20x - 10x$ $-30x$

2) Match the following equations with the properties they represent. (3)

D $a * b = b * a$

E $1 * x = x$

F $(ab)x = a(bx)$

C $a + b = b + a$

A $x + 0 = x$

B $a(b + c) = ab + ac$

A) Identity Property of Addition

B) Distributive Property

C) Commutative Property of Addition

D) Commutative Property of Multiplication

E) Identity Property of Multiplication

F) Associative Property of Multiplication

3) Write the following in words. (8)

a) $x + 5 = 6$ x plus 5 is 6

b) $8x = -9$ 8 times x is -9.

c) $\frac{x}{2} = 20$ x divided by 2 is 20

d) $7 - x = 4$ 7 minus x is 4

4) Translate the following into EQUATIONS: (4)

a) The quotient of 12 and y is 15 $12 \div y = 15$

b) The sum of 5 and x is 20 $5 + x = 20$

5) Given: $15x - 7 + 20x$ fill in the following table. (3)

Terms:	Coefficients:	Constant Terms:	Like Terms:	Simplify the expression:
-7, 20x	~~10~~ 15, 20	-7	15x, 20x	35x - 7

15x,

6) Solve the following equations. Show ALL your work! (8)

a) $x - 5 = 2$ $+5 \quad +5$ $x = 7$

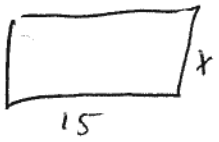
b) $x + 8 - 9 = 20$ $x - 1 = 20$ $+1 \quad +1$ $x = 21$

c) $\frac{4x}{4} = \frac{24}{4}$ $x = 6$

d) $7x - 5x = -18$ $\frac{2x}{2} = \frac{-18}{2}$ $x = -9$

7) You have a rectangle with a length of 15 ft and width of x ft.

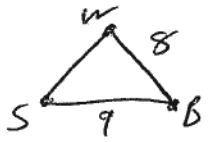
a) Draw a picture to represent this.



b) If you need the area to be 45 ft^2, what does x have to be?

$\frac{15x}{15} = \frac{45}{15}$ $x = 3$

8) Matthew is building a triangular pen for his three pigs so he can tie each one in a corner. He wants Waldo (currently missing) to be 8 yds away from Bambi. He needs Bambi to be 9 yds away from Skunky (he stinks). If Matthew only has 24 yds of fence, how far away are Waldo and Skunky?



24
−17
7yds

9) Evaluate the following expressions for the given values.

a) $6x + 7y - 2x$; use $x = 1$ and $y = -3$ $6(1) + 7(-3) - 2(1) = 6 - 21 - 2 = -17$

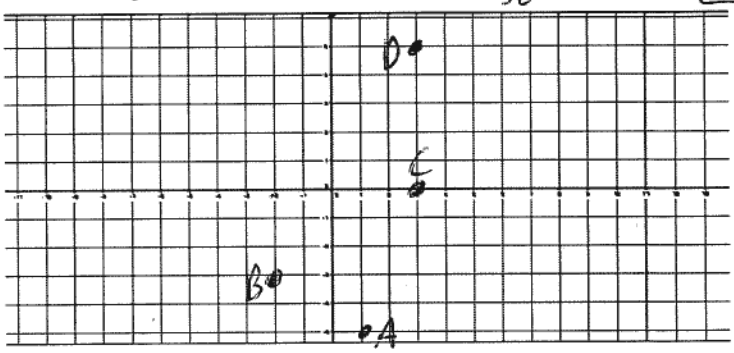
b) $-x + 4(y - 3x)$; use $x = 20$ and $y = 10$ $-20 + 4(10 - 3(20)) = -20 - 20$

$(10 - 60)$
-50

-220

10) Use the following graph to plot and label the points:

$A(1,-5)$ $B(-2,-3)$ $C(3,0)$
$D(3,5)$



11) What quadrant is each letter in:

a) IV
b) III
c) B/w I & IV
d) I

12) a) What are the two things required to have like terms? The same letter and exponent.

b) The letter in an equation is always the variable.

Name: Key
PreAlgebra – Test 3
11/22/2016

1) What are all the steps to solving any algebra problem?

(2)
a) Get rid of parentheses
b) Combine like terms.
c) Move variable to one side
d) PEMDAS

2) Solve the following equations.

(12)

a) $3x + 8 = 12$

$-8 \quad -8$

$\frac{3x}{3} = \frac{4}{3}$

$x = 4/3$

b) $-\frac{x}{2} - 15 = 10$

$+15 \quad +15$

$\frac{x}{-2} = 25$

$x = -50$

c) $\frac{x}{4} + 30 = 25$

$-30 \quad -30$

$4 \cdot \frac{x}{4} = -5 \cdot 4$

$x = -20$

d) $4x - 20 = 16$

$+20 \quad +20$

$\frac{4x}{4} = \frac{36}{4}$

$x = 9$

3) Solve the following equations. Be sure to show all your work!

(12)

a) $6(x + 7) - 4 = 14$

$6x + 42 - 4 = 14$

$6x + 38 = 14$

$-38 \quad -38$

$\frac{6x}{6} = \frac{-24}{6}$

$x = -4$

b) $\frac{x-6}{5} = 16$ ·5

$x - 6 = 80$

$+6 \quad +6$

$x = 86$

c) $4(x - 4x) = 8(45 + 10)$

$4x - 16x = 360 + 80$

$-12x = 440$

$x = -36.\overline{6}$

d) $-2(x + 7) = -30$

$-2x - 14 = -30$

$+14 \quad +14$

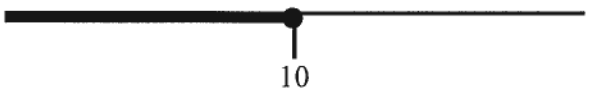
$\frac{-2x}{-2} = \frac{-16}{-2}$

$x = 8$

4) Write an inequality for the following graphs.

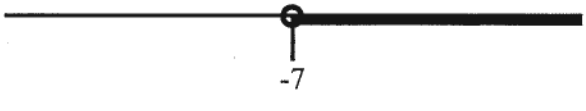
(3)

a)



$x \leq 10$

b)



$x > -7$

5)

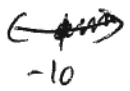
(2)

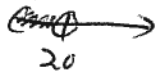
a) Which side should the variable always be on to properly graph an inequality? Left

b) When you multiply or divide by a negative, you have to switch the inequality sign.

6) Graph the following inequalities.

(7)

a) $x \geq -10$ 

b) $20 > x$
$x < 20$ 

7) Write the following in **words**. Do NOT solve it.

(8)

a) $2x - 5 \geq -10$
2 times x minus 5 is greater than or equal to -10

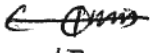
b) $6 + \frac{x}{3} \geq -4$
6 plus x divided by 3 is greater than or equal to -4.

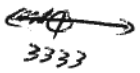
c) $9x + 1 < -6$
9 times x plus 1 is less than -6.

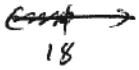
d) $7 + x \leq 8$
7 plus x is less than or equal to 8.

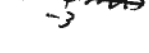
8) Solve the following inequalities for the given variable and graph your answers. Be sure to show all your work!

(8)

a) $x - 5 > 12$
$+5 \quad +5$
$x > 17$ 

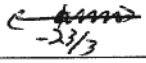
b) $\frac{x}{3} < 1111$ ·3
$x < 3333$ 

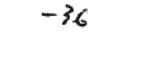
c) $\frac{6x}{6} \leq \frac{108}{6}$
$x \leq 18$ 

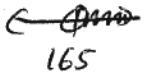
d) $x + 9 \geq 6$
$-9 \quad -9$
$x \geq -3$ 

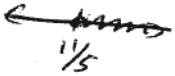
9) Solve the following inequalities for the given variable and graph all your answers. Be sure to show all your work!! Leave your answers in the simplest fraction form.

(12)

a) $-3x - 4 \leq 19$
$+4 \quad +4$
$-3x \leq 23$
$x \geq -\frac{23}{3}$ 

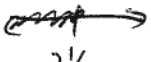
b) $\frac{x}{3} < -12$ ·3
$x < -36$ 

c) $\frac{x}{5} - 8 > 25$
$+8 \quad +8$
$5 \cdot \frac{x}{5} > 33 \cdot 5$
$x > 165$ 

d) $5x - 11 \geq 0$
$+11 \quad +11$
$\frac{5x}{5} \geq \frac{11}{5}$
$x \geq \frac{11}{5}$ 

10) Solve the following inequalities for the given variable and graph your answers if you can. Be sure to show all your work!!! Leave your answers in the simplest fraction form.

(12)

a) $-3(4m + 21) \geq -36$
$-12m - 63 \geq -36$
$+63 \quad +63$
$-12m \geq 27$
$\frac{-12m}{-12} \leq \frac{27}{-12}$
$m \leq -2\frac{1}{4}$ 

b) $5(x + 2) + 1 < 7 - 5x$
$5x + 10 + 1 < 7 - 5x$
$+5x \quad +5x$
$10x + 11 < 7$
$-11 \quad -11$
$\frac{10x}{10} < \frac{-4}{10}$
$x < -\frac{2}{5}$ 

c) $-1 - 5x > -3x - 2x$
$+5x \quad +5x$
$-1 > 0$
NO Soln

d) $-(6x + 6) - 5 \leq 1 - 6x$
$-6x - 6 - 5 \leq 1 - 6x$
$+6x \quad +6x$
$-11 \leq 1$
All Reals

10) Solve the following inequalities for the given variable and graph your answers if you can. Be sure to show all your work!!! Leave your answers in the simplest fraction form.

a) $-3(4x + 21) \geq -36$	b) $5(x + 2) + 1 < 7 - 5x$
c) $-1 - 5x > -3x - 2x$	d) $-(6x + 6) - 5 \leq 1 - 6x$

Name: 11/7/2017 PreAlgebra – Test 3

1) Fill in the blanks:

a) Quotient Rule: When dividing with the same base, you keep the base and subtract the exponents

b) Product Rule: When multiplying with the same base, you keep the base and add the exponents

c) "Power to a power, you multiply the exponents"

2)

a) If you do not see an exponent on the base, then you assume it is 1 (Think $x^?$)

b) Anything with an exponent of zero is 1. (Think x^0)

c) If something has a negative exponent, then you have to reciprocate it.

3) Multiply/divide the following expressions.

a) $10^{-4} * 10^{7}$ 10^3	b) $\frac{9^8}{9^{-5}}$ 9^{13}
c) $\frac{6^{-2}}{6^{-8}}$ 6^6	d) $2 * 2^6 * 2^{-9}$ $2^{-2} = \frac{1}{2^2}$

4) Multiply/divide the following expressions.

a) $2x^{-9} * 6x^{-14}$ $12/x^{23}$	b) $4x^9y^3 * 3x^2$ $12x^{11}y^3$
c) $\frac{15x^9y^5}{20x^4y^9}$ $\frac{3x^5}{4y^4}$	d) $\frac{8x^{-7}}{9x^{14}}$ $\frac{8}{9x^{21}}$

5) Write the following numbers in scientific notation.

a) 0.00462 4.62×10^{-3}	b) .0017 1.7×10^{-3}
c) 64000 6.4×10^4	d) 450000 4.5×10^5

6) Write the following numbers in standard form.

a) $4.89 * 10^5$ 489000	b) $3.12 * 10^{-3}$ .00312
c) $2.25 * 10^3$ 2250	d) $5.78 * 10^{-8}$ .0000000578

7) Multiply/divide the following numbers. Write your answer in scientific notation.

a) $(8.56 * 10^{-5})(3.29 * 10^{29})$ 2.816×10^{25}	b) $\frac{3.69*10^9}{6.98*10^{-3}}$ 5.287×10^{11}
c) $(2.7 * 10^3)^3$ 1.968×10^{10}	d) $\frac{7.5*10^{19}}{1.28*10^{-24}}$ 5.859×10^{43}

8) Write the prime factorization of each of the following numbers.

a) 145 $5 \cdot 29$	b) 63 $3^2 \cdot 7$
c) 84 $2^2 \cdot 3 \cdot 7$	d) 90 $2 \cdot 3^2 \cdot 5$

9) Divide the following expressions. Write your answers with positive exponents.

a) $\frac{3^9}{3^{12}}$ $\frac{1}{3^3}$	b) $\frac{26x^{-5}}{13x^{-13}}$ $2x^8$
c) $\frac{x^{10}y^2}{x^8y^6}$ $\frac{x^2}{y^4}$	d) $\frac{x^{-3}y}{x^{10}y^{-8}}$ $\frac{y^9}{x^{13}}$

10) Simplify the the following expressions. Write your answers with positive exponents.

a) $(x^{-2}y^4)^5$ y^{20}/x^{10}	b) $(2x^{-4}y^7)^4$ $\frac{2^4y^{28}}{x^{16}}$
c) $(x^6y^{-8})^{-5}$ y^{40}/x^{30}	d) $(3x^2y^{-10})^{-3}$ $\frac{y^{30}}{3^3x^6}$

Name:Dylan 11/28/2017 PreAlgebra – Test 4

1) Fill in the blanks:

a) Quotient Rule: When dividing with the same _____, you keep the base and _____ the _____.

b) Product Rule: When multiplying with the same _____, you keep the base and _____ the _____.

c) "Power to a power, you _____ the exponents"

2)

a) If you do not see an exponent on the base, then you assume it is _____ (Think $x^?$)

b) Anything with an exponent of zero is _____. (Think x^0)

c) If something has a _____ exponent, then you have to reciprocate it.

Name: key 2/21/2017 PreAlgebra – Test 4

1) Fill in the blanks:
a) Quotient Rule: When dividing with the same base, you keep the base and subtract the exponents.

b) Product Rule: When multiplying with the same base, you keep the base and add the exponents

c) "Power to a power, you multiply the exponents"

2)
a) If you do not see an exponent on the base, then you assume it is 1 (Think $x^?$)

b) Anything with an exponent of zero is 1. (Think x^0)

c) If something has a negative exponent, then you have to reciprocate it.

3) Fill in the blanks for the questions you should ask/answer yourself when converting units.
1) Where are you going?
2) Where are you starting?
3) How are you going to get there?
a) Which one is bigger? (*always gets a 1)
b) The smaller one gets the # on the line.

4) Simplify the following and write your answer in scientific notation.
a) $\frac{7.65*10^{-2}}{5.67*10^{4}}$ 1.349×10^{-6}

b) $(42.3)*10^{4})(6.23*10^{-14})$ $263.5 \times 10^{-10} = 2.635 \times 10^{-8}$

c) $(10^{5}*10^{4})^{-2}$ 10^{-18}

d) $(7.54*10^{-2})(3.45*10^{9})$ $2601 \times 10^{7} = 2.601 \times 10^{8}$

5) Give the name of the following units.
a) dJ decijoule

b) km kilometer

c) mg milligram

d) hL hektoliter

6) Give the abbreviation of the following units.
a) picowatt pW

b) centimeter cm

c) microsecond μs

d) millijoule mJ

7) One Step Conversions

a) 0.0723 kJ to J

$7.23 \times 10^{-2}\ kJ \left| \frac{10^3\ J}{1\ kJ} \right. = 7.23 \times 10\ J$

b) 445 s to ms

$4.45 \times 10^{2}\ s \left| \frac{10^3\ ms}{1\ s} \right. = 4.45 \times 10^{5}\ ms$

c) 15.2 μg to g

$1.52 \times 10\ \mu g \left| \frac{1\ g}{10^6\ \mu g} \right. = 1.52 \times 10^{-5}\ g$

d) 9368 m to Mm

$9.368 \times 10^{3}\ m \left| \frac{1\ Mm}{10^6\ m} \right. = 9.368 \times 10^{-3}\ Mm$

8) Two Step Conversions

a) 936800 dm to Mm

$9.368 \times 10^{5}\ dm \left| \frac{1\ m}{10\ dm} \right| \frac{1\ Mm}{10^6\ m} = 9.368 \times 10^{-2}\ Mm$

b) 587.1 Mg to μg

$5.871 \times 10^{2}\ Mg \left| \frac{10^6\ g}{1\ Mg} \right| \frac{10^6\ \mu g}{1\ g} = 5.871 \times 10^{14}\ \mu g$

c) 319000 cL to ML

$3.19 \times 10^{5}\ cL \left| \frac{1\ L}{10^2\ cL} \right| \frac{1\ ML}{10^6\ L} = 3.19 \times 10^{-3}\ ML$

d) 0.4744 nJ to μJ

$4.744 \times 10^{-1}\ nJ \left| \frac{1\ J}{10^9\ nJ} \right| \frac{10^6\ \mu J}{1\ J} = 4.744 \times 10^{-4}\ \mu J$

9) Basic Conversions

a) 28.68 c to gal

$28.68\ c \left| \frac{1\ pt}{2\ c} \right| \frac{1\ qt}{2\ pt} \left| \frac{1\ gal}{4\ qt} \right. = 1.793\ gal$

b) 263500 weeks to days

$263500\ weeks \left| \frac{7\ days}{1\ week} \right. = 1.845 \times 10^{6}\ days$

c) 0.004279 g to lbs

$0.004279\ g \left| \frac{1\ oz}{28.3\ g} \right| \frac{1\ lb}{16\ oz} = 9.45 \times 10^{-6}\ lb$

d) 0.3694 m to ft

$0.3694\ m \left| \frac{10^2\ cm}{1\ m} \right| \frac{1\ in}{2.54\ cm} \left| \frac{1\ ft}{12\ in} \right. = 1.212\ ft$

10) Write the following in scientific notation.

a) 1234 1.234×10^{3}

b) 9876000 9.876×10^{6}

c) 0.06543 6.543×10^{-2}

d) 0.003985 3.985×10^{-3}

11) Write the following in standard form:

a) $3.54 * 10^{-5}$ 0.0000354

b) $5.78 * 10^{3}$ 5780

c) $6.89 * 10^{5}$ 689000

d) $9.72 * 10^{-3}$ .00972

10) Write the following in scientific notation.

a) 1234	b) 9876000
c) 0.06543	d) 0.003985

11) Write the following in standard form:

a) $3.54 * 10^{-5}$	b) $5.78 * 10^{3}$
c) $6.89 * 10^{5}$	d) $9.72 * 10^{-3}$

Name: Dylan 11/3/2017 PreAlgebra – Quiz 9

1) Write the following numbers in scientific notation.

a) 0.00462 4.62×10^{-3} b) 64000 6.4×10^{4}

2) Multiply/divide the following numbers. Write your answer in scientific notation.

a) $(8.56 * 10^{-5})(3.29 * 10^{29})$ 2.816×10^{25} b) $\frac{3.69*10^{9}}{6.98*10^{-3}}$ 5.287×10^{11}

3) Multiply/divide the following expressions.

a) $2x^{-9} * 6x^{-14}$ $\frac{12}{x^{23}}$ b) $4x^{9}y^{3} * 3x^{2}$ $12x^{11}y^{3}$

4) Write the following numbers in standard form.

a) $4.89 * 10^{5}$ 489000 b) $3.12 * 10^{-3}$ .00312

5) Multiply/divide the following expressions.

a) $\frac{15x^{9}y^{5}}{20x^{4}y^{9}}$ $\frac{3x^{5}}{4y^{4}}$ b) $\frac{8x^{-6}y^{-5}}{4x^{-7}y^{-3}}$ $\frac{2x}{y^{2}}$

Name: Dylan 11/17/2017 PreAlgebra – Quiz 10

1) Give the name or abbreviation of the following units.

a) mg milligram	b) hL hectoliter
c) picowatt pW	d) centimeter cm

2) Two Step Conversions

a) 936800 dm to Mm $\times 10^{5}$ $\frac{1\ m}{10^{1}\ dm} \cdot \frac{1\ Mm}{10^{6}\ m}$ $9.368 \times 10^{-2}\ Mm$

b) 587.1 Mg to µg $\times 10^{2}$ $\frac{10^{6}\ g}{1\ Mg} \cdot \frac{10^{6}\ \mu g}{1\ g}$ $5.871 \times 10^{14}\ \mu g$

3) Basic Conversions

a) 28.68 c to gal $\frac{1\text{ pt}}{2\text{ c}} \cdot \frac{1\text{ qt}}{2\text{ pt}} \cdot \frac{1\text{ gal}}{4\text{ qt}} = 1.793$ gal.

b) 263500 weeks to days $\frac{7}{1\text{ weeks}} = 1.845 \times 10^6$ days.

4) Multiply/divide the following numbers. Write your answer in scientific notation.

a) $(7.54 * 10^{-2})(3.45 * 10^{9})$ 2.601×10^8

b) $\frac{7.65*10^{-2}}{5.67*10^{4}}$ 1.349×10^{-6}

5) One Step Conversions

a) 15.2 μg to g $\frac{1\text{ g}}{10^6\ \mu\text{g}}$ 1.52×10^{-5}

b) 9368 m to Mm $\frac{\times 10^3}{10^6\text{ m}} \cdot \frac{1}{1}$ = 9.368×10^{-3} Mm

Name: Dylan 12/1/2017 PreAlgebra – Quiz 11

1) Write the percent as a fraction.

a) 9% $\frac{9}{100}$

b) 88% $\frac{88}{100}$ $\frac{22}{25}$

2) Write the fraction as a percent.

a) $\frac{49}{50}$ 98%

b) $\frac{3}{4}$ 75%

3) Find the percent of the number.

a) 60% of 145 87
.6 x 145

b) 90% of 120
.9 x 120 = 108

Name: 12/8/2017 PreAlgebra – Quiz 12

1) Write the following numbers as a percent.

a) 7.4 740%

b) .77 77%

c) 61.5 6150%

d) .0084 .84%

2) Answer the following questions about percentages. Remember the three different types of percent questions we talked about.

a) What is 20% of 90? .2 · 90 = 18

b) 20 is what percent of 90? 20 ÷ 90 = 22.2%

c) 60 is 50% of what number? 60 ÷ .5 = 120

3) Write the following fractions as a percent. Round to the nearest tenth.

a) ¼ 25%

b) $\frac{6}{9}$ 66.7%

c) $\frac{8}{10}$ 80%

d) $\frac{2}{7}$ 28.6%