Name: __key__

8th Grade – Test 1

9/23/2016

① 1) The letter in an equation is always the __variable__ .

2) For the following expression: 3 * 3

③ a) Write it using exponents 3^2

b) How do you say it with an exponent? 3 _squared_

c) What is the second way of saying it? 3 to the 2nd _power._

3) Write the following in words.

a) $5x - 3$ b) $2/x$

⑧   5 times x minus 3   2 divided by x

c) $2 * (x - 7)$ d) $3 - 9 \div x$

2 times the difference of x and 7   3 minus 9 divided by x.

4) What is the order of operations?

③ Parentheses, exponents, multiply, divide, Add, subtract.

5) Evaluate the expression: $[3^2 - 2^3] * 5 - 4 * 8$

③ $[9 - 8] \cdot 5 - 32$

         $5 - 32 = -27.$

6) Evaluate the following absolute values:

④ a) $|-4|$ 4   b) $|-1| + 9$ 6

c) $|2|$ 2   d) $|-9| - 6$ 3

7) Find the difference of the following expressions:

④ a) $7 - 12$ -5   b) $-3 + (+9)$ 6

c) $16 + (+14)$ 30   d) $-5 - 3$ -8

8) Find the sum of the following expressions:

④ a) $-27 + (-16)$ -43   b) $-106 + 10$ -96

c) $-9 + 12 + (-4)$ d) $54 + (-28) + 23$

            -1   49.

9) Evaluate the following expressions for $a = 10$ and $b = -5$.

(8) a) $\overset{w}{a} + (-23)$ -13

c) $b + 30$ 25

b) $-\overset{-5}{b} - \overset{10}{a}$ -5

d) $\overset{10}{a} - \overset{-5}{b}$ 15

10) Find the change in temperature, elevation, and speed.

(8) a) From $-20°C$ to $50°C$

$70°C$

b) From $120ft$ to $1200ft$

$1080ft$

c) From $10°F$ to $-11°F$

$-21°F$

d) From 20mph to 65mph
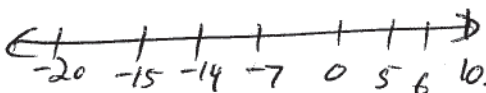
$45mph.$

11) Put the following numbers on a **number line**.

$-14, 10, -7, 5, 6, -20, 0, -15$

(3)

12) State the opposite of the number.

(4) a) -94 94

c) 14 -14

b) 12 -12

d) -21 21

13) Evaluate the expression when $a = -5$ and $b = 7$

(8) a) $\dfrac{a+11}{6}$ $\dfrac{6}{6} = 1$
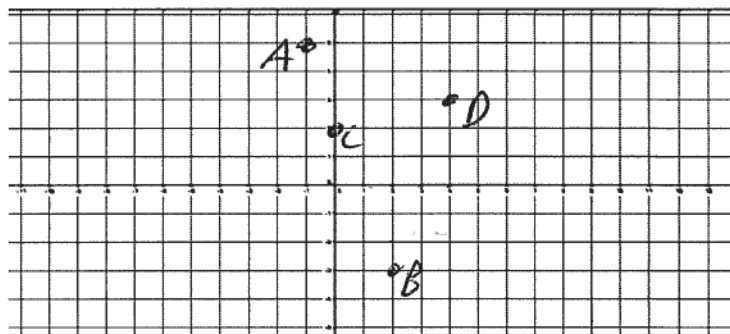
b) $a[(b - a)^2 + 5]$ -745

c) $\dfrac{20a}{13+b}$ -5

d) $10a - ab$ -15

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

(4) $A(-1,5)\ B(2,-3)\ C(0,2)\ D(4,3)$

15) What quadrant is each letter in:

(4) a) II
b) IV
c) $B/w\ I\ \ell\ II$
d) I

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:
$15x, -7, 20x$	10 $15, 20$	-7	$15x, 20x$	$35x - 7$

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

(8)

a) $x - 5 = 2$
   $+5$ $+5$
   $\boxed{x = 7}$

b) $x + 8 - 9 = 20$
   $x - 1 = 20$
   $+1$ $+1$
   $\boxed{x = 21}$

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

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

7) You have a rectangle with a length of 15 ft and width of x ft.
a) Draw a picture to represent this.
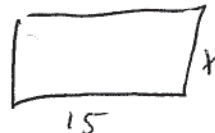
b) If you need the area to be 45 ft^2, what does x have to be?

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

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?
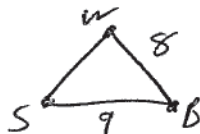
$$\begin{array}{r} 24 \\ -17 \\ \hline \boxed{7\,yds} \end{array}$$

9) Evaluate the following expressions for the given values.
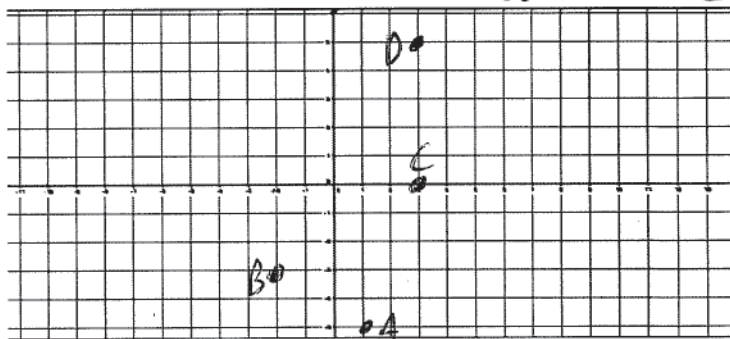a) $6x + 7y - 2x$; use $x = 1$ and $y = -3$ b) $-x + 4(y - 3x)$; use $x = 20$ and $y = 10$

$6(1) + 7(-3) - 2(1) = 6 - 21 - 2 = \boxed{-17}$

$-20 + 4(10 - 3\cdot(20)) = -20 - 20$
$(10 - 60)$
-50
$= \boxed{-220}$

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 e 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
8th Grade – Test 3
11/22/2016

1) What are all the steps to solving any algebra problem?
a) Get rid of parentheses.
b) Combine like terms.
c) Move variable to one side.
d) PEMDAS

2) Solve the following equations.

a) $3x + 8 = 12$
$-8 \quad -8$
$\frac{3x}{3} = \frac{4}{3}$
$\boxed{x = 4/3}$

b) $-\frac{x}{2} - 15 = 10$
$+15 \quad +15$
$-2 \cdot -\frac{x}{2} = 25 \cdot -2$
$\boxed{x = -50}$

c) $\frac{x}{4} + 30 = 25$
$-30 \quad -30$
$4 \cdot \frac{x}{4} = -5 \cdot 4$
$\boxed{x = -20}$

d) $4x - 20 = 16$
$+20 \quad +20$
$\frac{4x}{4} = \frac{36}{4}$
$\boxed{x = 9}$

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

a) $6(x + 7) - 4 = 14$
$6x + 42 - 4 = 14$
$6x + 38 = 14$
$-38 \quad -38$
$\frac{6x}{6} = \frac{-24}{6}$ $\boxed{x = -4}$

b) $5 \cdot \frac{x-6}{5} = 16 \cdot 5$
$x - 6 = 80$
$+6 \quad +6$
$x = 86$

c) $4(x - 4x) = 8(45 + 10)$
$4x - 16x = 360 + 80$
$\frac{-12x}{-12} = \frac{440}{-12}$
$x = 36.7$

d) $-2(x + 7) = -30$
$-2x - 14 = -30$
$+14 \quad +14$
$\frac{-2x}{-2} = \frac{-16}{-2}$
$\boxed{x = 8}$
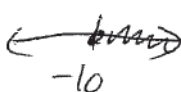
4) Write an inequality for the following graphs.

a)
10
$X \leq 10$

b)
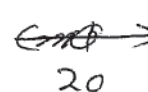-7
$X > -7$
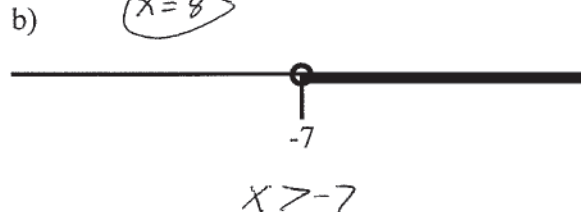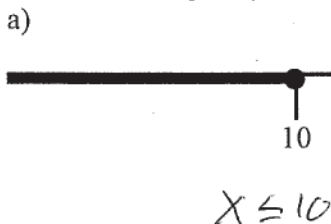
5)
a) Which side should the variable always be on to properly graph an inequality? left.
b) When you multiply or divide by a ___negative___, you have to ___switch___ the inequality sign.

6) Graph the following inequalities.
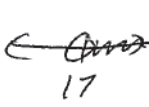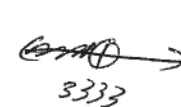
③ a) $x \geq -10$

b) $20 > x$ $X < 20$
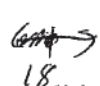
-10

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 time 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!
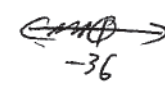
⑧ a) $x - 5 > 12$
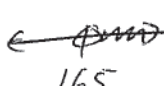
$+5 \quad +5$

$X > 17$

17

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

3333

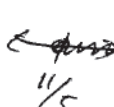c) $\frac{6x}{6} \leq \frac{108}{6}$

$X \leq 18$

18

d) $x + 9 \geq 6$

$-9 \quad -9$

$X \geq -3$

-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.
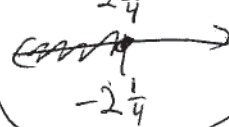
⑫ a) $-3x - 4 \leq 19$ $X \geq -\frac{23}{3}$

$+4 \quad +4$

$-3x \leq 23$

$-23/3$

b) $\frac{x}{3} < -12 \cdot 3$ $X < -36$

-36

c) $\frac{x}{5} - 8 > 25$

$+8 \quad +8$

$5 \cdot \frac{x}{5} > 33 \cdot 5$

$X > 165$

165

d) $5x - 11 \geq 0$

$+11 \quad +11$

$\frac{5x}{5} \geq \frac{11}{5}$ $X \geq \frac{11}{5}$
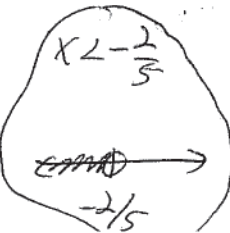
$11/5$

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) $-3(4m + 21) \geq -36$

$-12m + -63 \geq -36$

$+63 \quad +63$

$-12m \geq 27$

$\frac{-12m}{-12} \quad \frac{27}{-12}$

$m \leq -2.25$

$-2\frac{1}{4}$

$-2\frac{1}{4}$

b) $5(x + 2) + 1 < 7 - 5x$

$5x + 10 + 1 < 7 - 5x$

$+5x \qquad +5x$

$10x + 11 < 7$

$-11 \quad -11$

$\frac{10x}{10} < \frac{-4}{10}$

$X < -\frac{2}{5}$

$-2/5$

c) $-1 - 5x > -3x - 2x$

$-1 - 5x > -5x$

$+5x \quad +5x$

$-1 > 0$

no soln

d) $-(6x + 6) - 5 \leq 1 - 6x$

$-6x - 6 - 5 \leq 1 - 6x$

$+6x \qquad +6x$

$-11 \leq 1$ All Reals.

Name: __Key__

9/2/2016

8th Grade Quiz

1) Evaluate the expression: $2 * 5 - 4 \div 2$

   10   2

   ⑧

2) Evaluate the variable expression for $x = 2$.

$$x^2 + 5 - 4x$$

   4 + 5 - 8

   ①

3) The letter in an equation is always the __variable__.

4) Simplify the following expression: $[3^2 - 2^2] * 5 - 4 * 8$

   9   4

      5

   25 - 32 = ⑦

5) For the following expression: $2 * 2 * 2$

a) Write it using exponents 2^3

b) How do you say it with an exponent? 2 cubed

c) What is the second way of saying it? 2 to the third power.

6) Give two different ways of saying the expression: $x + 3$

a) X plus 3

b) 3 added to x

Bonus: Who am I, who am I married to, what do I do, and where do I live?

   nobody   no one   nothing   no where.   (+1)

   (+.5) for 2.

Name: Key

9/8/2016

8th Grade Quiz

1) Give two different ways of saying the expression: $3 * x$

a) 3 times   x

b) 3 multiplied by x

2) Evaluate the expression: $(3+2)^2 - 6 * 3$

5

$25 - 18 = \boxed{7}$

3) Simplify the following expression: $(2 + 8) \div 5 + 7 * 9$

10 63

$2 + 63 = 65$

4) The letter in an equation is always the ___variable___.

5) Simplify the following expression: $[3^2 - 2^2] * 9 - 3 * 8$

$9 - 4$

$5 \cdot 9 - 24$

$45 - 24 = \boxed{21}$

6) For the following expression: $3 * 3$

a) Write it using exponents 3^2

b) How do you say it with an exponent? 3 squared

c) What is the second way of saying it? 3 to the second power.

Name: key

9/16/2016

8th Grade Quiz

1) Give two different ways of saying the expression: $3 - x$

a) 3 minus x

b) 3 take away x

2)

a) Evaluate: $|-2| + 3$ 5

b) What is the opposite of negative five?   5

c) Use either a less than or greater than sign to show which number is bigger: $-2 \leq 7$

3) Evaluate the variable expression for $x = 3$.

$$2x^2 - 7x + 14$$

$$18 - 21 + 14$$

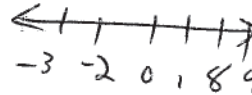$$-3 + 14 \quad \boxed{11}$$

4) Simplify the following expression: $(4 + 8) \div 3 - 7 * 9$

$$12 \div 3 - 63$$

$$4 - 63$$

$$-59$$

5) Put the following numbers in order on a number line: $1, -2, 0, 8, 9, -3$

$-3 \quad -2 \quad 0 \quad 1 \quad 8 \quad 9$

6) Simplify the following expression: $[2^2 - 3^2] * 9 - 5 * 8$

$$[4 - 9] \cdot 9 - 40$$

$$-5$$

$$-45 - 40 = -85 \quad \boxed{-85}$$

Name: _Key_

9/30/2016

8th Grade Quiz

1) What property is shown for each of the following equations?

a) $a + b = b + a$ Commutative prop of (+)

b) $(ab)x = a(bx)$ associative prop of (×)

c) $x + 0 = x$ identity prop of (+).

2) Use the distributive property to simplify the following:

a) $6(x + 2)$ b) $-2(x - 3)$

   $6x + 12$ $-2x + 6$.

3) Evaluate the following expressions for the given values.
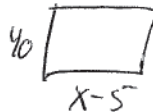
a) $6x + 7y - 2x$; use $x = -1$ and $y = 3$ b) $-2x + 7y - 2x$; use $x = -1$ and $y = 3$

   $-6 + 21 + 2$ $2 + 21 + 2$

   $\boxed{17}$ $\boxed{25}$

4) The area of a rectangle is $A = l * w$. What is the area of a rectangle whose sides are 40 and $x - 5$?

40 [   ] $40x - 200$.
   $x - 5$

5) Do the following unit conversions

a) 4miles to feet   b) 360sec to minutes

   × 5,280 $\boxed{21,120 ft.}$ 60 $\boxed{6 min}$

6) What quadrant is each letter in:

$A(1, -5)$ $B(-2, -3)$

   IV   III

$C(2, 0)$ b/w I & IV $D(-4, 3)$

                                              II

Name: **Key**

10/7/2016

8th Grade Quiz

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

Terms:	Coefficients:	Constant Terms:	Like Terms:	Simplify the expression:
$15x, 7, -20x$	$15, -20$	7	$15x, -20x$	$-5x + 7$

2) Use the distributive property to simplify the following:

a) $6(x + 2)$

$6x + 12$

b) $-2(x - 3)$

$-2x + 6$

3) Evaluate the following expressions for the given values.

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

$-6 + 21 + 2$

$(+17)$

b) $-2x + 7y - 2x$; use $x = -1$ and $y = 3$

$2 + 21 + 2$

25

4) Simplify the following expressions by combining like terms.

a) $5x + 4y + 7y - 3x$ $2x + 11y$

b) $4 + 2x - 3$ $2x + 1$

c) $3(x - 2) - 7x$ $3x - 6 - 7x$ $-4x - 6$

5) What are the two things required to have like terms? The same __letter__ and __exponent__ .

6) What quadrant is each letter in:

$A(1, -5)$ IV

$B(-2, -3)$ III

$C(2, 0)$ b/w I & IV

$D(-4, 3)$ II .

Name: _Key_
10/14/2016
8th Grade Quiz

1) Solve the following algebra problems. Make sure you show all your work!

a) $x + 5 = 12$
$\quad -5 \quad | \quad -5$
$\quad \overline{X = 7}$

b) $x - 6 = -10$
$\quad +6 \quad | \quad +6$
$\quad \overline{X = -4}$

2) Use the distributive property to simplify the following:

a) $9(2x + 4)$
$18X + 36$

b) $-4(x - 8)$
$-4X + 32.$

3) Simplify the following expressions:

a) $9x - 5x - 12x$
$-8X$

b) $-2(2x - 3) + 4x$
$-4X + 6 + 4x = \boxed{6}$

4) Find the difference of the following expressions:

a) $-5 - 11$ $\quad -16$

b) $2 + (+12)$ $\quad 14$

c) $16 - 16$ $\quad 0$

d) $-75 + (+5)$ $\quad -70$

5) 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.__ .

6) Solve the following algebra problems. Make sure you show all your work!

a) $-5x = 35$
$\quad \dfrac{-5}{-5} \quad | \quad \dfrac{}{-5}$
$\quad \boxed{X = -7}$

b) $\dfrac{x}{-5} = -35 \cdot -5$
$\quad \boxed{X = ^+175}$

Name: **Key**

10/28/2016

8th Grade Quiz

NO CALCULATOR!!

1) Multiply the following decimals.

a) $(7.4)(1.5)$ (11.10)

$$\begin{array}{r} \overset{2}{7}4 \\ \underline{1\,5} \\ 370 \\ \underline{740} \\ 1110 \end{array}$$

b) $(.25)(.37)$ (.0925)

$$\begin{array}{r} \overset{1}{2}5 \\ \underline{37} \\ 175 \\ \underline{75} \\ .0925 \end{array}$$

2) Use the distributive property to simplify the following:

a) $x - 4.8 = 10.6$

$\underline{+4.8 \quad | \quad 4.8}$

$x = 15.4$

b) $\dfrac{1.2x}{1.2} = \dfrac{-3.6}{1.2}$

$x = -3$

$$12\overline{\smash{\big)}36} \quad \overset{3}{} \\ \underline{-36} \\ 0$$

3) Simplify the following expressions:

a) $(2.835) + (-.07)$

$- \quad .070$

2.765

b) $-3.64 - 1.3$

$\begin{array}{r} 3.64 \\ 1.30 \\ -4.94 \end{array}$

4) Find the difference of the following expressions:

a) $-8 + (-11) = 3$

b) $20 - 18 \quad 2$

c) $-16 - 16 \quad -32$

d) $75 - 90 \quad -15$

5) Solve the following equations.

a) $2x + 7 = 13$

$\underline{-7 \quad | \quad -7}$

$\dfrac{2x}{} = 6$

$x = 3$

b) $\dfrac{x}{-3} - 20 = 10$

$\underline{+20 \quad | \quad +20}$

$\dfrac{x}{-3} = 30$

$x = -90$

6) Solve the following algebra problems. Make sure you show all your work!

a) $-5x = 35$

$\dfrac{}{-5} \quad | \quad \dfrac{}{-5}$

$x = -7$

b) $\dfrac{x}{-5} = -35 \cdot -5$

-5

$x = 175$

Name: _Key._

11/4/2016

8th Grade Quiz

$$\begin{array}{r}3\\36\\ \underline{5}\\180\end{array}$$

1) Solve the following algebra problems.

a) $12x + 7 \neq 31$

$$\begin{array}{r}-7 \quad | -7 \\ \hline 12x \neq 24\end{array} \quad \boxed{X = 2}$$

b) $12 \neq \frac{x}{36} + 17$

$$\begin{array}{r}-17 \qquad -17 \\ \hline 36 \cdot -5 \neq \frac{x}{36} \cdot 36\end{array} \quad \boxed{X = -180}$$

2) Solve the following algebra problems.

a) $-5(2x + 1) = 25$

$$\begin{array}{r}-10x - 5 \neq 25 \\ +5 \quad | +5 \\ \hline -10x \neq 30 \\ \overline{-10} \quad \overline{-10}\end{array} \quad \boxed{X = -3}$$

b) $42 \neq 18x + 4(x + 5)$

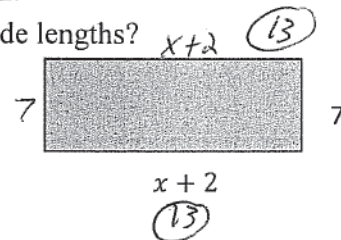$$\begin{array}{r}42 \neq 18x + 4x + 20 \\ 42 \neq 22x + 20 \\ -20 \qquad -20 \\ \hline 22 \neq 22x\end{array} \qquad X = 1$$

3) The following rectangle has a perimeter of 40 *in.* What are the side lengths?

$$\begin{array}{r}2x + 18 \neq 40 \\ -18 \quad | -18 \\ \hline 2x \neq 22 \\ \overline{2} \quad \overline{2}\end{array} \qquad X = 11$$
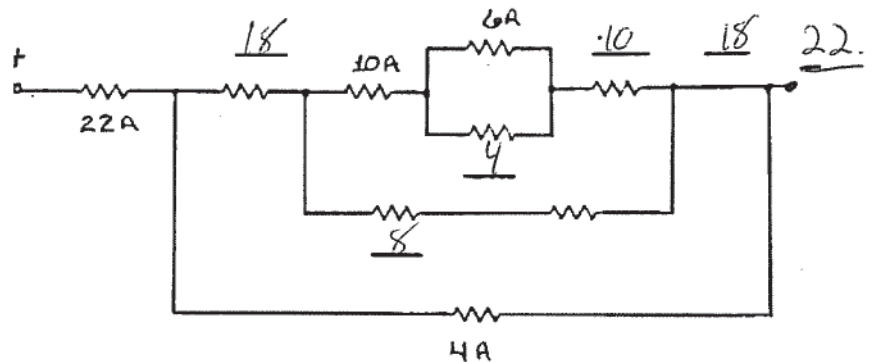
$x + 2$ ⑬

7 [rectangle] 7

$x + 2$

⑬

4) Fill in the missing blanks for solving any algebra problem.

1) Get rid of _parentheses._
2) Combine _like terms._
3) Move _variable_ to one side
4) _PEMDAS_

5) Fill in the missing parts for the following circuit.

Name: Key

11/10/2016

8th Grade Quiz

$$\begin{array}{r} 54 \\ 12 \\ \hline 108 \\ 54 \\ \hline 648 \end{array}$$

1) Solve the following equations.

a) $12x - 7 = 17$

$$\frac{+7 \quad | \quad +7}{12x = 24}$$
$$\frac{}{12 \quad 12}$$

$X = 2$

b) $\frac{x}{12} - 25 = 29$

$$\frac{+25 \quad +25}{12 \cdot \frac{x}{12} = 54 \cdot 12}$$

$X = 648$

2) Solve the following algebra problems.

a) $-5(2x + 1) = 25$

$$-10x - 5 = 25$$
$$\frac{+5 \quad +5}{-10x = 30}$$

$X = -3$

b) $42 = 18x + 4(x + 5)$

$$42 = 18x + 4x + 20$$
$$\frac{-20 \qquad\qquad -20}{22 = 22x}$$

$X = 1$

3) Sect 3.3 HW questions. Solve the following equations. Show all your work!

a) $3x - 7 = 8 + 6(x + 2)$

$$3x - 7 = 8 + 6x + 12$$
$$\frac{-6x \qquad\qquad -6x}{-3x - 7 = 20}$$
$$\frac{+7 \quad +7}{}$$
$$\frac{-3x = 27}{-3 \quad -3}$$

$X = -9$

b) "Twelve less than -9 times a number is equal to 8 minus 4 times the number." (Hint: #26)

$$-9 \cdot x - 12 = 8 - 4x$$
$$\frac{+4x \qquad\qquad +4x}{-5x - 12 = 8}$$
$$\frac{+12 \quad +12}{-5x = 20}$$
$$\frac{}{-5 \quad -5}$$

$X = -4$

4) What are the missing steps to solving all algebra problems?

a) Get rid of parentheses

b) Combine like terms

c) Move variable to one side

d) PEMDAS ←

5) Sect 3.3 HW questions. Solve the following equations. Show all your work!

a) $14x - 93 = 49 - 57x$

$$\frac{+57x \qquad\qquad +57x}{71x \quad -93 = 49}$$
$$\frac{+93 \quad +93}{}$$
$$\frac{71x = 142}{71 \qquad 71}$$

$X = 2$

b) $8x = 2(4x + 2)$

$$8x = 8x + 4$$
$$\frac{-8x \quad -8x}{0 = 4}$$

no soln

Name: Key
11/18/2016
8th Grade Quiz

1) Write the following inequalities in words.
  a) $x - 4 > 7$ | b) $8x \le 20$

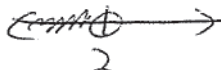 x minus 4 greater than 7.   8 times x is less than or equal to 20.

2) Graph the following inequalities.
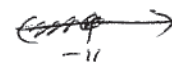 a) $x > 5$ b) $x < 2$ c) $-11 \ge x$ $x \le -11$
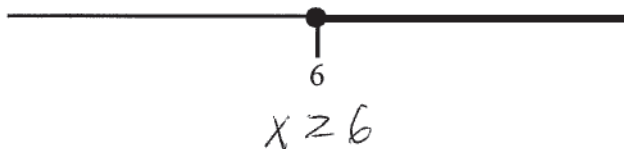
3) Write an inequality for the following graphs.
  a) | b)
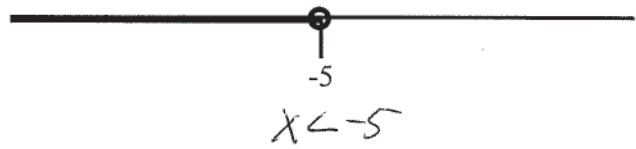
  6   -5
  $x \ge 6$ $x < -5$

4)
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.
c)
          1) Get rid of __parentheses__.
          2) Combine __like__ __terms__.
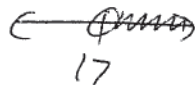   3) Move __variable__ to one side
          4) __PEMDAS__

5) Solve the following inequalities for the given variable and graph your answers. Be sure to show all your work!
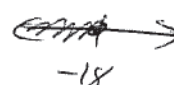 a) $x - 5 > 12$ | b) $6x \le -108$
      $+5 \quad +5$ $\dfrac{6x}{6} \quad \dfrac{-108}{6}$
      $x > 17$ $x \le -18$
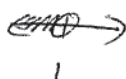   17   -18

6) Solve the following inequalities for the given variable and graph your answers. Be sure to show all your work!
  a)) $6(5 - 2x) > 5x + 13$ | b) $\dfrac{x}{-12} + 4 \ge 22$

      $30 - 12x > 5x + 17.$ $\quad\quad -4 \quad -4$
      $-13 + 12x \quad +12x \; -13$
      _____ $-12 \cdot \dfrac{x}{-12} \ge 18 \cdot -12$

          $\dfrac{17}{17} > \dfrac{17x}{17}$ $x \le -216$

      $x < 1$ -216
           1

                                         18
                                         12
                                      ____
                                       136
                                        18
                                      ____
                                       216
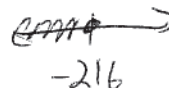
Name: Key

12/2/2016

8th Grade Quiz

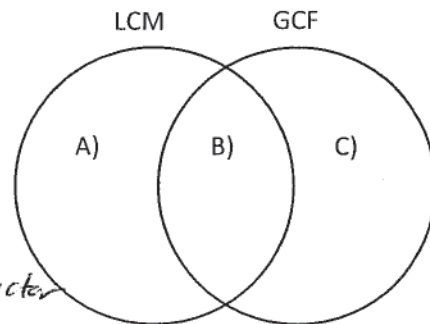1) Fill in the blanks for the LCM and GCF chart:

A) Keep _all_ the bases and the _highest_ exponents.

B) _factor_ all the terms and numbers.

C) Keep only the common _bases_ and the _lowest_ exponents.

d) What does GCF stand for? greatest common factor

e) What does LCM stand for? least common multiple.

LCM   GCF

A)   B)   C)

2) Find the GCF of the following numbers.

a) 32, 28

$32 = 2^5$
$28 = 2^2 \cdot 7$
$2^2 = \boxed{4}$

b) 45, 50

$45 = 5 \cdot 3^2$
$50 = 2 \cdot 5^2$
$\boxed{5}$

3) Find the GCF of the following monomials.

a) $14x^3, 42x^4$

$14x^3 = 2 \cdot 7 \cdot x^3$ $\boxed{14x^3}$
$42x^4 = 2 \cdot 3 \cdot 7 \, x^4$

b) $8x^2, 11$

$8x^2 = 2^3 x^2 \cdot 1$
$11 \quad = 11 \quad \cdot 1$
$\boxed{1}$

4) Write all the factors of the following numbers.

a) 12   1, 2, 3, 4, 6, 12

b) 71   1, 71

5) Write the prime factorization of each of the following.

a) 63 $3^2 \cdot 7$

b) 120 $= 2^3 \cdot 3 \cdot 5$

```
      120
     /   \
    12    10
   / \   / \
  4  3  2  5
 / \
2 2
```
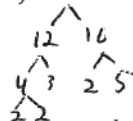
6) If I gave you 24 nuts and 18 beads, what is the greatest number of groups you could make that would have the same number of nuts in each group and the same number of beads in each group?   6 groups

b) How many nuts and how many beads would be in each group?

4 nuts and 3 beads.

$24 = 2^3 \cdot 3$
$18 = 2 \cdot 3^2$
$2 \cdot 3 = 6$