Name: Key Date: 12/17/2015 Algebra I – Semester Test

(4) 1) Solve the following equations for the given variable. Be sure to show all your work!

a) $x - 4 = 10$ $x = 14$

b) $7x = 21$ $x = 3$.

(2) 2) Identify the independent and dependent variables in the following scenarios.

a) As the wind increases, the fires spread faster.

b) Once the rains comes, the plants grow.

(6) 3) Solve the following equations for the given variable. Be sure to show all your work!! Leave your answers in the simplest fraction form.

a) $3x - 4 = 10$ $x = \frac{14}{3}$

b) $\frac{x}{3} + 7 = 21$ $x = 42$.

(2) 4) Give two different ways of saying the expression: $3x$

a) 3 times x

b) the product of 3 and x.

(6) 5) Solve the following equations for the given variable. Be sure to show all your work!!! Leave your answers in the simplest fraction form.

a) $-7(4m - 7) = -35$ -5 $m = \frac{1}{2}$

b) $2(6x + 9) = 6(2x + 3)$ All Reals.

(6) 6) Solve the following equations for the specified variable. Be sure to show all your work!!!! Leave your answers in the simplest fraction form.

a) Solve for l $P = 2w + 2l$ $l = \frac{P-2w}{2}$.

b) Solve for T $PV = nRT$ $T = \frac{PV}{nR}$.

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

(2) 8) Graph the following inequalities.

a) $4 > x$ 4

b) $x \geq 3$ 3

(2) 9) Identify what type of correlation you would expect for each of the following data sets.(positive, negative, or no correlation)

a) The number of mistakes you make and the size of your eraser N

b) The number of animals hibernating and the coldness outside P

c) The number of cats on a farm and the number of times Chris stubs his toes No.

(6) (4) 10) Solve the following inequalities for the given variable and graph your answers. Be sure to show all your work!

a) $x - 5 > 12$ $x > 17$ 17

b) $6x \leq 108$ $x \leq 18$ 18

(6) 11) 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.

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

b) $\frac{x}{5} - 8 > 25$ $x > 165$

(6) 12) 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) $-3(4m + 21) \geq -36$ $\leq$ 12 $m \leq \frac{9}{4}$

b) $-1 - 5x > -3x - 2x$ No soln.

(2) 13) Given the following function, graph it over the given domain. Use graph paper!!

a) $f(x) = 2x + 3$, D: $\{-1, 0, 2, 3\}$

(2) 14) Graph the following function. Use graph paper!!

a) $f(x) = |x| - 2$

(2) 15) Given the following information, find the first five terms of the sequence.

a) $a_1 = 3$ and $d = -2$ 3, 1, -1, -3, -5.

(6) 16) Solve the following inequality:

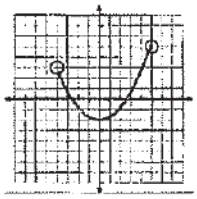
a) $4|x - 5| \geq -16$ All Reals.

b) $|x - 1| > 3$ $x > 4$ or $x < -2$.

17) For the following graphs, a) state the domain and range and b) is it a function?

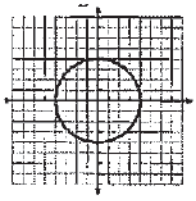
(6)

I)



D: $(-4, 5)$
R: $[-2, 5)$

II)



D: $[-4, 4]$
R: $[-4, 4]$

(3) 18) Given the following information, find the next four terms in the arithmetic sequence.

a) $-4, -7, -10, -13, \ldots$ $-16, -19, -22, -25$

b) $505, 512, 519, 526, \ldots$ 533, 540, 547, 554.

(2) 19) Find the given term for each arithmetic sequence. Show all your work!

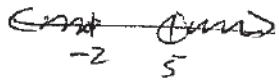
a) $5, 10, 15, 20, \ldots$; 17^{th} term $a_{17} = 5 + (16)(5) = 85$.

(3) 20) Solve the following inequality and graph your solutions: $-13 \geq x - 11$ OR $x + 4 > 9$

$+11$ $+11$

(1) 21) The letter in an equation is always the variable.

$x \leq -2$ or $x > 5$



Name: Key
Algebra I – Test 4
1/28/2015

1) There are two important points with a line. Their general forms are: $(0, y)$ and $(x, 0)$. What is the name of each of these points? Be specific.

y-inter

x-inter

(1)

2) Write each of the following in standard form. Then, identify A, B, and C for each of the lines given in the table.

(4)

	$4x + 2y = 8$	$-4y = 12x - 24$	$-10x = y + 6$	$4x - 8y - 2 = 0$
Standard Form	$4x + 2y = 8$	$-12x - 4y = -24$	$-10x - y = 6$	$4x - 8y = 2$
A	4	-12	-10	4
B	2	-4	-1	-8
C	8	-24	6	2

3) Fill in the blanks for the definitions of slope:

(3)

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\text{change in } y}{\text{change in } x} = \frac{y_2 - y_1}{x_2 - x_1}$$

4) Given the following pairs points, calculate the slope of the line that passes through them. Leave your answer in fraction form.

(8)

a) $(0, -6)$ & $(-5, -5)$ $\frac{1}{-5}$

b) $(3, 12)$ & $(5, 12)$ $\frac{0}{2} = 0$

c) $(-8, 6)$ & $(-5, -7)$ $\frac{-13}{3}$

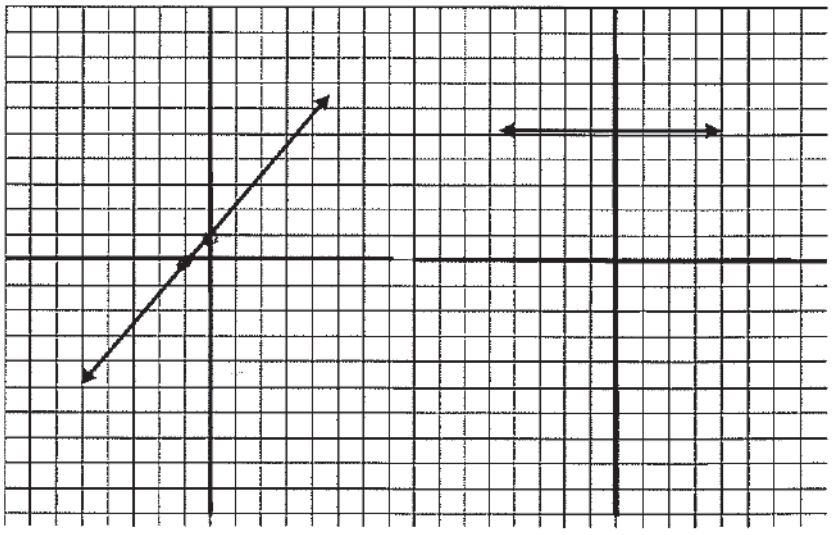
d) $(2, -10)$ & $(2, 20)$ $\frac{30}{0}$ = und.

5) Given the following lines, figure out what the slope of the lines are.

(2)

a) 1

b) 0



6) Use the First Differences to classify each table as linear or nonlinear.

(4)

a)

X	0	2	4	6
Y	-2	4	10	16

+2 +2 +6 +6 +6 Linear.

b)

X	3	5	7	9
Y	1	-1	-3	-5

+2 +2 +2 -2 -2 -2 Linear.

7) Write the following in SLOPE-Intercept form. Identify what the slope and y-intercept are.

(6)

a) $12x - 4y = 4$ $y = 3x - 1$ $m=3$, $b=-1$

b) $-2y = 24x + 12$ $y = -12x - 6$ $m=-12$, $b=-6$.

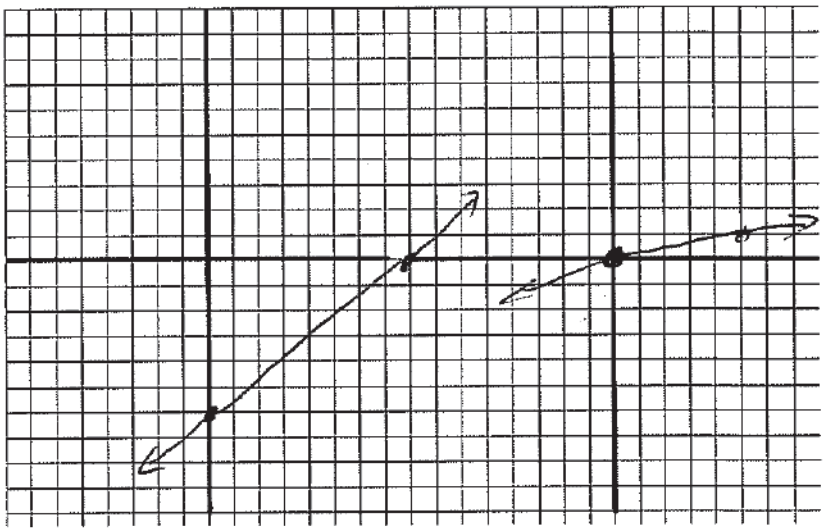
8) Graph the following lines on the given graphs.

(4)

a) $3x - 4y = 24$

x	y
0	-6
8	0

b) $x - 5y = 0$



9) The following points are part of a direct variation relationship. What is the formula for the line (y=kx) of each?

(8)

a) (5, 15) $y = 3x$

b) (−6, 8) $y = -\frac{4}{3}x$

c) (−3, −9) $y = 3x$

d) (7, 2) $y = \frac{2}{7}x$

10) If you calculate the slope between two points and get zero on bottom, what do you say the slope is?

(1) undefined.

11) If you calculate the slope between two points and get zero on top, what do you say the slope is?

(1) 0.

Name: Key
Algebra I C
Test 5
2/18/2016

1) Given the following equations, identify the slope and y-intercept.

A) $y = x - 5$ $m = 1$ $b = -5$

B) $y = \frac{1}{2}x + 6.3$ $m = \frac{1}{2}$ $b = 6.3$

C) $y = .25x + 2$ $m = .25$ $b = 2$.

2) Using the information from above, fill the following chart.

	Slope	Slope of a parallel line	Slope of a perpendicular line
A)	1	1	-1
B)	$\frac{1}{2}$	$\frac{1}{2}$	-2
C)	.25	.25	-4

3) Find the equation of a line in slope-intercept form that is parallel to the given line and passes the given point.

A) $y = \frac{1}{3}x + 5$ & $(3, 2)$ $m_1 = \frac{1}{3}$ $m_2 = \frac{1}{3}$

$y = \frac{1}{3}x + b \rightarrow 2 = \frac{1}{3}(3) + b \rightarrow b = 1 \rightarrow y = \frac{1}{3}x + 1$

B) $6x + 3y = -6$ & $(2, -1)$

$y = -2x - 2$ $m_1 = -2$ $m_2 = -2$.

$y = -2(x-2) + -1 = -2x + 4 + -1$

$y = -2x + 3$

4) Find the equation of a line in slope-intercept form that is perpendicular to the given line and passes the given point.

A) $y = -2x + 4$ & $(4, -1)$ $m_1 = -2$ $m_2 = +\frac{1}{2}$

$y = \frac{1}{2}(x-4) - 1 = \frac{1}{2}x - 2 - 1$

$y = \frac{1}{2}x - 3$

B) $-4x + 2y = 2$ & $(8, -3)$ $m_1 = 2$

$y = 2x + 1$ $m_2 = -\frac{1}{2}$

$y = -\frac{1}{2}(x-8) - 3 = -\frac{1}{2}x + 4 - 3$.

$y = -\frac{1}{2}x + 1$

5) Fill in the blanks for the definitions of slope:

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\text{change in } y}{\text{change in } x} = \frac{y_2 - y_1}{x_2 - x_1}$$

6) There are three different ways of writing the equation of a line. What are they called and what do they look like?

a) Slope-intercept $y = mx + b$.

b) Standard form $Ax + By = C$

c) point-slope $y = m(x - x_1) + y_1$

7) Given the following information, write the equation of the line. Use any form you want.

a) slope = -4, y-inter: $(0, 7)$ $y = -4x + 7$

b) $(-5, 0), (0, 10)$ $m = \frac{10-0}{0-(-5)} = 2$ $y = 2x + 10$

8) Given the following points, find the equation of the line that passes through each pair of points. You may leave your answer in any form of a line that you like. [i.e. slope-intercept, point-slope, or standard]

A) $(0, 2)$ & $(5, 12)$ $m = \frac{12-2}{5-0} = \frac{10}{5} = 2$. $y = 2x + 2$

B) $(3, 0)$ & $(0, -4)$ $m = \frac{-4-0}{0-3} = \frac{4}{3}$ $y = \frac{4}{3}x - 4$

9) Lab results: An experiment was done to measure the time it takes for an engine to cool down. They measured the temperature of the radiator fluid ($°F$) and time (sec). The best fit line is given below. The x- and y-axis start at zero and count up by tens.

a) Label the axes.

b) Just like in your experiment, circle two "nice" points and find the equation of the line.

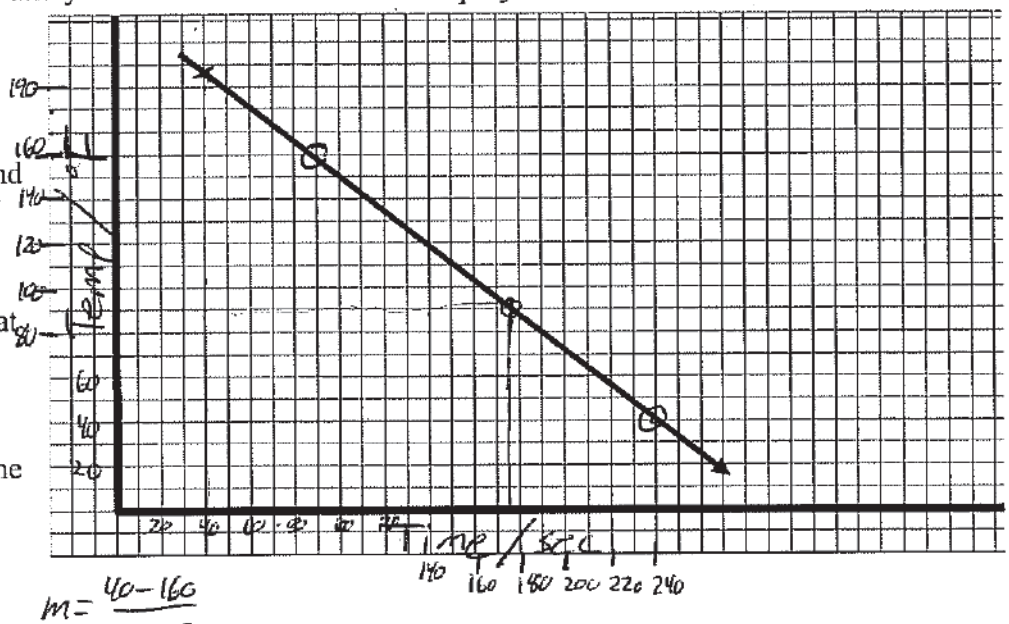
(90, 160)

(240, 40)

c) After 40secs, what temperature is the engine? 195°

d) How long until the engine is 90°F?

175 sec



$m = \frac{40-160}{240-90}$

$= \frac{-120}{150} = -.8$

$y = -.8(x - 240) + 40$

$y = -.8x + 232$

Name: key
Algebra I – Test 6
3/22/2015

1) Check if the given point is the solution. Show your work!

a) $(-3,1); y \leq 5x+7$ not a Soln.

(6) b) $(0,-2); \begin{cases} y = x-2 \checkmark \\ 2x+y=1 \times \end{cases}$ not a Soln.

c) $(2,5); \begin{cases} y \leq 6x+11 \checkmark \\ 3x-4y>0 \times \end{cases}$ not a Soln.

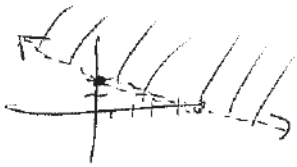
$6 - 20$

2) Solve the following by **GRAPHING** them. **Use graph paper!!**

(9) a) $\begin{cases} y=-x+4 \\ y=x-2 \end{cases}$ (3,1)

b) $\begin{cases} y>4x-2 \\ y \leq 2 \end{cases}$

c) $2x+5y>10$
$-2x \quad -2x$
$y > \frac{-2}{5}x + 2$



3) Solve the following systems by **SUBSTITUTION**.

(6) a) $\begin{cases} y=2x-11 \\ -x+y=-4 \end{cases}$

$-x+2x-11=-4$ (7,3)
$x-11=-4$
$+11 \quad +11$
$x=7$

b) $\begin{cases} 4x+y=0 \\ x+y=-3 \end{cases}$

$-x \quad -x$
$y=-x-3$

$4x+-x-3=0$ (1,-4)
$3x=3$
$x=1$

4) Solving the following systems by **ELIMINATION.**

(6) a) $\begin{cases} 3x-y=7 \\ 2x+y=3 \end{cases}$ (2,-1)

$5x=10 \quad x=2$

b) $\begin{cases} 4x+2y=6 \\ x-2y=-1 \end{cases}$ (1,1)

$5x=5$

$x=1$

5) The following four systems are some of the special cases. State the number of solutions for each system.

a) $\begin{cases} y = x + 3 \\ -x + y = 3 \end{cases}$ $-x+x+3=3$ ∞ soln.

(8)

b) $\begin{cases} y - 7 = 5x \\ y = 5x - 7 \end{cases}$ $5x-7-7=5x$ no soln.

c) $\begin{cases} y + 4x = 9 \\ y = 4x + 5 \end{cases}$ $4x+5-4x=9$, $8x=4$, $x=\frac{1}{2}$ one soln.

d) $\begin{cases} x + y = 4 \\ x - y = -5 \end{cases}$ $0=-9$ no soln.

6) For the following stories, **ONLY** setup a system of equations that could be used to answer the question.

(8)

A. Justin bought 5 pens and 2 pencils for \$5. Hobie bought 2 pens and 5 pencils for \$4. How much does it cost to buy a pen and a pencil? $\begin{cases} 5x+2y=5 \\ 2x+5y=4 \end{cases}$

B. Kristina wants to top Tori's party. She invites 20 friends. Each friend can either have a bottle of Mountain Dew or a bottle of Sprite. She spent \$46 on pop. Each Sprite costs \$2 and each Mountain Dew costs \$3. How many of each kind of pop did she buy? $\begin{cases} x+y=20 \\ 2x+3y=46 \end{cases}$

C. Angel and Chris are going to try their experiment again. This time they will blow up 2 bottles. After surrounding them with fire crackers, they take off running in different directions. If **together** they run for 12 seconds and Angel uses a jetpack to go 4 times as long as Chris, how long does each go? $\begin{cases} x+y=12 \\ y=4x \end{cases}$

D. Angel and Chris do not make it away safely this time. In fact, all of Kristina's friends (including Kristina) got sprayed with pop or plastic. If 6 times more people get splashed with pop than with plastic, how many people were hit with pop? $\begin{cases} x+y=21 \\ y=6x \end{cases}$

Name: Key
Algebra I – Test 7
5/5/2016

1)
a) When dealing with radicals, we do not want a $\sqrt{\ }$ in the denominator and a $\frac{1}{\sqrt{\ }}$ in the radical.

b) When dividing with the same base, you keep the base and subtract the exponents.

c) In the radical $\sqrt[4]{\ }$, 4 is the index. We say it is a 4 for 1 deal.

d) When writing a number in scientific notation, there should be 1 digit/s before the decimal.

2) Simplify the following expressions. Leave your answers in exponent form with positive exponents.

a) $\frac{15x^9y^5}{20x^4y^9}$ $\frac{3x^5}{4y^4}$

c) $\left(\frac{7^4}{7^9}\right)^{11}$ $\frac{1}{7^{55}}$

b) $2^{-3}x^9y^4 * 3^2x^5y^{-10}$ $\frac{9x^{14}}{8y^6}$

d) $(4^3x^9y^3 * x^2)^6$ $4^{18}x^{66}y^{18}$

3) Simplify the following expressions. Write your answers in scientific notation.

a) $\frac{6*10^{-11}}{30*10^5}$ 2×10^{-16} 2×10^{-17}

b) $2.5 * 10^5 * 7.4 * 10^{-9}$ 18.5×10^{-4} 1.85×10^{-3}

4) Classify the following polynomials by their degree and number of terms.

a) $7 + x^2$ quadratic binomial

c) $x + 6^4$ linear binomial.

b) $x^3 + 3x$ cubic binomial

d) 2^4 constant monomial

5) Rationalize/simplify the following radicals.

a) $\sqrt{27}$ $3\sqrt{3}$

b) $\frac{8}{\sqrt[3]{x}\cdot x\cdot x}$ $\frac{8\sqrt[3]{x^2}}{x}$

c) $\sqrt[3]{16x^4y^6}$ $2xy^2\sqrt[3]{2x}$

d) $\sqrt[2]{\frac{1\cdot 3}{3\cdot 3}}$ $\frac{1}{3}\sqrt{3}$

6) Fill in the missing number to make the equation true.

a) $32^{\frac{\square}{5}} = 16$ $2^{\square} = 16$ (4)

b) $16^{\frac{\square}{2}} = 64$

$4^{\square} = 64$ (3)

8) Put the following polynomials in standard form and identify the leading coefficient.

a) $9x^7 + 3x^4 - 8x^9$ $-8x^9 + 9x^7 + 3x^4$ L.C. (-8)

b) $6x^2 - x^3 + 8^5 - 3x^4 + 2x^{10}$ $2x^{10} - 3x^4 - x^3 + 6x^2 + 8^5$ L.C. (2)

9) Multiply the following expressions.

a) $x^3(x^2 - 2x)$ $x^5 - 2x^4$

b) $x(3x^2 - 4x)$ $3x^3 - 4x^2$

c) $(x + 1)(x - 3)$ $x^2 - 2x - 3$

d) $(x - 1)(x^2 + 3x - 4)$ $x^3 + 2x^2 - 7x + 4$

10) Write the following numbers in scientific notation.

a) 46.2 4.62×10^1

b) 0.00064 6.4×10^{-4}

c) 1700 1.7×10^3

d) 9510000 9.51×10^6

11) What does F.O.I.L. stand for?

first
outer
inner
last.

	x^2	$3x$	-4
x	x^3	$3x^2$	$-4x$
-1	$-x^2$	$-3x$	$+4$

Name: Key
1/8/2016
Algebra I Quiz

1) Write each of the following in standard form. Then, identify A, B, and C for each of the lines given in the table.

	$3x + 5y = 9$	$2y = 7x + 3$	$11x = 2y - 5$	$3x + 8y - 1 = 0$
Standard Form	$3x+5y=9$	$-7x+2y=3$	$11x-2y=-5$	$3x+8y=1$
A	3	-7	11	3
B	5	2	-2	8
C	9	3	-5	1

2) There are two important points with a line. Their general forms are: $(0, y)$ and $(x, 0)$. What is the name of each of these points? Be specific.

x, y - inter.

3) Use the First Differences to classify each table as linear or nonlinear.

a)

X	0	1	2	3
Y	5	6	8	12

+1 +2 +1 +2 +4

nonlinear.

b)

X	3	4	5	6
Y	-4	-1	2	5

linear.

4) I keep preaching about two main uses of algebra in the real world. What are those two uses?

a) Modeling

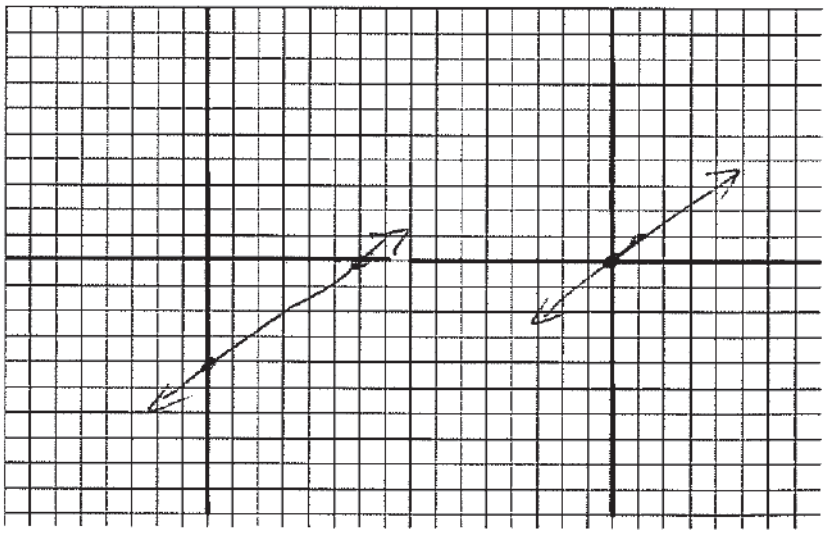
b) Taking things a part & putting them together.

5) Graph the following lines on the given graphs.

a) $2x - 3y = 12$

x	y
0	-4
6	0

b) $x - y = 0$



Name: Key
1/15/2016
Algebra I Quiz

1) Write each of the following in standard form. Then, identify A, B, and C for each of the lines given in the table.

	a) $3x + 5y = 15$	b) $2y = 7x + 14$	c) $3x = 4y - 24$	d) $3x + y - 6 = 0$
Standard Form	$3x+5y=15$	$-7x+2y=14$	$3x-4y=-24$	$3x+y=6$
A	3	-7	3	3
B	5	2	-4	1
C	15	14	-24	6

8?

↳ y-inter

(2) 2) There are two important points with a line. Their general forms are: $(0, y)$ and $(x, 0)$. What is the name of each of these points? Be specific.

↳ x-inter.

(4) 3) Using the lines from #1, graph them **AND** calculate the slope of each line.

a) $\frac{-3}{5}$ b) $+\frac{7}{2}$ c) $\frac{3}{+4}$ d) -3

(5,0) (0,3) (-2,0) (0,7) (-4,0) (0,6) (2,0) (0,6)

4) Fill in the blanks for the definitions of slope:

(2) $$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\text{change in } \underline{y}}{\text{change in } \underline{x}}$$

4) I keep preaching about two main uses of algebra in the real world. What are those two uses?

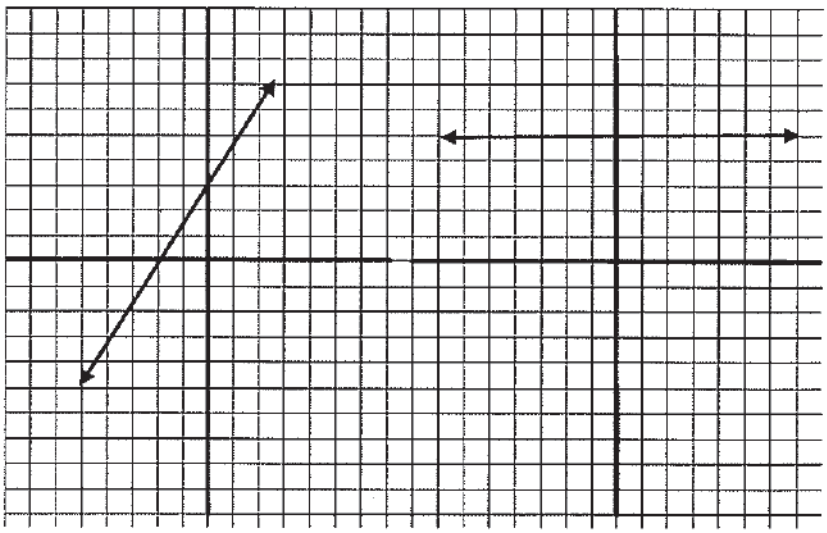
(2) a) Modeling

b) Putting together, taking it apart.

5) Given the following lines, figure out what the slope of the lines are.

(2) a) $\frac{3}{2}$

b) 0



Name: Key
1/22/2016
Algebra I Quiz

1) Write each of the following in **SLOPE – INTERCEPT form**. Then, identify the slope and y-intercept.

	a) $6x + 3y = 15$	b) $2y = 8x + 14$	c) $10x = 5y - 5$	d) $3x + y - 6 = 0$
Slope – Inter	$y = -2x + 5$	$y = 4x + 7$	$y = 2x + 1$	$y = -3x + 6$
Slope	-2	4	2	-3
Y-intercept	5	7	1	6

2) The slope-intercept form of a line is: y=mx+b. What does the m stand for? What does *b* stand for?
slope y-inter.

3) The following points are part of a direct variation relationship. What is the formula for the line (y=kx) of each?

a) (2, 10) $y = 5x$

b) (9, 3) $y = \frac{1}{3}x$.

4) Fill in the blanks for the definitions of slope:

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\text{change in } y}{\text{change in } x} = \frac{y_2 - y_1}{x_2 - x_1}$$

5) Given the following pairs of points, calculate the slope. Leave your answer in fraction form.

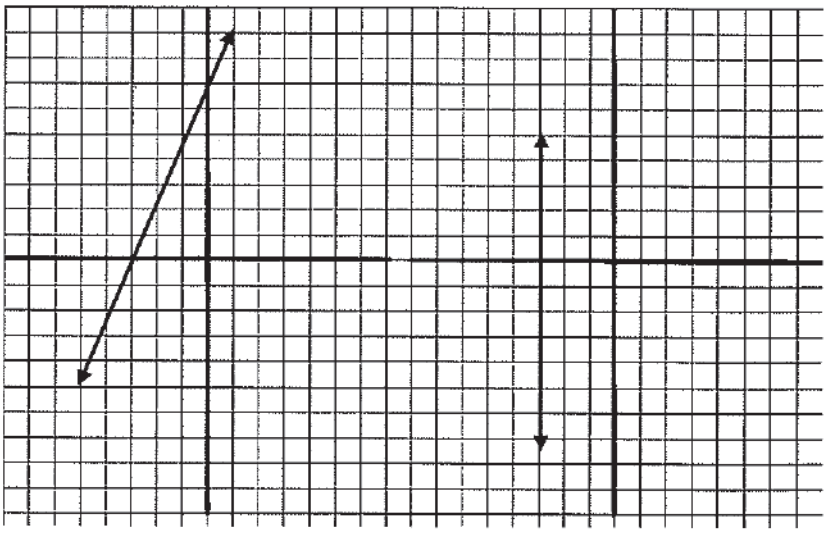
a) (2, 3) & (4, −5) $m = \frac{-8}{+2} = -4$

b) (−1, 0) & (3, 10) $m = \frac{10}{4} = \frac{5}{2}$.

6) Given the following lines, figure out what the slope of the lines are.

a) $7/3$

b) und.



Name: Key

2/5/2016

Algebra I Quiz

1) Write each of the following in **SLOPE – INTERCEPT form**. Then, identify the slope and y-intercept.

	a) $6x + 3y = 15$	b) $2y = 8x + 14$	c) $10x = 5y - 5$	d) $3x + y - 6 = 0$
Slope – Inter	$y = -2x + 5$	$y = 4x + 7$	$y = 2x + 1$	$y = -3x + 6$.
Slope	-2	4	2	-3
Y-intercept	5	7	1	6.

2) The slope-intercept form of a line is: y=mx+b. What does the m stand for? What does *b* stand for?

↳ slope ↳ y-inter.

3) The following points are part of a direct variation relationship. What is the formula for the line (y=kx) of each?

a) (2, 10) $k = \frac{10}{2}$ $y = 5x$

b) (9, 3) $k = \frac{3}{9}$ $y = \frac{1}{3}x$

4) Fill in the blanks for the definitions of slope:

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\text{change in } y}{\text{change in } x} = \frac{y_2 - y_1}{x_2 - x_1}$$

5) Given the following pairs of points, calculate the slope. Leave your answer in fraction form.

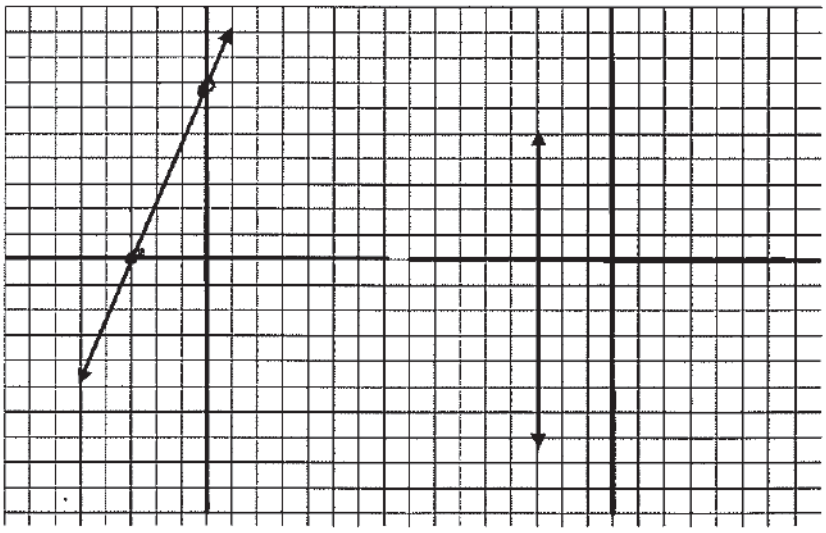
a) (2, 3) & (4, −5) $m = \frac{-5-3}{4-2} = \frac{-8}{2} = -4$

b) (−1, 0) & (3, 10) $m = \frac{10-0}{3-1} = \frac{10}{4} = \frac{5}{2}$

6) Given the following lines, figure out what the slope of the lines are.

a) $7/3 = m$

b) m = und.



Name: ~~Test~~ Key
2/12/2016
Algebra I Quiz

1) There are three different ways of writing the equation of a line. What are they called and what do they look like?

a) ~~A~~ Standard form: $Ax + By = C$

b) Slope-intercept: $y = mx + b$.

c) Point-slope: $y - y_1 = m(x - x_1)$

2) Given the following information, write the equation of the line. Use any form you want.

a) slope = 2, $(-1, 4)$ $y - 4 = 2(x+1)$ or $y = 2x + 6$

b) $(2, 10), (-3, 25)$ $m = \frac{15}{-5} = -3$ $y - 10 = -3(x-2)$ or $y = -3x + 16$.

3) Given the following information, write the equation of the line. Use any form you want.

a) slope = 3, y-inter: (0, -5) $y - (-5) = 3(x-0)$ or $y = 3x - 5$

b) $(4, 0), (0, 6)$ $m = \frac{6}{-4} = -\frac{3}{2}$ $y - 0 = -\frac{3}{2}(x-4)$ or $y = -\frac{3}{2}x + 6$

4) Fill in the blanks for the definitions of slope:

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\text{change in } \underline{y}}{\text{change in } \underline{x}} = \frac{y_2 - y_1}{x_2 - x_1}$$

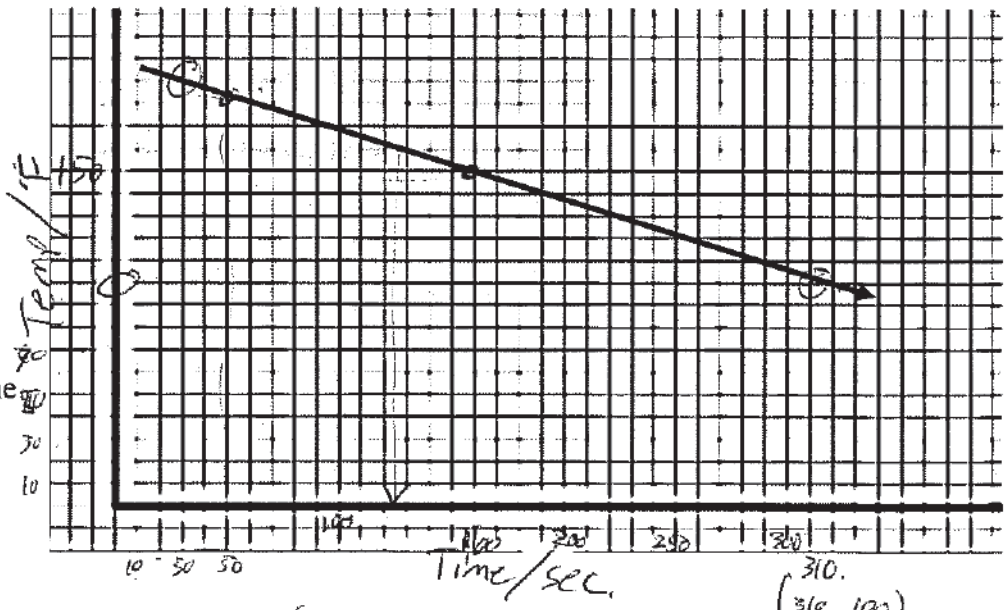
5) Lab results: An experiment was done to measure the time it takes for an engine to cool down. They measured the temperature of the radiator fluid ($°F$) and time (sec). The best fit line is given below. The x- and y-axis start at zero and count up by tens.

a) Label the axes.

b) Just like in your experiment, circle two "nice" points and find the equation of the line.

c) After 50secs, what temperature is the engine?
~~170°F~~ 181°F

d) How long until the engine is 150°F?
~~155 sec~~ 159 sec.



(30, 190)

$y - 190 = -.321(x - 30)$
or
$y = -.321x + 199.6$

$\frac{100 - 190}{310 - 30} = \frac{-90}{280} = -\frac{9}{28}$

Name: key
2/26/2016
Algebra I Quiz

1) Check if the given point is the solution of the system. Show your work!

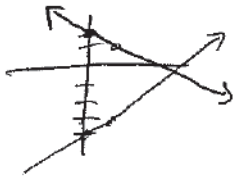
a) $(0,-2)$; $\begin{cases} y = x - 2 \\ 2x + y = 1 \end{cases}$ not a soln.

$0 - 2 = 1$

b) $(3,-1)$; $\begin{cases} x - 2y = 5 \\ 2x - y = 7 \end{cases}$ $3 + 2 = 5$ ✓ $6 - 1 = 7$ ✓ yes, it is a soln.

2) Solve the following systems by **GRAPHING** them. **Use graph paper!!**

a) $\begin{cases} y = -x + 2 \\ y = x - 4 \end{cases}$ $(3, -1)$



rough sketch.

b) $\begin{cases} x + y = 3 \\ 2x - y = 0 \end{cases}$ $(1, 2)$

3) Solve the following systems by **SUBSTITUTION**.

a) $\begin{cases} y = -3x + 4 \\ x = 2y + 6 \end{cases}$

$y = -3(2y + 6)$

$= -6y - 18$

$+6y \quad +6y$

$7y = -18$

$y = -\frac{18}{7}$

$-\frac{18}{7} = -3x + 4$

$-\frac{46}{7} = -3x$ $\quad x = \frac{46}{21}$

$\left(\frac{46}{21}, \frac{-18}{7}\right)$

b) $\begin{cases} 3x - y = 11 \\ 5y - 7x = 1 \end{cases}$ $\rightarrow y = 3x - 11$

~~$(-28, 15)$~~ $(7, 10)$ $5(3x - 11) - 7x = 1 \rightarrow 15x - 55 - 7x = 1 \rightarrow 8x = 56 \rightarrow x = 7$

4) Hobie bought 4 DVD's and 2 candy bars for $19. Chris bought 2 DVD's and 4 candy bars for $15. How much does it cost to buy a DVD and a candy bar?

$4x + 2y = 19$

$-2(2x + 4y = 15)$

$-4x - 8y = -30$

$4x + 2y = 19$

$-6y = -11$

$y = \frac{11}{6} \approx \$1.83$ / candy bar

$4x + 2\left(\frac{11}{6}\right) = 19$

$x = \$3.83$ / DVD

Name: Key
3/11/2016
Algebra I Quiz

1) Check if the given point is the solution of the system. Show your work!

a) $(0,-2)$; $\begin{cases} y = x - 2 \\ 2x + y = 1 \end{cases}$ ✓ ✓ Not a soln.

b) $(3,-1)$; $\begin{cases} x - 2y = 5 \\ 2x - y = 7 \end{cases}$ ✓ ✓ is a soln.

2) Solve the following systems by **SUBSTITUTION**.

a) $\begin{cases} 2x - 3y = -6 \\ x + 3y = 15 \end{cases}$ $x = -3y + 15$ $2(-3y+15) - 3y = -6$. $-6y + 30 - 3y = -6$ $-9y = -36$ $y = 4$ (3, 4)

b) $\begin{cases} 2x + y = -1 \\ x + y = 2 \end{cases}$ $y = -x + 2$ $2x - x + 2 = -1$ $x = -3$ $y = 5$ (-3, 5) ~~(-1, 4)~~

3) Solving the following systems by **ELIMINATION.**

a) $\begin{cases} y = -x + 5 \\ 2x + y = 11 \end{cases}$ $x + y = 5$ $-2x - y = -11$ $-x = -6$ $x = 6$ (6, -1)

b) $\begin{cases} 4x - 3y = -1 \\ 3x - y = -2 \end{cases}$ -3 $-9x + 3y = +6$ $-5x = 5$ $x = -1$ $y = -1$ (-1, -1)

4) Solve the following systems of equations.

a) $\begin{cases} y = -x + 5 \\ x + y = 5 \end{cases}$ All Reals.

b) $\begin{cases} y - 1 = 2x \\ y = 2x - 1 \end{cases}$ $2x - 1 - 1 = 2x$ no soln

5) Tori bought 5 DVD's and 7 candy bars for $35. Angel bought 7 DVD's and 5 candy bars for $60. How much does it cost to buy a DVD and a candy bar?

$$\begin{cases} 5x + 7y = 35 \\ 7x + 5y = 60 \end{cases}$$

Name:_____
3/18/2016
Algebra I Quiz

1) a) When graphing linear inequalities, you always need to have the inequality in slope-intercept form.
b) When multiplying/dividing by a (−), you have to switch the inequality sign.
c) You have dashed line when there is an ("Or equal to") or (**NOT** an "Or equal to") (multiple choice).
d) A $y = 2$ is a vertical/horizontal line. (multiple choice)

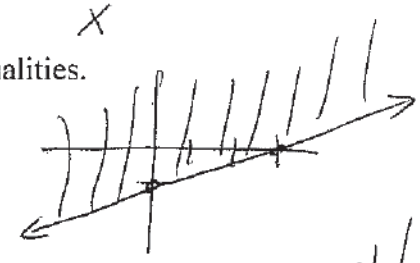
2) Check if the given point is the solution of the system. Show your work!

a) $(0,-2)$; $\begin{cases} y \geq x - 2 \\ 2x + y < 1 \end{cases}$ $-2 \geq -2$ ✓ $0 - 2 < 1$ ✓ yes.

b) $(3,-1)$; $\begin{cases} x - 2y \leq 5 \\ 2x - y > 7 \end{cases}$ $3 - -2 \leq 5$ ✓ $6 - -1 > 7$ ✗ not a soln.

3) Graph the following linear inequalities.

a) $y \geq \frac{1}{3}x - 1$

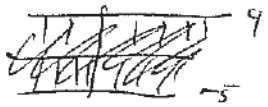


b) $2x - 3y < 6$

$y > \frac{2}{3}x - 2$

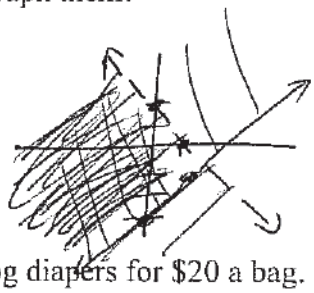
4) Solve the following systems. You have to graph them!

a) $\begin{cases} y \leq 4 \\ y > -5 \end{cases}$



b) $\begin{cases} y \geq 2x - 3 \\ 2x + y < 2 \end{cases}$

$y < -2x + 2$

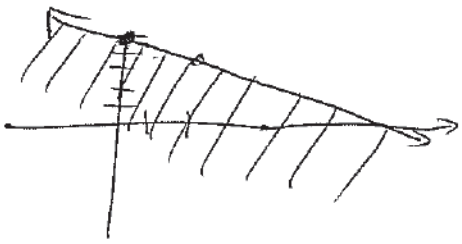


5) Kristina buys dog food for $10 a bag and dog diapers for $20 a bag. She only has $100 to spend.
A) Write an inequality that represents this story.
B) Graph the inequality.
C) What kind of values can you have for this story? (Think about buying DVD's and candy bars as well)

* only positive integer values

$10x + 20y \leq 100$

$y \leq -\frac{1}{2} + 5$



Name: Key
4/8/2016
Algebra I Quiz

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^7)

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

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

3) Multiply/divide the following expressions.

a) $2x^{-9} * 6x^{-14}$ $\frac{12}{x^{23}}$

b) $\frac{15x^9y^5}{20x^4y^9}$ $\frac{3x^5}{4y^4}$

c) $4x^9y^3 * 3x^2$ $12x^{11}y^3$

d) $(x^6y^{-8})^{-5}$ $\frac{y^{40}}{x^{30}}$

4) Write the following numbers in scientific notation.

a) 0.00462 4.62×10^{-3}

b) 64000 6.4×10^4

c) .0017 1.7×10^{-3}

d) 450000 4.5×10^5

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

a) $(8.56 * 10^{-5})(3.29 * 10^{29})$ 2.816×10^{25}

c) $\frac{3.69*10^9}{6.98*10^{-3}}$ 5.287×10^{11}

Name: Key
4/15/2016
Algebra I Quiz

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"

d) In the radical $\sqrt[4]{\ }$, 4 is the index. We say it is a 4 for 1 deal.

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 (−) exponent, then you have to reciprocate it.

3) Multiply/divide the following expressions.

a) $5x^6 * 9x^{-14}$ $\frac{45}{x^8}$

b) $\frac{40x^3y^{20}}{20x^4y^9}$ $\frac{2y^{11}}{x}$

c) $7x^{-9}y^5 * 3x^2$ $\frac{21y^5}{x^7}$

d) $(x^5y^{-5})^{-5}$ $\frac{y^{25}}{x^{25}}$

4) Simplify the following radicals.

a) $\sqrt{32}$ $4\sqrt{2}$

128 → 4, 32 → 2, 2, 4, 8 → 2, 2, 4, 2

b) $\sqrt[5]{128x^{14}y^7}$ $2x^2y\sqrt[5]{4x^4y^2}$

c) $\sqrt{9}$ 3

d) $\sqrt[3]{81xy^3}$ $3y\sqrt[3]{3x}$

5) Simplify the following

a) $\frac{1}{2x^{-3}}$ $\frac{x^3}{2}$

b) $\frac{(a^{-7}b^2)}{c^3d^{-4}}$ $\frac{b^2d^4}{a^7c^3}$

Name: Key.
4/22/2016
Algebra I Quiz

1) Fill in the blanks:

a) When dealing with radicals, we do not want a $\sqrt{}$ in the denominator and a $\frac{1}{\square}$ in the radical.

b) When dividing with the same base, you keep the base and subtract the exp.

c) In the expression $x^{\frac{3}{5}}$ the 3 is the exp. and the 5 is the index part of the radical.

d) In the radical $\sqrt[4]{}$, 4 is the index. We say it is a 4 for 1 deal.

2) Fill in the missing number to make the equation true.

a) $32^{\frac{4}{5}} = 16$ b) $16^{\frac{3}{2}} = 64$

3) Multiply/divide the following expressions.

a) $2x^{10} * 4x^{-14}$ $\frac{8}{x^4}$ c) $6x^{-5}y^9 * 3x^2$ $\frac{18y^9}{x^3}$

4) Rationalize/simplify the following radicals.

a) $\sqrt[3]{\frac{1}{3}\cdot\frac{3}{3}\cdot\frac{3}{3}}$ $\frac{1}{3}\sqrt[3]{9}$ b) $\sqrt{\frac{y^5}{8}\cdot\frac{2}{2}}$ $\frac{y^2}{4}\sqrt{2y}$

5) Simplify the following

a) $(64x^{31}y^9)^{\frac{1}{5}}$ $2x^6y\sqrt[5]{2xy^4}$ b) $\sqrt[4]{x^8y^{13}}$ $x^2y^3\sqrt[4]{y}$