Name: Key PreAlgebra – Semester Test 12/14/2016

1) 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.

2) 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	35x - 7

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

B $a * b = b * a$

C $1 * x = x$

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

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

A) Distributive Property

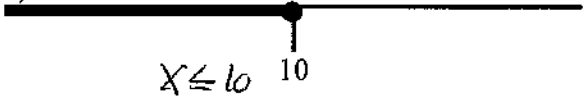
B) Commutative Property of Multiplication

C) Identity Property of Multiplication

D) Associative Property of Multiplication

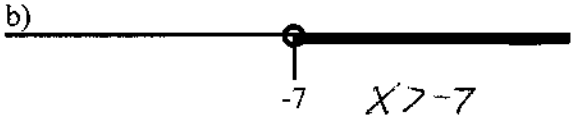
4) Write an inequality for the following graphs.

a)



$x \leq 10$

b)



$x > -7$

5) Find the GCF of the following numbers.

a) 32, 28 $32 = 2^5$, $28 = 2^2 \cdot 7$, GCF $= 2^2 = 4$

b) 45, 50 $45 = 3^2 \cdot 5$, $50 = 2 \cdot 5^2$, GCF $= 5$

6) 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) $-1 - 5x > -3x - 2x$

$+5x \quad +5x$

$-1 > 0$ no soln

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

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

$5x + 11 < 7 - 5x$

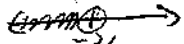
$+5x \quad +5x$

$10x + 11 < 7$

$-11 \quad -11$

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

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



7) Write the following in words.

a) $5x - 3$ 5 times x minus 3

b) $2 * (x - 7)$ 2 times the difference of x and 7.

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

a) From $10°F$ to $-11°F$ $-11 - 10 = -21°F$

b) From $120ft$ to $1200ft$ $1200 - 120 = 1080ft$

9) Evaluate the following absolute values:

a) $|-4|$ 4

b) $|-1| + 9$ $1 + 9 = 10$

10) Simplify the following expressions by combining like terms.

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

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

11) Use the graph to plot and label the points:

$A(-1, 5)$ $B(2, -3)$ $C(0, 2)$ $D(4, 3)$ See answers page.

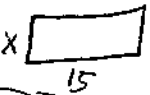
12) What quadrant is each letter in?

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

13) Find the difference of the following expressions:

a) $-5-3$ -8 | b) $-3+(+9)$ 6

14) 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? $15x=45$ $x=3ft$

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

a) $\frac{a+11}{6}$ $\frac{6}{6}=1$ | b) $a[(b-a)^2+5]$ $-5[(7-5)^2+5]=[12^2+5]$ $=-5[144+5]=-5(149)=-745$

16) Solve the following equations.

a) $4x-20=16$ $+20\ |\ +20$ $4x=36$ $\frac{4x}{4}=\frac{36}{4}$ $x=9$ | b) $\frac{x}{4}+30=25$ $-30\ |\ -30$ $4\cdot\frac{x}{4}=-5\cdot4$ $x=-20$

17) Translate the following into equations:

a) The quotient of 12 and y is 15 $\frac{12}{y}=15$

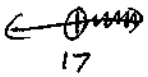
b) The sum of 5 and x is 20 $x+5=20$

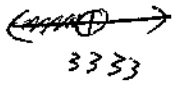
Write the following in words.

c) $11+x=4$ 11 plus x is 4

d) $20x=10$ 20 times x is 10.

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

a) $x-5\geq12$ $+5\ |\ +5$ $x\geq17$ 

b) $\frac{x}{3}<1111\cdot3$ $x<3333$ 

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

a) $a+(-23)$ 10 $=-13$ | b) $-b-a$ $+5-10=-5$

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

a) $9x+1<-6$ 9 times x plus 1 less than -6 | b) $6+\frac{x}{3}\geq-4$ 6 plus x divided by 3 is greater than or equal to -4.

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

a) $63=3^2\cdot7$ | b) $120=2^3\cdot3\cdot5$

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

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

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

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

$6x+42-4=14$

$6x+38=14$

$-38\ |\ -38$

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

$x=-4$

b) $\frac{x-6}{5}=16\cdot5$

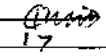
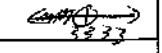
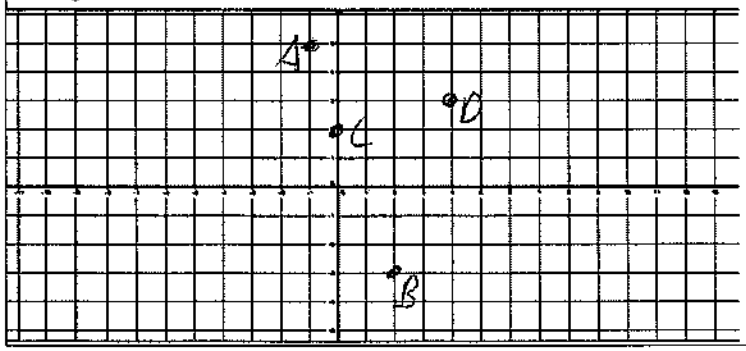
$x-6=80$

$+6\ |\ +6$

$x=86$

Pre Algebra

ANSWERS ONLY!!

1A) 3^2			12A) II	12B) IV	
1B) 3 squared			12C) Qtr I & II	12D) I	
1C) 3 to the second power.			13A) -8		
2A) $15x, -7, 20x$	2B) 15, 20	2C) -7	13B) 6		
2D) $15x, 20x$	2E) $35x-7$		14A) x [ ] 15		
3A) B	3B) C		14B) $x = 3$ ft		
3C) D	3D) A		15A) 1		
4A) $x \leq 10$			15B) -745		
4B) $x > -7$			16A) $x = 9$		
5A) GCF: 4			16B) $x = -20$		
5B) GCF: 5			17A) $\frac{12}{7} = 15$	17B) $x+5=20$	
6A) no soln			17C) 11 plus x is 4		
6B) $x < -3/5$ 			17D) 20 times x is 10		
7A) 5 times x minus 3			18A) $x > 17$ 		
7B) 2 times the difference of x and 7			18B) $x < 3333$ 		
8A) $-21°F$			19A) -13		
8B) 1080ft			19B) -5		
9A) 4			20A) 9 times x plus 3 is less than -6.		
9B) 10			20B) 6 plus x divided by 4 is greater than or equal to -4.		
10A) $-7x+17y$			21A) $3^2 \cdot 7$		
10B) $8x+11$			21B) $2^3 \cdot 3 \cdot 5$		
11) 			22A) exponent, letter		
			22B) variable		
			23A) $x = -4$		
			23B) $x = 86$.		

Name: Key

PreAlgebra Test 4 (thru 4.5) (5th hour)

1/31/2016

1) Fill in the blanks:

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

(4)

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)

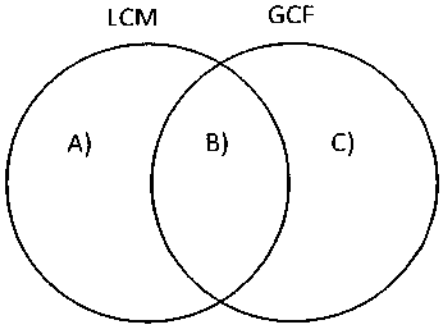
a) If do you do not see an exponent on the base, then you assume it is 1 (Think $x^?$)

(2)

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 LCM and GCF chart:



(3)

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.

4) Multiply/divide the following expressions.

(8)

a) $3x^{-5} * 14x^{21}$ $42x^{16}$

b) $21x^9y^7 * 3xy^4$ $63x^{10}y^{11}$

3, 4, 8, 4 → 192

c) $5x^{-9} * 10x^{-19}$ $50x^{-28} = \frac{50}{x^{28}}$

d) $6x^8 * 8x^{-6} * 4x^5$ $192x^7$

5) Find the LCM of the following numbers

(8)

a) 32, 28 $32 = 2^5$, $28 = 2^2 \cdot 7$, $2^5 \cdot 7 = 224$

c) 45, 50 $45 = 3^2 \cdot 5$, $50 = 2 \cdot 5^2$, $2 \cdot 3^2 \cdot 5^2 = 450$

b) 14, 21, 28 $14 = 2 \cdot 7$, $21 = 3 \cdot 7$, $28 = 2^2 \cdot 7$, $2^2 \cdot 3 \cdot 7 = 84$

d) 4, 13, 24 $4 = 2^2$, $13 = 13$, $24 = 2^3 \cdot 3$, $2^3 \cdot 3 \cdot 13 = 312$

1, 32, 7, 224

1, 24, 13, 312

6) Write the fractions in simplest form. Tell whether they are equivalent.

a) $\frac{21}{49}, \frac{15}{35}$ yes | b) $\frac{16}{48}, \frac{28}{36}$ no.

7) Use the LCD to determine which fraction is greater.

a) $\frac{16}{30}, \frac{14}{25}$ | b) $\frac{19}{20}, \frac{17}{18}$

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

a) 124 $=2^2 \cdot 31$	b) 63 $=3^2 \cdot 7$
c) 25 $=5^2$	d) 46 $=2 \cdot 23$

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

a) $\frac{6^3}{6^2}$ 6	b) $\frac{24x^{11}}{18x^3}$ $\frac{4x^8}{3}$
c) $\frac{x^7y^8}{x^9y^5}$ $\frac{y^3}{x^2}$	d) $\frac{x^2y^3}{xy^8}$ $\frac{x}{y^5}$

10) Find the LCM of the following monomials

a) $14x^3, 42x^4$ $42x^4$	b) $8x^2, 11$ $88x^2$
c) $12x, 6x^2, 9x^3$ $36x^3$	d) $64x^4, 24x^2$ $192x^4$

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

a) $(x^{-5}y^6)^9$ $\frac{y^{54}}{x^{45}}$	b) $(3x^4y^{-5})^{-4}$ $\frac{y^{20}}{3^4x^{16}}$
c) $(x^4y^{-2})^{-5}$ $\frac{y^{10}}{x^{20}}$	d) 14^0 1

Name: key 2/21/2017 PreAlgebra – Test 5

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

$7.23\times10^{-2}\,kJ \left|\frac{10^{3}\,J}{1\,kJ}\right. = 7.23\times10\,J$

b) 445 s to ms

$4.45\times10^{2}\,s \left|\frac{10^{3}\,ms}{1\,s}\right. = 4.45\times10^{5}\,ms$

c) 15.2 μg to g

$1.52\times10\,\mu g \left|\frac{1\,g}{10^{6}\,\mu g}\right. = 1.52\times10^{-5}\,g$

d) 9368 m to Mm

$9.368\times10^{3}\,m \left|\frac{1\,Mm}{10^{6}\,m}\right. = 9.368\times10^{-3}\,Mm$

8) Two Step Conversions

a) 936800 dm to Mm

$9.368\times10^{5}\,dm \left|\frac{1\,m}{10\,dm}\right|\frac{1\,Mm}{10^{6}\,m} = 9.368\times10^{-2}\,Mm$

b) 587.1 Mg to μg

$5.871\times10^{2}\,Mg \left|\frac{10^{6}\,g}{1\,Mg}\right|\frac{10^{6}\,\mu g}{1\,g} = 5.871\times10^{14}\,\mu g$

c) 319000 cL to ML

$3.19\times10^{5}\,cL \left|\frac{1\,L}{10^{2}\,cL}\right|\frac{1\,ML}{10^{6}\,L} = 3.19\times10^{-3}\,ML$

d) 0.4744 nJ to μJ

$4.744\times10^{1}\,nJ \left|\frac{1\,J}{10^{9}\,nJ}\right|\frac{10^{6}\,\mu J}{1\,J} = 4.744\times10^{-4}\,\mu J$

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

$263500\,weeks \left|\frac{7\,days}{1\,week}\right. = 1.845\times10^{6}\,days$

c) 0.004279 g to lbs

$0.004279\,g \left|\frac{1\,oz}{28.3\,g}\right|\frac{1\,lb}{16\,oz} = 9.45\times10^{-6}\,lb$

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

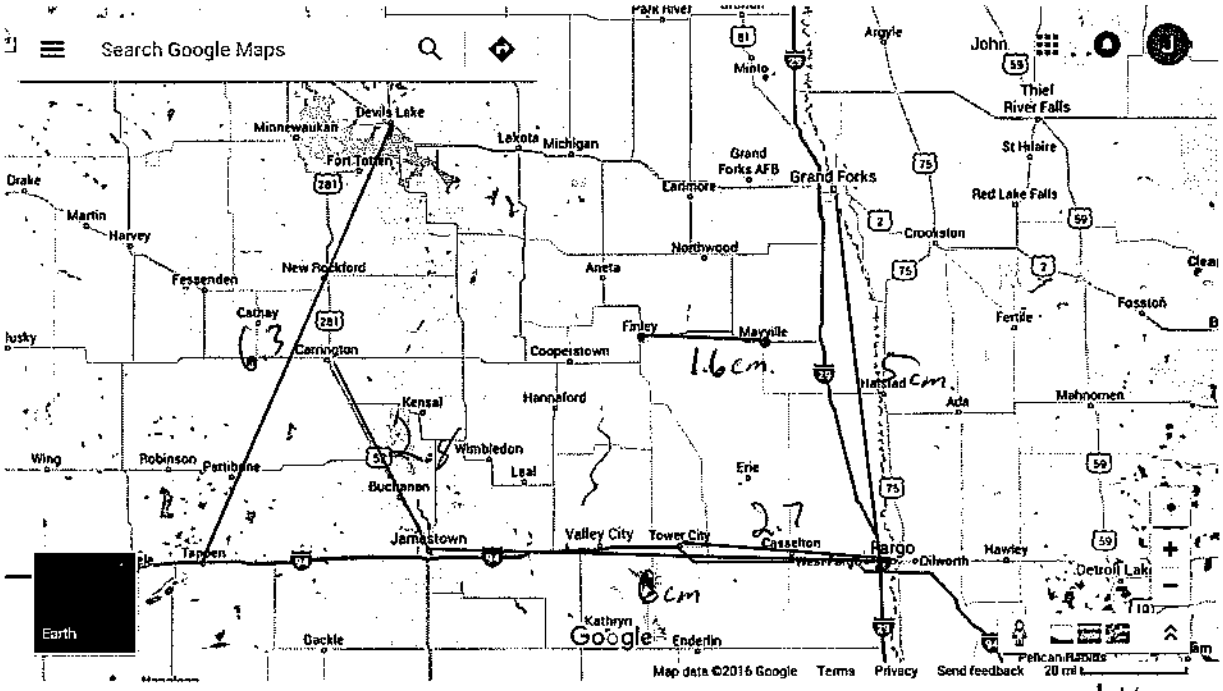
c) $6.89 * 10^{5}$ 689000

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

+2 Stupid points

Name: Key. 3/21/2017 PreAlgebra (5th Hour) – Test 6

1) Use the map below to answer the following questions.



(10)

a) How far is Carrington from Jamestown? 40mi $\frac{1.4}{20} = \frac{2.8}{x}$

b) Taking i94 and 29 north, how far is it from Valley City to Grand Forks? 157.1mi $\frac{1.4}{20} = \frac{11}{x}$

c) How far is Finley from Mayville? 22.9mi $\frac{1.4}{20} = \frac{1.6}{x}$

d) How far is it to fly from Tappen to Devils Lake? 90mi $\frac{1.4}{20} = \frac{6.3}{x}$

e) Taking 29 South, how far is Grand Forks from Tower City? 110mi $\frac{1.4}{20} = \frac{7.7}{x}$

f) If you drive 75 mph, how long to it take to drive from Carrington to Jamestown? (a) $40/70 = .53\text{hr}$

g) If you fly 200mph, how long does it take to fly from Tappen to Devils Lake? (d) $90/200$ .45hr

h) If you drive 65 mph, how long does it take to drive from Grand Forks to Tower City? (e) $\frac{110}{65} = 1.7\text{hr}$

2) Solve the following proportions.

(8)

a) $\frac{3}{21} = \frac{x}{35}$ $x=5$ 35·3/21

b) $\frac{16}{36} = \frac{14}{x}$ $x = 31.5$ 36·14/16.

c) $\frac{24}{x-3} = \frac{16}{54}$ $X=84$ 54·24/16 +3

d) $\frac{35}{x+7} = \frac{21}{7}$ 35·7/21 −7. = 4.6

3) Name the corresponding angles and the corresponding sides.

(3)

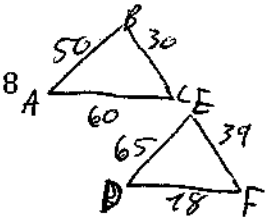
$\angle A = \angle D$ $AB \sim DE$ $\Delta ABC \sim \Delta DEF$

$\angle B = \angle E$ $AC \sim DF$

$\angle C = \angle F$ $BC \sim EF$

4) Draw and label two triangles using following information

$\Delta ABC \sim \Delta DEF$ & $AB = 50, BC = 30, AC = 60, DE = 65, EF = 39, DF = 78$



(3)

b) Find the ratio of the lengths of ~~corresponding~~ sides from ΔABC to ΔDEF.

30:39 10:13 4:5

5) What does it mean to be similar?

(2)

Same shape, diff size.

6) Using the triangles on the right, find FE and FD.

$\Delta ABC \sim \Delta DEF$

(4)

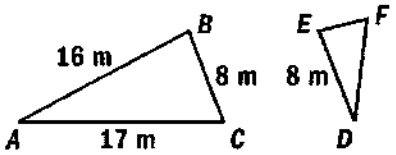
$AB \sim DE$

$BC \sim EF$

$AC \sim DF$

$\frac{16}{8} = \frac{8}{x}$ $\frac{16}{8} = \frac{8}{x}$ 17

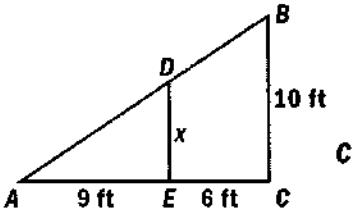
FE = 4m FD = 8.5m



7) Using the triangles on the right, find x. $\Delta ABC \sim \Delta ADE$

(3)

$\frac{10}{x} = \frac{15}{9}$ X = 6 ft



8) Morgan is standing next to a billboard sign. Morgan stands 5.5' tall and casts a shadow 3.8' long. If the billboard is casting a 25' shadow, how tall is the sign?

(3)

$\frac{5.5}{3.8} = \frac{x}{25}$ X = 36.2 ft

9) If you roll a dice, what is the probability that it lands on a multiple of 3?

(2)

$\frac{2}{6} = \frac{1}{3}$

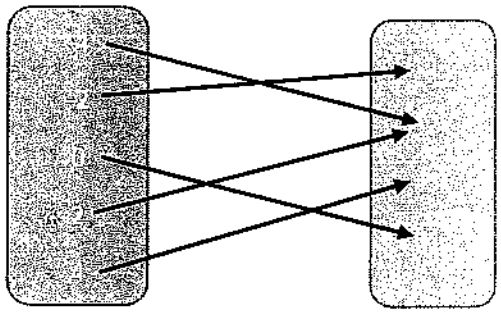
33.3%

Name: Key 4/28/2017 PreAlgebra (5th Hour) – Test 7

1) Give the domain and range of the following relations:

a) $\{(-5,-3),(-3,-5),(2,-3),(-5,0),(0,0)\}$ D: $\{-5,-3,0,2\}$ R: $\{-5,-3,0\}$

b)



D: $\{-4,-2,0,2,4\}$ R: $\{1,2,3,4\}$

c) D: $\{1,2,3,9,11\}$ R: $\{-5,-2,0,4,5,20\}$

x	1	2	2	3	9	11
y	-5	-2	0	5	4	20

2) For each of the relations above, state whether they are functions.

a) no b) yes c) no

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

a) $y = -x + 8$ m = -1 b = 8

b) $x = 8$ m = und b = none.

c) $y = \frac{1}{2}x + 7$ m = $1/2$ b = 7

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) Write the following in SLOPE-Intercept form.

a) $12x + 2y = 4$

$-12x \quad -12x$

$\frac{2y}{2} = \frac{-12x+4}{2}$

$y = -6x + 2$

b) $-9x - 3y = 12$

$+9x \quad +9x$

$\frac{-3y}{-3} = \frac{9x+12}{-3}$

$y = -3x - 4$

6) For each function, determine whether the given points are solutions.

a) $y = -2x + 3; (1, 0)$

not

$0 = -2(1) + 3$

$0 = 1$

b) $y = 5x - 7; (1, -2)$

$-2 = 5(1) - 7$

$-2 = -2$ ✓

yes.

7) Given the following points, find the equation of the line that passes through each pair of points.

a) $(-1, 2)$ & $(3, -2)$

-4 $\quad$ 4

1) $m = \frac{4}{-4} = -1$

2) $2 = -1(-1) + b$

$2 = 1 + b \rightarrow b = 1$

3) $y = -x + 1$

b) $(0, 3)$ & $(-4, 0)$

4 $\quad$ 3

1) $m = \frac{3}{4}$

2) $3 = \frac{3}{4}(0) + b$

$3 = b$

3) $y = \frac{3}{4}x + 3$

8) There are now two special points we can use to graph lines. They are of the form of $(0, y)$ and $(x, 0)$. What are their names? Be specific!

y-intercept ↵ ↳ x-inter.

9) Find the x- and y- intercept of the following

a) $4x + 6y = 12$

$4x = 12 \quad 6y = 12$

$x = 3 \quad y = 2$

x	y
0	2
3	0

(0, 2)
(3, 0)

b) $2y - 10x = 20$

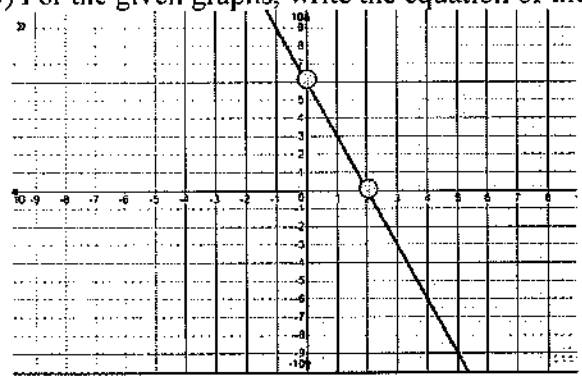
$2y = 20 \quad -10x = 20$

$y = 10 \quad x = -2$

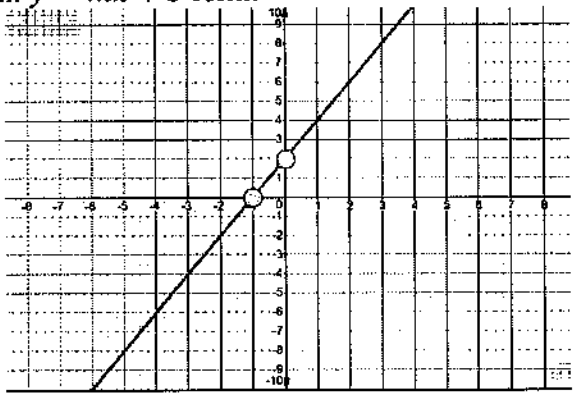
x	y
0	10
-2	0

(0, 10)
(-2, 0)

10) For the given graphs, write the equation of the line in $y = mx + b$ form.



$\frac{-6}{2} \quad y = -3x + 6$



$y = 2x + 2.$

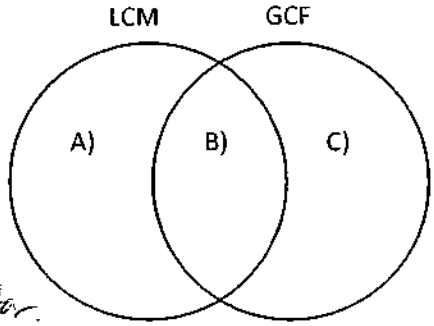
Name: Key
1/13/2017 14
PreAlgebra Quiz ~~13~~ (5th hour)

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.

2) Write the fraction in simplest form. Show all your work!

a) $\frac{28}{30}$ $\frac{14}{15}$

b) $\frac{12}{21}$ $\frac{4}{7}$

3) Write the fraction in simplest form. Show all your work!

a) $\frac{24x^{11}}{18x^3}$ $\frac{4x^8}{3}$

b) $\frac{75x^2y^3}{245xy^8}$ $\frac{15x}{49y^5}$

4) What does IRS stand for? internal revenue service.

5) Match the following forms with their definitions

C	W-2	A. form used by employees to inform employers of exemptions
A	W-4	B. form used to report income to the state
D	1040	C. form used by employers to report income paid to an employee
B	ND-1	D. form used to report income to the IRS

6) Write the fractions in simplest form. Test whether they are equivalent.

a) $\frac{39}{72}, \frac{26}{48}$ $\frac{13}{24}$ $\frac{13}{24}$ (=)

b) $\frac{4}{5}, \frac{16}{20}$ $\frac{4}{5}$ (=)

Name: Key

1/20/2017 15

PreAlgebra Quiz ~~14~~ (5th hour)

1) Use the LCD to determine which fraction is greater.

a) $\frac{13}{20}, \frac{23}{46}$ — $20 = 2^2 \cdot 5$, $46 = 2 \cdot 23$, $2^2 \cdot 5 \cdot 23 = 460$; $\frac{299}{460}$ $\frac{230}{460}$

b) $\frac{17}{18}, \frac{19}{21}$ — $18 = 2 \cdot 3^2$, $21 = 3 \cdot 7$, $2 \cdot 3^2 \cdot 7 = 126$; $\frac{119}{126}$, $\frac{114}{126}$

2) Find the LCM of the numbers.

a) 24, 20 — $24 = 2^3 \cdot 3$, $20 = 2^2 \cdot 5$, $2^3 \cdot 3 \cdot 5 = 120$

b) 28, 36 — $28 = 2^2 \cdot 7$, $36 = 2^2 \cdot 3^2$, $2^2 \cdot 3^2 \cdot 7 = 252$

3) Find the LCM of the monomials.

a) $8x, 18x^2$ — $8 = 2^3 x$, $18 = 2 \cdot 3^2 \cdot x^2$, $2^3 \cdot 3^2 \cdot x^2 = 72x^2$

b) $24x^3, 32x^2$ — $24 = 2^3 \cdot 3 x^3$, $32 = 2^5 x^2$, $2^5 \cdot 3 \cdot x^3 = 96 \cdot x^3$

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

Negative Exponent Rule: When an exponent is negative, you have to reciprocate the base to make it positive.

Zero Exponent Rule: Anything with an exponent of zero is 1.

5) Multiply/divide the following expressions.

a) $5x^2 * 3x^{-8}$ — $\frac{15}{x^6}$

b) x^0 — 1

6) Multiply/divide the following expressions.

a) $2x^9 * 6x^{14}$ — $12x^{23}$

b) $4x^7y^3 * 9x^2y^5$ — $36x^9y^8$

Name: Key
1/27/2017
PreAlgebra Quiz 16 (5th hour)

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

b) Zero Exponent Rule: Anything with an exponent of zero is 1.

c) Negative Exponent Rule: When an exponent is negative, you have to reciprocate the base to make it positive.

3) Multiply/divide the following expressions.
a) $2x^{-9} * 6x^{-14}$ $\frac{12}{x^{13}}$

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

4) Multiply/divide the following expressions.
a) $\frac{15x^9y^5}{20x^4y^9}$ $\frac{3x^5}{4y^4}$

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

5) Multiply/divide the following expressions.
a) $2x^5 * 9x^{-3}$ $18x^2$

b) 14^0 1

6) Multiply/divide the following expressions.
a) $(4x^{-4}y^5)^{-3}$ $\frac{x^{12}}{4^3y^{15}}$

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

Name: Key
2/9/2017
PreAlgebra Quiz 17 (5th hour)

1) 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.

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

a) dJ decijoule	b) km kilometer
c) microsecond μs	d) millijoule mJ

3) Write the following numbers in scientific notation.

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

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 numbers. Write your answer in scientific notation.

a) $(8.56 * 10^{-5})(3.29 * 10^{29})$
$28.16 \times 10^{24} = 2.816 \times 10^{25}$

b) $\frac{3.69*10^{9}}{6.98*10^{-3}}$ $.5287 \times 10^{12}$
5.287×10^{11}

7.23×10^{2}

6) One Step Conversions

a) 0.0723 kJ to J $\frac{10^{3}\ J}{1\ kJ} = 7.23 \times 10^{2}\ J$

b) 445 s to ms
$\frac{4.45 \times 10^{2}\ s}{1\ s} \cdot \frac{10^{3}\ ms}{}$
$4.45 \times 10^{5}\ ms$

Name: Key 2/17/2017 PreAlgebra (5th Hour) Quiz 18

1) 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 number on the line.

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

a) mg milligram | b) hL hecto liter

c) picowatt pW | d) centimeter cm.

3) Two Step Conversions

a) 936800 dm to Mm $9.368\times10^{5}\,dm \left|\frac{1\,m}{10\,dm}\right|\frac{1\,Mm}{10^{6}\,m} = 9.368\times10^{-2}\,Mm$

b) 587.1 Mg to µg $5.871\times10^{2}\,Mg \left|\frac{10^{6}\,g}{1\,Mg}\right|\frac{10^{6}\,\mu g}{1\,g} = 5.871\times10^{14}\,\mu g$

4) 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 $263500\,weeks \left|\frac{7\,days}{1\,week}\right. = 1.845\times10^{6}\,days$

5) 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}

6) One Step Conversions

a) 15.2 µg to g $15.2\,\mu g \left|\frac{1\,g}{10^{6}\,\mu g}\right. = 1.52\times10^{-5}\,g$

b) 9368 m to Mm $9.368\times10^{3}\,m \left|\frac{1\,Mm}{10^{6}\,m}\right. = 9.368\times10^{-3}\,Mm$

Name: Key 3/3/2017 PreAlgebra (5th Hour) Quiz 19

1) Solve the following proportions. Show your work!

a) $\frac{x}{13} = \frac{30}{65}$ $13 \cdot 30 \div 65 = 6$

b) $\frac{5}{11} = \frac{x}{110}$ $5 \cdot 110 \div 11 = 50$

2) McKenna buys six pencils for $8. How many pencils can she buy for $20?

$\frac{6}{8} = \frac{x}{20}$ $x = 15$ pencils.

3) Mr. Peterson is going on a vacation. He is going to drive 4500 miles around North Dakota. During his first 3 days driving, he went 1500 miles. If he drives at that same rate, how many days will it take him to make the entire trip?

$\frac{4500}{x} = \frac{1500}{3}$ $x = 9$ days.

4) Solve the following proportions.

a) $\frac{36}{54} = \frac{18}{x+5}$ $54 \cdot 18 / 36 - 5$ $x = 22$

b) $\frac{39}{x-7} = \frac{21}{7}$ $39 \cdot 7 \div 21 + 7$ $x = 20$

5) Name the corresponding angles and the corresponding sides.

$\Delta ABC \sim \Delta DEF$

$\angle A = \angle D$ $AB \sim DE$
$\angle B = \angle E$ $AC \sim DF$
$\angle C = \angle F$ $BC \sim EF$

6) What does it mean to be similar?

Same shape, diff size

Name: Key 3/10/2017 PreAlgebra (5th Hour) Quiz 20

1) Solve the following proportions.

a) $\frac{49}{56} = \frac{12}{x+5}$ $49(x+5) = 672$ $49x + 245 = 672$. $x = 8.71$

b) $\frac{34}{x-5} = \frac{46}{23}$ $46(x-5) = 782$. $46x - 230 = 782$. $x = 22$

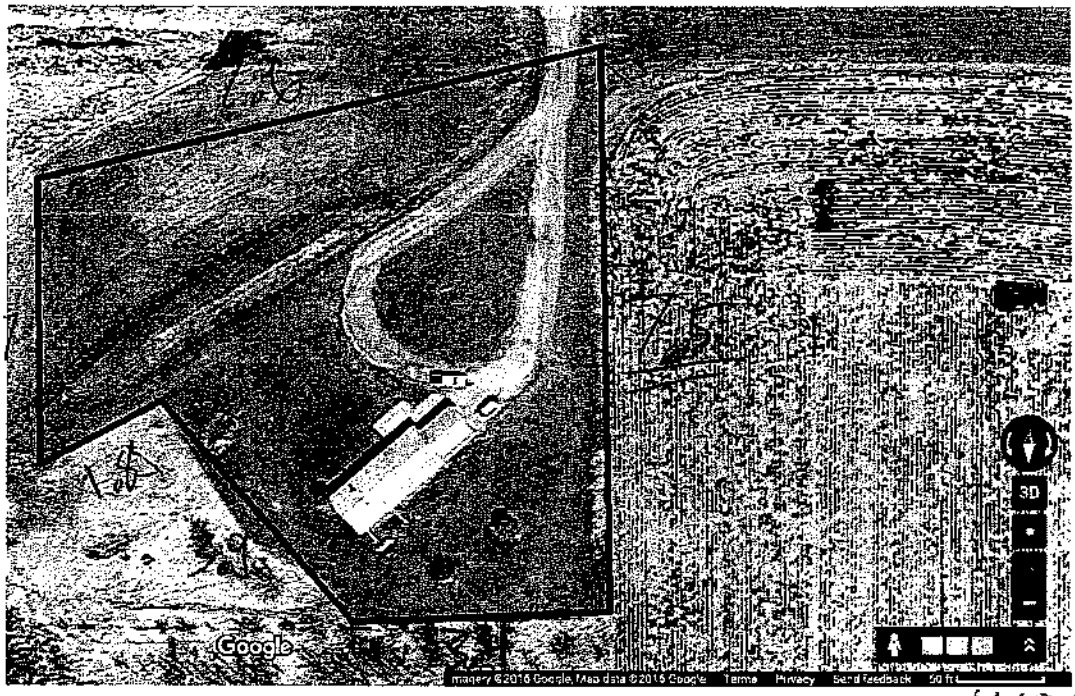
2) Given the scale of a map is: $1cm : 4miles$ find the equivalent lengths for either the map or actual.

a) $2.5cm$ $\frac{1}{4} = \frac{2.5}{x}$ $x = 10mi$

b) $2.5miles$ $\frac{1}{4} = \frac{x}{2.5}$ $x = .625cm$.

3) Christian is standing next to the building. Christian stands 6' tall and casts a shadow 4.5' long. If the building is casting a 75' shadow, how tall is the building?

$\frac{6}{4.5} = \frac{x}{75}$ $x = 100ft$



4) Above is my neighbor's house. Use the scale in the corner to determine how much fence would be needed to fence in my neighbor so he cannot escape. Assume you are only putting one strand of barb wire around for now. $7.6 + 7.5 + 3.4 + 3.9 + 1.8 + 3.7 = 27.9$

$\frac{1.1}{50} = \frac{27.9}{x}$ $x = 1268ft$.

b) How many miles of wire do you need if you put 3 strands of around? 3804 ft.

c) If each rolls comes with ¼ mile of wire, how many rolls do you need? 3

d) If each roll costs you $50, how much do you pay?

$150

Name: key 3/16/2017 PreAlgebra (5th Hour) Quiz 21

1) Mr. Peterson has 4 pairs of socks, 2 pairs of shoes, 3 shirts, and 5 pairs of pants. How many different wardrobes can he make from these?

$4 \cdot 2 \cdot 3 \cdot 5$ (120) wardrobes.

2) If you roll a dice, what is the probability that you will get a multiple of 3?

$2/6 \rightsquigarrow 33\%$

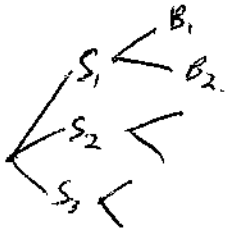
3) If you roll a dice and flip a coin, what is the probability that you roll a 2 and flip a head?

$\frac{1}{6} \cdot \frac{1}{2} = \frac{1}{12}$

4) Will is hunting ducks. He has 3 different shotguns to choose from and 2 different shells for each.
a) Make a tree diagram for his weapon of choice.
b) How many different combinations does he have to choose from?
Bonus: What 3 type of shotgun might he have?

$3 \cdot 2 = 6$

20 gauge
12 gauge
4-10



5) Write 3 of your own probability problems and solve them yourself.

a) Make a spinner problem

b) Make a dice problem.

c) Create your own story.

Name: Key 3/31/2017 PreAlgebra (5th Hour) Quiz 23

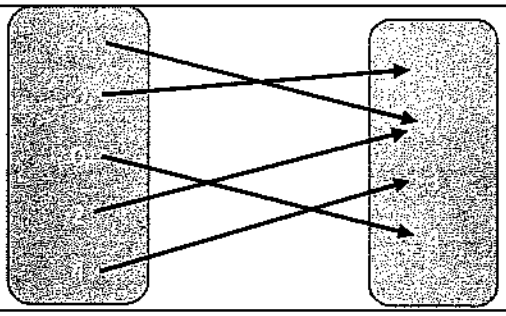
1) Find the domain and range of the following.

a) {(-5, -3), (-3, -5), (2, -3), (-5, 0), (0, 0)}

D: {-5, -3, 0, 2}

R: {-5, -3, 0}

b)



D: {-4, -2, 0, 2, 4}

R: {1, 2, 3, 4}.

2) For the sets of data above,
a) Represent them as a table.
b) Are they functions?

X	Y
-5	-3
-5	0
-3	-5
0	0
2	-3

no

X	Y
-4	2
-2	1
0	4
2	2
4	3

yes

3) For each function, determine whether the given points are solutions.

a) $y = 8x + 3$; (0, 3) yes

$3 = 8(0) + 3$

$3 = 3$

b) $y = -x - 7$; (5, 2)

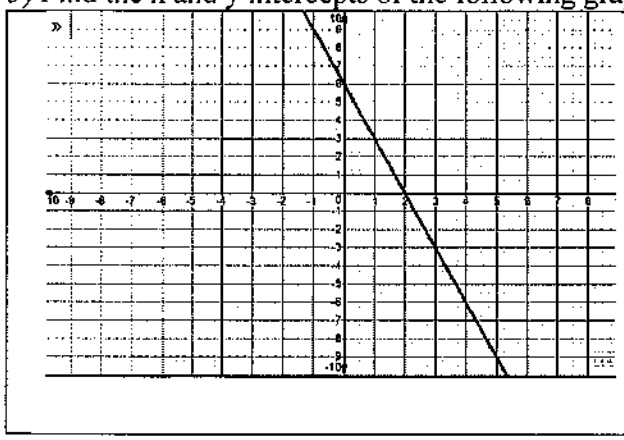
$2 = -(5) - 7$

$2 = -12$ No

4) From function notation, how do you say the function notation of "$f(x)$"?

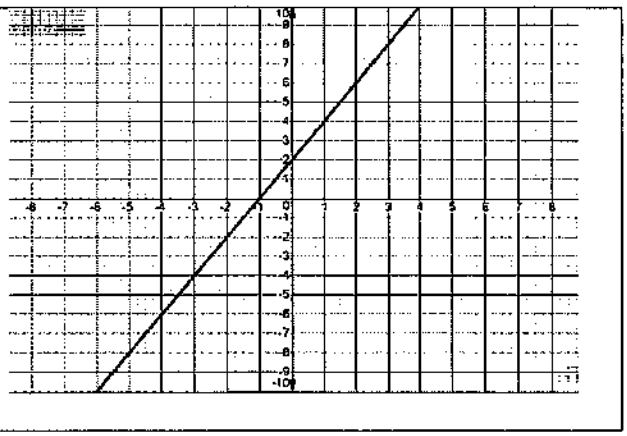
f of x.

5) Find the x and y intercepts of the following graphs.



X-inter: (2, 0)

y-inter: (0, 6)



X-inter: (-1, 0)

y-inter: (0, 2).

Name: Key 4/7/2017 PreAlgebra (5th Hour) Quiz 24

1) Find the x- and y- intercept of the following

a) $y = 8x + 3$ | b) $y - x = -7$

$0 = 8x + 3$, $-3 = 8x$

x	y
0	3
$-\frac{3}{8}$	0

$(0, 3)$ $\left(-\frac{3}{8}, 0\right)$

x	y
0	-7
7	0

x-intercept

2) There are now two special points we can use to graph lines. They are of the form of $(0, y)$ and $(x, 0)$. What are their names? Be specific!

y-intercept

3) For each function, determine whether the given points are solutions.

a) $y = 5x + 3$; $(1, 3)$ | b) $y = 2x - 7$; $(5, 3)$

$3 = 5(1) + 3$

$3 = 8$ X not a soln

$3 = 2(5) - 7$ Sdn

$3 = 10 - 7$

$3 = 3$ ✓

4) Find the x- and y- intercept of the following

a) $2x + 3y = 12$ | b) $5y - 4x = 20$

$\frac{3y}{3} = \frac{12}{3}$ $2x = 12$

x	y
0	4
6	0

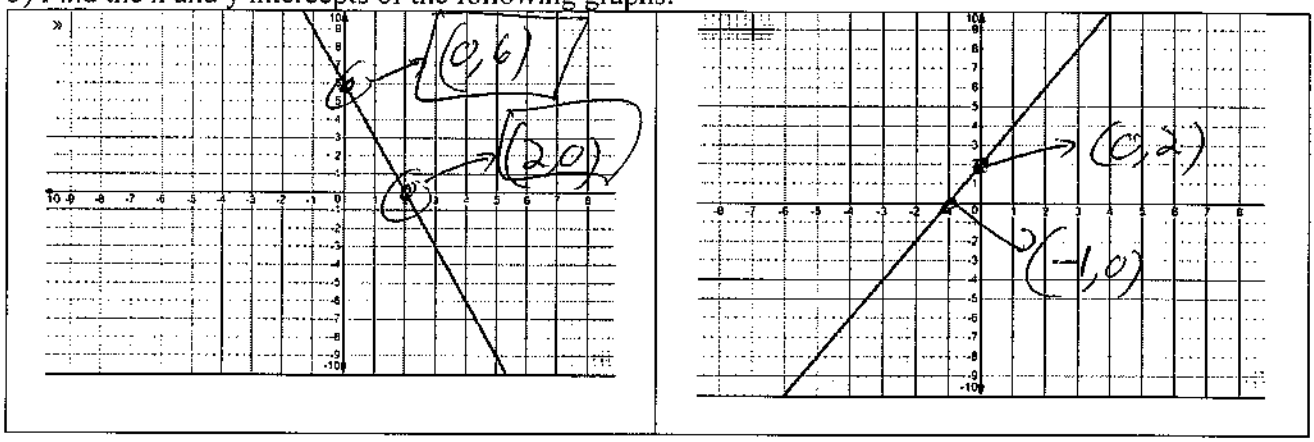
$(0, 4)$ $(6, 0)$

$5y = 20$ $-4x = 20$

x	y
0	4
-5	0

$(0, 4)$ $(-5, 0)$

5) Find the x and y intercepts of the following graphs.



Name: Key 4/13/2017 PreAlgebra (5th Hour) Quiz 25

1) Find the x- and y- intercept of the following

a) $y = 2x + 4$ $(-2, 0)$

$0 = 2x + 4$
$-4 \quad -4$ ⇝ $2x = -4$ $(0, 4)$
$x = -2$

b) $y + x = -5$ $(0, -5)$ $(-5, 0)$

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

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

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

a) $(2, 3)$ & $(4, -5)$

$-5 - 3 = -8$
$4 - 2 = 2$

Slope $= -4$

b) $(-1, 0)$ & $(3, 10)$

$10 - 0 = 10$
$3 - -1 = 4$ ⇝ $\frac{5}{2}$

4) Find to points that are on the following lines. Then, find the slope of the lines.

a) $2x + 3y = 12$

x	y
0	4
6	0

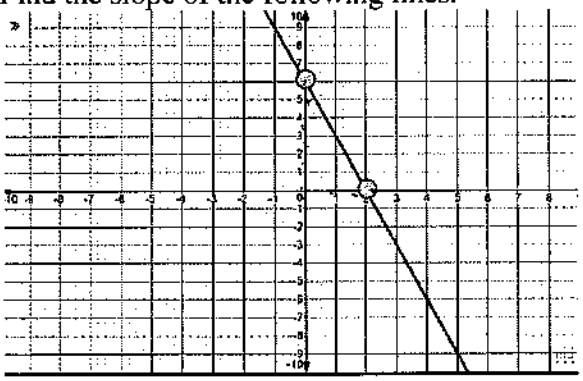
$\frac{4}{-6} \rightsquigarrow \frac{2}{-3}$

b) $5y - 4x = 20$

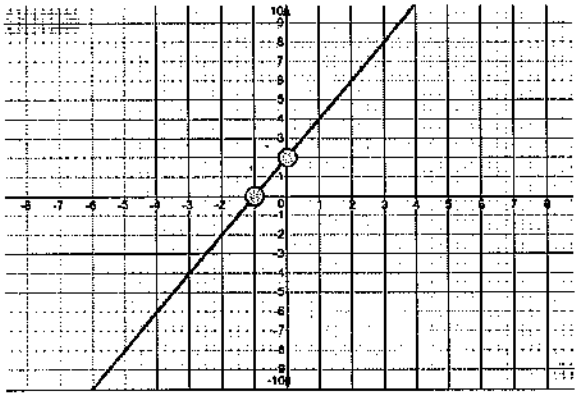
x	y
0	4
-5	0

$\frac{4}{5}$

5) Find the slope of the following lines.



$\frac{-6}{2} = -3$



$\frac{2}{1} = 2$

Name: Key 4/21/2017 PreAlgebra (5th Hour) Quiz 26

1) For the equation of a line $y = mx + b$. What is the m and the b?

m → slope

b → y-intercept.

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

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

3) Given the following information, write the equation of the line.

a) slope $= -2$ and y-intercept $= 1$

$y = -2x + 1$

b) slope $= 0$ and y-intercept $= -2$

$y = 0x - 2$

$y = -2$

4) Find two points that are on the following lines. Then, find the slope of the lines.

a) $4x - 6y = 12$

x	y
0	-2
3	0

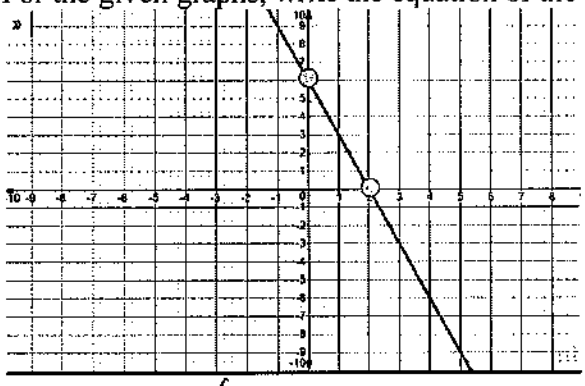
$\frac{2}{3}$

b) $2y + 10x = 20$

x	y
0	10
2	0

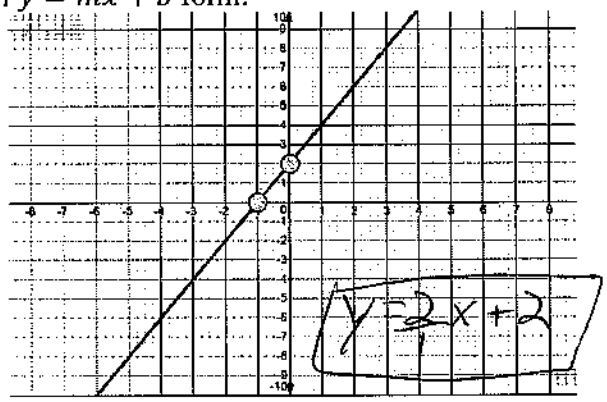
$\frac{-10}{2} = -5$

5) For the given graphs, write the equation of the line in $y = mx + b$ form.



$y = \frac{-6}{2}x + 6$

$y = -3x + 6$



$y = 2x + 2$

6) Graph the lines from #3.