Name: Key PreAlgebra – Semester Test (7th Hour) 12/16/2016

1) 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

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

(3)

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.

(2)

B	$a * b = b * a$	A) Distributive Property
C	$1 * x = x$	B) Commutative Property of Multiplication
D	$(ab)x = a(bx)$	C) Identity Property of Multiplication
A	$a(b + c) = ab + ac$	D) Associative Property of Multiplication

(4) 4) Multiply/divide the following expressions.

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

(4) 5) Find the GCF of the following numbers.

a) 32, 28 $32 = 2^5$, $28 = 2^2 \cdot 7$, $2^2 = 4$ | b) 45, 50 $45 = 3^2 \cdot 5$, $50 = 2 \cdot 5^2$ (5)

(6) 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) $5(x + 2) + 1 < 7 - 5x$ $5x + 10 + 1 < 7 - 5x$ $+5x \quad -11 \quad -11 + 5x$ $10x < -4$ $x < -\frac{2}{5}$

(4) 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.

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

a) From $10°F$ to $-11°F$ $-21°F$ | b) From $120ft$ to $1200ft$ 1080 ft.

(2) 9) Evaluate the following absolute values:

a) $|-4|$ 4 | b) $|-1| + 9$ $= 10$

(4) 10) Simplify the following expressions by combining like terms.

a) $5x + 10y + 7y - 12x$ $-7x + 17y$ | b) $-2x + 11 + 10x$ $8x + 11$

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

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

(2) 12) What quadrant is each letter in?

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

(2) 13) Find the difference of the following expressions:

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

(2) 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? $15x = 45$, $x = 3$ ft.

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

a) $\frac{a+11}{6}$ $\frac{-5+11}{6} = \frac{6}{6} = 1$

b) $a[(b-a)^2 + 5]$ $-5[(7-(-5))^2+5]$ $= -5(144+5)$ $-5(149) = -745$

(6) 16) Solve the following equations.

a) $\frac{x}{12} - 7 = 17$ $+7 \quad +7$ $12 \cdot \frac{x}{12} = 24 \cdot 12$ $x = 288$

b) $12x - 25 = 29$ $+25 \quad +25$ $\frac{12x}{12} = \frac{54}{12}$ $x = 4.5$

17)

(4) Translate the following into equations:

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

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

Write the following in words.

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

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

(4) 18) Multiply/divide the following expressions.

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

b) $\frac{8x^{-7}}{9x^{14}}$ $\frac{8}{9x^{21}}$

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

a) $a + (-23)$ 10 $= -13$

b) $-b - a$ $-(-5) - 10 = -5$

(4) 20) Find the LCM of the following monomials:

a) $16x^2, 36x$ $16 = 2^4$, $36 = 2^2 \cdot 3^2$ $2^4 \cdot 3^2 x^2 = 144x^2$

b) $12x^2y, 15xy^2$ $12 = 2^2 \cdot 3$, $15 = 3 \cdot 5$ $2^2 \cdot 3 \cdot 5 = 60x^2y^2$

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

a) $63 = 3^2 \cdot 7$

b) $120 = 2^3 \cdot 3 \cdot 5$ (10, 12)

(2) 22) 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.

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

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

$3x - 7 = 8 + 6x + 12$

$3x - 7 = 6x + 20$

$-3x - 20 \quad -3x - 20$

$-27 = 3x$

$x = -9$

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

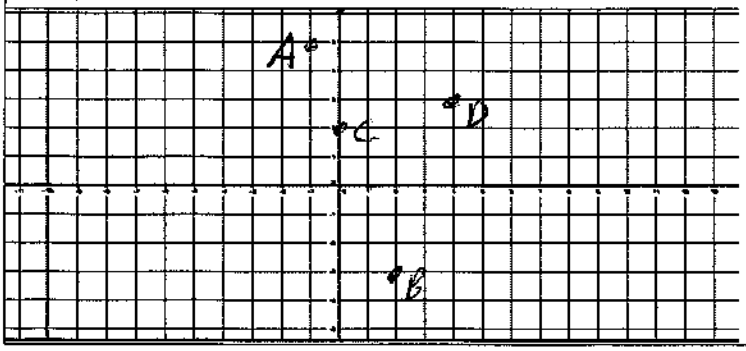
$8x = 8x + 4$

$0 = 4$

no soln

Key

Pre Algebra (7th hour)

1A) 3^2				**12A)** II	**12B)** IV
1B) 3 squared				**12C)** Bin I+II	**12D)** I
1C) 3 to the 2nd power.				**13A)** -8	
2A) $15x, -7, 20x$	**2B)** 15, 20		**2C)** -7	**13B)** 6	
2D) $15x, 20x$		**2E)** $35x-7$		**14A)** x [5]	
3A) B		**3B)** C		**14B)** $x = 3$ ft	
3C) D		**3D)** A		**15A)** 1	
4A) $12/x^{23}$				**15B)** -745	
4B) $12x^{11}y^3$				**16A)** $x = 288$	
5A) 4				**16B)** $x = 4.5$	
5B) 5				**17A)** $12 \div y = 15$	**17B)** $5 + x = 20$
6A) no soln				**17C)** 11 plus x is 4	
6B) $x < -2/5$ ~~$x > -2/5$~~				**17D)** 20 times x is 10	
7A) 5 times x minus 3				**18A)** $3x^5/4y^4$	
7B) 2 times the diff. of x and 7.				**18B)** $9/9x^{21}$	
8A) $-21°F$				**19A)** -13	
8B) 1080 ft				**19B)** -5	
9A) 4				**20A)** $144x^2$	
9B) 10				**20B)** $60x^2y^2$	
10A) $-7x + 17y$				**21A)** $3^2 \cdot 7$	
10B) $8x + 11$				**21B)** $2^3 \cdot 3 \cdot 5$	
11) 				**22A)** letter, exponent	
				22B) variable	
				23A) $x = -9$	
				23B) no soln.	

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

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

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

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

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

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

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

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

4) Simplify the following and write your answer in scientific notation.

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

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

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

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

5) Give the name of the following units.
a) dJ decijoule
b) km kilometer
c) mg milligram
d) hL hektoliter

6) Give the abbreviation of the following units.
a) picowatt pW
b) centimeter cm
c) microsecond μs
d) millijoule mJ

7) One Step Conversions

a) 0.0723 kJ to J

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

b) 445 s to ms

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

c) 15.2 μg to g

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

d) 9368 m to Mm

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

8) Two Step Conversions

a) 936800 dm to Mm

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

b) 587.1 Mg to μg

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

c) 319000 cL to ML

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

d) 0.4744 nJ to μJ

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

9) Basic Conversions

a) 28.68 c to gal

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

b) 263500 weeks to days

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

c) 0.004279 g to lbs

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

d) 0.3694 m to ft

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

10) Write the following in scientific notation.

a) 1234 1.234×10^{3}

b) 9876000 9.876×10^{6}

c) 0.06543 6.543×10^{-2}

d) 0.003985 3.985×10^{-3}

11) Write the following in standard form:

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

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

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

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

Name: 2/28/2017 PreAlgebra (7th Hour) – Test 5

1) Write each of the following as a fraction to show they are rational numbers.

(4)

a) $1\frac{5}{6}$ $\frac{11}{6}$

b) 0.91 $\frac{91}{100}$

c) $3\frac{2}{3}$ $\frac{11}{3}$

d) 14 $\frac{14}{1}$

2) For the steps of adding and subtracting fractions, fill in the following blanks.

(3)

1) Get everything in fraction form.
2) Find a common denominator using the LCM.
-Multiply the top and bottom by what is missing.
3) Add/subtract the tops as normal.
4) Simplify the fraction.

3) For the steps of **dividing** fractions, fill in the following blanks.

(4)

1) Get everything in fraction form.
2) Reciprocate the fraction after the division sign.
3) Multiply as normal
a) Factor the numerators and denominators
b) Cross off things that are on both the top and bottom
c) Multiply the tops and the bottoms

4) Add/subtract the following fractions.

(4)

a) $\frac{3}{5}-\frac{7}{5}$ $\frac{-4}{5}$

b) $\frac{1}{8}-2\frac{3}{8}+4\frac{5}{8}$ $2\frac{3}{8}$

5) Add/subtract the following fractions.

(6)

a) $\frac{1}{24}-\frac{3}{18}$ $\frac{3-12}{72}=\frac{-9}{72}=\frac{-1}{8}$

b) $\frac{13}{28}-\frac{7}{12}$ $\frac{39-49}{84}=\frac{-10}{84}=\frac{-5}{42}$

6) Write the decimal/fractional equivalence of the following.

(4)

a) $\frac{3}{4}$ .75

b) $\frac{2}{5}$ .4

c) .125 $\frac{1}{8}$

d) .5 $\frac{1}{2}$

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Eliminating fractions.

7) Write the decimal/fractional equivalence of the following.

(4) (6) a) $\frac{5}{6}x + \frac{2}{9} = -\frac{7}{12}$ · 4·9 $30x + 8 = -27$

$30x = -35$

$x = -\frac{7}{6}$

b) $-\frac{31}{4} < -13 + \frac{7}{8}x$ · 8

$-62 < 104 + 7x$

$+104 \quad +104$

$\frac{42}{7} < \frac{7x}{7}$

$x > 6$

8) Add/subtract the following fractions.

(6) $\frac{9}{2}$ a) $\frac{2}{9}x = 12 + \frac{9}{2}$

$X = 54$

b) $\frac{7}{11}x - 17 = 4$

$+17 \quad +17$

$\frac{11}{7} \cdot \frac{7}{11} x = 21 \cdot \frac{11}{7}$

$X = 33$

9) Divide the following fractions.

(6) a) $\frac{14}{4} \div \frac{18}{20}$

$\frac{14}{4} \cdot \frac{20}{18} = \frac{35}{9} = 3\frac{8}{9}$

b) $2\frac{3}{7} \div 1\frac{1}{7}$

$\frac{17}{7} \cdot \frac{7}{8} = \frac{17}{8} = 2\frac{1}{8}$

10) Multiply the following fractions.

(6) a) $\frac{28}{4} \cdot \frac{12}{7}$ 12

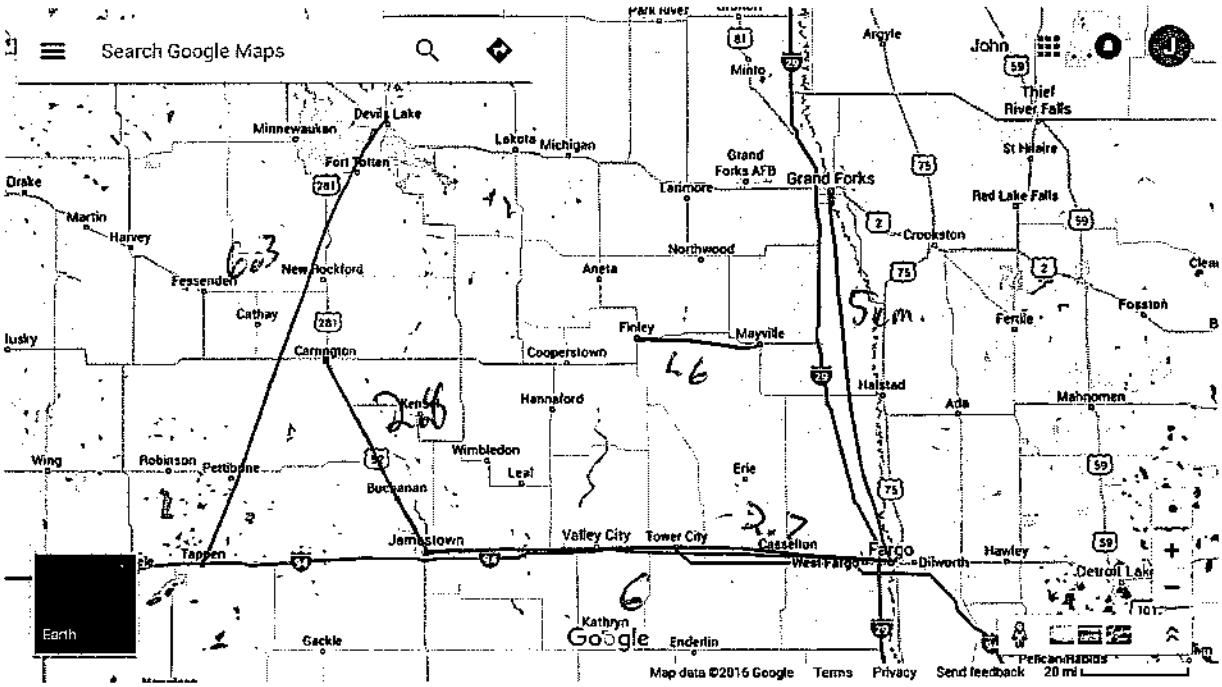
b) $3\frac{1}{8} * 6\frac{5}{8}$

$\frac{25}{8} \cdot \frac{53}{8} = \frac{1325}{64}$ $20\frac{45}{64}$

$= 20\frac{51}{64}$

Name: Key 3/22/2017 PreAlgebra (7th Hour) – Test 6

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



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

(10) b) Taking i94 and 29 north, how far is it from Valley City to Grand Forks? $\frac{1.4}{20} = \frac{11}{x}$ 157mi

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

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

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

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

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) $\frac{110}{65} = 1.7$ hr

2) Solve the following proportions. (8)

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

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

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

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

3) Name the corresponding angles and the corresponding sides. (3)

$\Delta ABC \sim \Delta DEF$

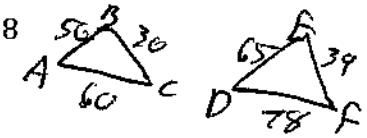
$\angle A = \angle D$ $\quad AB \sim DE$

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

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

4) Draw and label two triangles using following information (3)

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



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

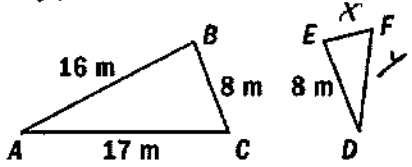
30:39 → 10:13 (+1)

5) What does it mean to be similar? (2)

same shape, diff size (maybe).

6) Using the triangles on the right, find FE and FD. (4)

$\Delta ABC \sim \Delta DEF$



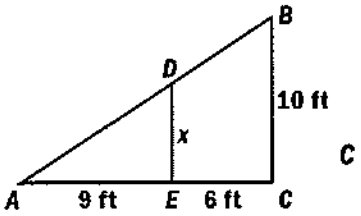
$\frac{8}{16} = \frac{x}{8}$ $\quad x = 4\text{ m}$ $\quad \frac{17}{16} = \frac{y}{8}$

$y = 8.5\text{ m}$

7) Using the triangles on the right, find x. $\Delta ABC \sim \Delta ADE$ (3)

$\frac{x}{10} = \frac{9}{15}$

$x = 6\text{ ft}$



8) Nik is standing next to a billboard sign. Nik 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)

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

9) Write each of the following scales without units (8)

a) $1in:5ft$ $\quad \frac{12\text{ in}}{1\text{ ft}} = 60$ 1:60

b) $1cm:1m$ 1:100

c) $1cm:5ft$ $\quad \frac{12\text{ in}}{\text{ft}} \cdot \frac{2.54\text{cm}}{1\text{ in}}$

1:152.4

d) $1in:20mil$ $\quad \frac{5280\text{ ft}}{1\text{ mil}} \cdot \frac{12\text{ in}}{1\text{ ft}}$

1:1267200

Name: 4/18/2017 PreAlgebra (7th Hour) – Test 7

1) Convert the following factions and decimals to percentages. Convert the following percentages to decimals. Keep one decimal place in all your answers.

a) 3/8 37.5%
b) ¼ 25%
c) .698 69.8%
d) 74.3% .743
e) .00062 .062%
f) 1/3 33.3%
g) 1/5 20%
h) 2.98% .298
i) 5/6 83.3%

2) Find the percent of change in the following problems. Keep one decimal place in all your answers

a) 46 is increased to 54 $\frac{54-46}{46} = 17.4\%$
b) Milk priced went from \$3.98 to \$4.78 $\frac{4.78-3.98}{3.98} = 20.1\%$
c) 37 is decreased to 25 $\frac{25-37}{37} = -32.4\%$
d) Propane has gone from \$3.99 to \$1.69 $\frac{1.69-3.99}{3.99} = -57.6\%$

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

a) What is 10% of 40? $x = .1 \cdot 40 = 4$
b) What is 27% of 102? $x = .27 \cdot 102 = 27.54$
c) 56 is what percent of 70? $\frac{56}{70} = \frac{x \cdot 70}{70}$ $x = 80\%$
d) 65 is what percent of 75? $\frac{65}{75} = \frac{x \cdot 75}{75}$ $x = 86.7\%$
e) 15 is 75% of what number? $\frac{15}{.75} = \frac{.75 \cdot x}{.75}$ $x = 20$
f) 46 is 35% of what number? $\frac{46}{.35} = \frac{.35 \cdot x}{.35}$ $x = 131.4$

4) The simple interest formula is given by: I=P*r*t. State what each letter represents and the units that go with it.

I → interest $
P → principal $
r → rate %
t → time (years)

Application problems!!

5) Calculate the sales tax AND the final price paid for the following purchases. When you see the symbol (@) it means "at this price per item."

a) Total Sales: $250
Tax Rate: 9.5% $250 \cdot .095$
Tax: $ 23.75
Total: $ 273.75

b) Original Price: $500
Discount rate: 30% $500 \cdot .3 = 150$
New Price: $ 350

c) Bought:
2 Books @ $10 20
5 cans of soup @ $2 $\frac{10}{30}$
Tax Rate: 10% $\cdot .1$
Tax: $ 3
Total: $ 33

d) Bought:
Star Wars VI @ $25
3 Shirts @ $15 $\frac{45}{70}$
Tax Rate: 9% $\cdot .09 = 6.3$
Tax: $ 6.3
Total: $ 76.3

6) Dawson invested $800 into a savings account that earns 7% interest. If he leaves the money in the account for 7 years, how much interest does he make? How much money does he have now?

$I = (800)(.07)(7) = \$392$ Total $= \$1192$

7) Kiara earned $75 on a savings account that earned 6% interest. If she had left her money in the account for 3 years, how much did she originally invest in the account? How much money does she have now?

$75 = P(.06)(3)$
$\frac{75}{.18} = \frac{.18P}{.18}$
$P = \$416.67$ Total $= \$491.67$

8) Jocelynn invested $7,000 in a savings account and earned $68 over 2 years. What was the interest rate she was earning? How much money does she have now?

$68 = 7000(r)(2)$
$\frac{68}{14000} = \frac{14000r}{14000}$
$r = .49\%$ 7068

9) Evan has $950, but he wants $1,000. The money is in a savings account that earns **0.08%**. How long does he have to leave his money in the account? (HINT: How much does he need to make in interest?)

$50 = 950(.0008)(t)$ $t =$ 65.8 years

10) The following are compounded yearly. Find the total amount in the account.

$P = 2000$	$P = 5000$
$r = 10\%$	$r = 1\%$
$t = 4$ *years*	$t = 5$ *years*

$A = 2000(1+.1)^4$
$\$2928.2$

$A = 5000(1+.01)^5$
$= \$5255.05$

Name: key
1/13/2017
PreAlgebra Quiz ~~13~~ 14 (7th Hour)

1)
a) What is the product rule? ~~work~~ when multiplying with the same base, keep the base and add the exponents.

b) What is the quotient rule? subtract exponents

c) What is the power rule? ~~multiply~~ e "power to a power, multiply"

d) What do you do with a negative exponent to write it as a positive exponent? reciprocate.

e) Anything with an exponent of zero is 1.

2) Multiply/divide the following expressions.
a) $9^2 * 9^6$ 9^8 c) $\frac{10^3}{10^{-5}}$ 10^8

3) Multiply/divide the following expressions.
a) $3x^5 * 9x^{-14}$ $\frac{27}{x^9}$ c) $\frac{3x^5}{9x^{14}}$ $\frac{1}{3x^9}$

4) Write the following numbers in scientific notation.
a) 0.000064 6.4×10^{-5} b) 1700 1.7×10^3

5) Multiply/divide the following numbers. Write your answer in scientific notation.
a) $(4.78 * 10^{-5})(3.14 * 10^{-31})$ 15×10^{-35} b) $\frac{1.5*10^{-9}}{5.25*10^{-3}}$ 2.86×10^{-7}

6) 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

7) What does IRS stand for? Internal reveune service.

Name: Key
1/20/2017 /15
PreAlgebra Quiz 14 (7th Hour)

1) Fill in the blanks:

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

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

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

d) What do you do with a negative exponent to write it as a positive exponent? reciprocate.

e) Anything with an exponent of zero is 1.

f) With scientific notation, you only want 1 digit/s in front of the decimal.

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

a) $\frac{x^7y^8}{x^2y^{10}}$ $\frac{x^5}{y^2}$

b) $\frac{26x^{-5}}{13x^{-13}}$ $2x^8$

$-5+13$

3) Write the following numbers in standard form.

a) $4.89 * 10^{-5}$ .0000489

b) $3.12 * 10^3$ 3120

4) Write the following numbers in scientific notation.

a) 46200000 4.62×10^7

b) 0.00000045 4.5×10^{-7}

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

a) $(5.4 * 10^4)^5$

4592×10^{20}

4.592×10^{23}

b) $\frac{3.8*10^{19}}{6.9*10^{-24}}$

$.5507 \times 10^{43}$

5.507×10^{42}

Name: Key
1/27/2017
PreAlgebra Quiz 16 (7th 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 either the name or the abbreviation of the following units.
a) MJ megajoule
b) millimeter mm
c) dL deciliter
d) hectocandela hcd.

3) One Step conversions
a) 24.5 pm to m $\frac{1\ m}{10^{12}\ pm}$ $2.45 \times 10^{-11}\ m$
b) 0.150 s to ms $\frac{10^3}{1\ s}$ $1.5 \times 10^{+2}\ ms.$

4) Two Step conversion
a) 27200MW to kW $\frac{10^6\ W}{1\ MW} \times \frac{1\ kW}{10^3\ W}$ $2.72 \times 10^7\ kW$
b) $6.022 * 10^{23}$ pA to MA $\frac{1\ A}{10^{12}\ pA} \times \frac{1\ MA}{10^6\ A} = 6.022 \times 10^{2}\ MA.$

5) One Step conversions:
a) 7700 J to kJ $\frac{1\ kJ}{10^3\ J}$ 7.7 kJ
b) 0.00215 g to μg
$\frac{2.15\ g}{1\ g} \times \frac{10^6\ \mu g}{} = 2.15 \times 10^3\ \mu g$

Name: key
2/9/2017
PreAlgebra Quiz 17 (7th Hour)

1) Write each of the following as a fraction to show they are rational numbers.

a) $1\frac{5}{6}$ $\frac{11}{6}$

b) 0.91 $\frac{91}{100}$

c) $3\frac{2}{3}$ $\frac{11}{3}$

d) 14 $\frac{14}{1}$

2) For the steps of adding and subtracting fractions, fill in the following blanks.

1) Get everything in fraction form.
2) Find a common denominator using the LCM.
-Multiply the top and bottom by what is missing.
3) Add/subtract the tops as normal.
4) Simplify the fraction.

3) Add/subtract the following fractions.

a) $\frac{3}{5}-\frac{7}{5}$ $\frac{-4}{5}$

b) $\frac{1}{8}-2\frac{3}{8}+4\frac{5}{8}$ $\frac{1}{8}-\frac{19}{8}+\frac{37}{8}$ $\frac{19}{8}$ or $2\frac{3}{8}$

4) Add/subtract the following fractions.

a) $\frac{1}{24}-\frac{3}{18}$ $\frac{3-12}{72}=\frac{-9}{72}=\frac{-1}{8}$

b) $\frac{2}{6}-\frac{3}{16}$ $\frac{16-9}{48}=\frac{+7}{48}$

5) Add/subtract the following fractions.

a) $4\frac{1}{12}-3\frac{3}{16}$ $1\frac{4-9}{48}=1+\frac{-5}{48}=\frac{43}{48}$

b) $2\frac{2}{21}-1\frac{3}{14}=$ $1\frac{4-9}{42}$ $1+\frac{-5}{42}=\frac{37}{42}$

Name: key 2/17/2017 PreAlgebra (7th Hour) Quiz 18

1) Evaluate the expression.

$\frac{2}{3} * -\frac{3}{10} + \frac{2}{15}$ $\quad \frac{3}{5} + \frac{2}{15}$ $\quad \frac{-9+2}{15} = \frac{-7}{15}$

2) For the steps of **dividing** fractions, fill in the following blanks.

1) Get everything in fraction form.
2) Reciprocate the fraction after the division sign.
3) Multiply as normal
   a) Factor the numerators and denominators
   b) Cross off things that are on both the top and bottom.
   c) Multiply the top and the bottoms.

3) Divide the following fractions.

a) $\frac{14}{4} \div \frac{18}{20}$ $\quad \frac{7}{4} \cdot \frac{5}{9} = \frac{35}{9} \rightsquigarrow 3\frac{8}{9}$

b) $2\frac{3}{7} \div 1\frac{1}{7}$ $\quad \frac{17}{7} \cdot \frac{7}{8} = \frac{17}{8} = 2\frac{1}{8}$

4) Multiply the following fractions.

a) $\frac{28}{4} * \frac{12}{7}$ $= 12$

b) $3\frac{1}{8} * 6\frac{5}{8}$ $\quad \frac{25}{8} \cdot \frac{53}{8} = \frac{1325}{64} \rightsquigarrow 20\frac{45}{64}$

5) Multiply the following expressions.

a) $\frac{16x}{7} * \frac{35x^3}{4}$ $\quad 20x^4$

b) $\frac{xy}{2} * \frac{2x^5y}{9}$ $\quad \frac{x^6y^2}{18}$

Name: Key 3/10/2017 PreAlgebra (7th Hour) Quiz 20

1) Solve the following proportions. Show your work!

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

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

2) Nik buys six pencils for $8. How many pencils can he 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?

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

4) Solve the following proportions.

a) $\frac{36}{54} = \frac{18}{x+5}$ $36(x+5) = 972$

$36x + 180 = 972$

$X = 22$

b) $\frac{39}{x-7} = \frac{21}{7}$ $21(x-7) = 273$

$21x - 147 = 273$

$X = 20$.

5) Name the corresponding angles and the corresponding sides.

$\Delta ABC \sim \Delta DEF$

$\angle A = \angle D$ $AB \sim DE$

$\angle B = \angle E$ $BC \sim EF$

$\angle C = \angle F$ $AC \sim DF$

6) What does it mean to be similar?

Same shape, diff. size.

Name: Key 3/16/2017 PreAlgebra (7th Hour) Quiz 21

1) Solve the following proportions.

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

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

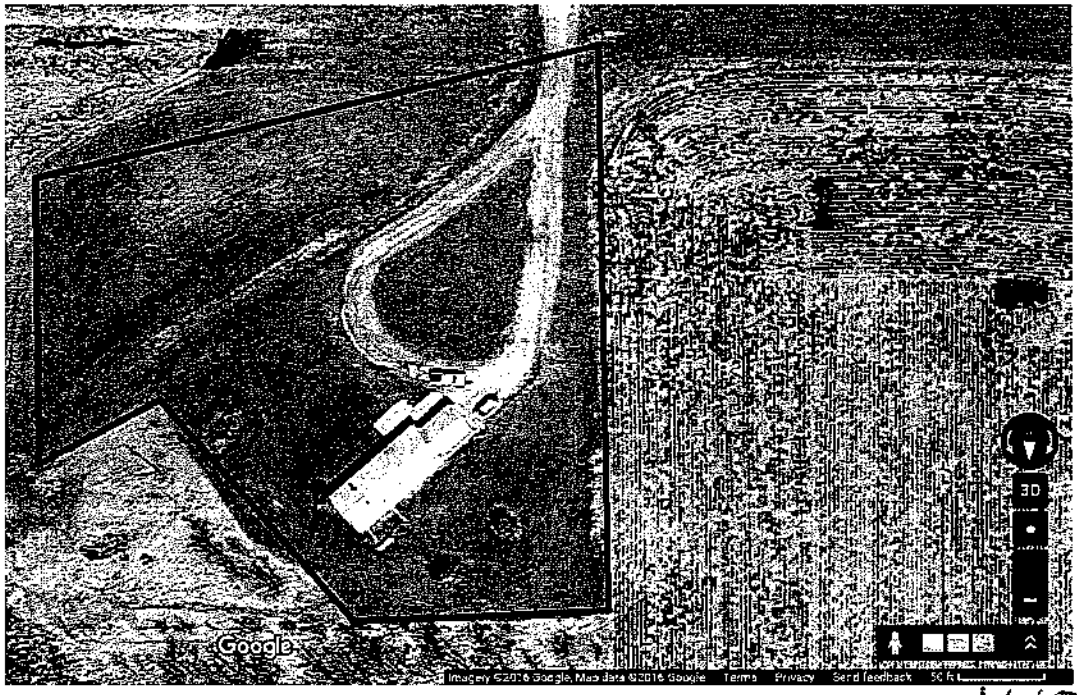
2) Given the scale of a map is: $1cm : 4miles$ find the equivalent lengths for either the map or actual.

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

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

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

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



1.1 : 50

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.

$7.6 + 7.5 + 3.4 + 3.9 + 1.8 + 3.7 = 27.9$ $\frac{1.1}{50} = \frac{27.9}{x}$ $x = 1268 ft$

b) How many miles of wire do you need if you put 3 strands of around? $1268 \times 4 = 3804 ft$

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

d) If each roll costs you $50, how much do you pay? $150

Name: _____Nik_____ 3/31/2017 PreAlgebra (7th Hour) Quiz 23

1) Write the following numbers as a percent.

a) .012 1.2%
b) 1.2 120%
c) 0.625 62.5%
d) .75 75%

2) Write the following percentages as a decimal.

a) .012% .00012
b) 1.2% .012
c) 625% 6.25
d) 7.5% .075

3) Answer the following questions.

a) What is 91% of 200? $x = .91 \cdot 200$ $x = 182$
b) 26 is 40% of what number? $\frac{26}{.4} = \frac{.40 \cdot x}{.4}$ $x = 65$

4) Answer the following questions.

a) What percent of 90 is 15? $\frac{x \cdot 90}{90} = \frac{15}{90}$ $x = 16.7\%$
b) What percent of 50 is 45? $\frac{x \cdot 50}{50} = \frac{45}{50}$ $x = 90\%$

5) Calculate the sales tax/commission rate AND the final price paid/amount earned for the following purchases.

a)
Total Sales: $300 $300 \cdot .08 =$
Tax: 8%
Tax: $ 24
Total Amount: $ 324

b)
Total Sales: $500 $500 \cdot .3 =$
Commission: 30%
Commission: $ 150

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

1) Write the following numbers as a percent.

a) .72 72%
b) .049 4.9%
c) 6150 615000%
d) 2.6 260%

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

a) What is 15% of 70? $x = .15 \cdot 70 \rightarrow 10.5$
b) 15 is what percent of 50? $\frac{15}{50} = \frac{x \cdot 50}{50} \rightarrow 30\%$
c) 45 is 85% of what number? $\frac{45}{.85} = \frac{.85 \cdot x}{.85} \rightarrow 52.9$

3) Calculate the sales tax AND the final price paid

Total Sales: $100
Tax Rate: 6.25%
Tax: $ 6.25
Total: $ 106.25

4) Find the final price of each of the following:

a) $28 is increased by 150% $28 \cdot 1.5 = 42$ $28 + 42 = 70$

b) $28 is decreased by 50% $28 \cdot .5 = 14$ $28 - 14 = 14$

5) Find the percent change.

a) 72 is decreased to 45 $\frac{72-45}{72}$ 37.5%

b) 180 is decreased to 140 $\frac{180-140}{180} = 22.2\%$

6) Write the following percentages as a decimal.

a) .72% .0072
b) .049% .00049
c) 6150% 61.5
d) 2.6% .026

Name: NIK 4/13/2017 PreAlgebra (7th Hour) Quiz 25

1) Write the following numbers as a percent.

a) 7.4 740%
b) .77 77%
c) 61.5 6150%
d) .0084 .84%

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

a) What is 20% of 90? $x = .2 \cdot 90 = 18$
b) 20 is what percent of 90? $20 = x \cdot 90$ $x = 22.2\%$
c) 60 is 50% of what number? $60 = .5 \cdot x$ $x = 120$

3) Nik invested $5,000 in a savings account and earned $100 over 5 years. What was the interest rate she was earning? How much money does ~~she~~ he have now? (Simple Interest)

$100 = 5000 \cdot r \cdot 5$

$\frac{100}{25000} = \frac{25000r}{25000}$

$r = .4\%$ & Total $5,100

4) The simple interest formula is given by: I=P*r*t. State what each letter represents and the units that go with it.

I → interest $
P → principal $
r → rate %
t → time (years)

5) Hobie invested $400 into a savings account that earns 5% interest. If he leaves the money in the account for 3 years, how much interest does he make? How much money does he have now? (Simple Interest)

$I = (400)(.05)(3)$ $60 $460

6) The following are compounded yearly. Find the total amount in the account.

$P = 1000$	$P = 2000$
$r = 5\%$	$r = 8\%$
$t = 3\ years$	$t = 2\ years$

$A = 1000(1 + .05)^3$
$= \$1157.63$

$A = 2000(1 + .08)^2$
$= \$2332.8$