Name: Key 8th Grade – Semester Test 12/15/2016

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

a) Write it using exponents 3^2

(3) 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.

(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.

(3)

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

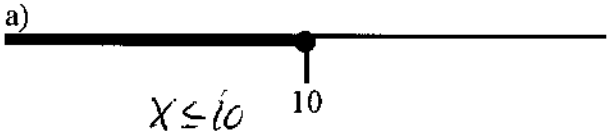
C) Identity Property of Multiplication

D) Associative Property of Multiplication

4) Write an inequality for the following graphs.

(2)

a)



$x \leq 10$

b)

$x > -7$

5) Find the GCF of the following numbers.

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

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

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

$+5x \quad +5x$

$-1 > 0$

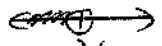
no soln

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

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

$10x < -4$

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



7) Write the following in words.

(4) 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.

(2) a) From $10°F$ to $-11°F$ $-21°F$

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

1080ft.

9) Evaluate the following absolute values:

(2) a) $|-4|$ 4

b) $|-1| + 9$ 10

10) Simplify the following expressions by combining like terms.

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

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

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

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

12) What quadrant is each letter in?

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

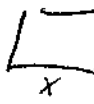
13) Find the difference of the following expressions:

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

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

(3) 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.

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

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

16) Solve the following equations.

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

17)

Translate the following into equations:

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

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

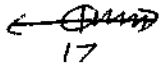
Write the following in words.

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

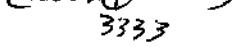
d) $8x = -9$ 8 times x is -9.

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

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



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



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

(2) a) $a + (-23)$ $10 \quad -13$ | b) $-b - a$ $-(-5) - 10 \quad -5$

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

(3) a) $9x + 1 < -6$ 9 times x plus 1 is 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.

(3) a) $63 = 3^2 \cdot 7$ | b) $120 = 2^3 \cdot 3 \cdot 5$

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

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

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

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

$6x + 42 - 4 = 14$

$6x + 38 = 14$

$6x = -24$

$x = -4$

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

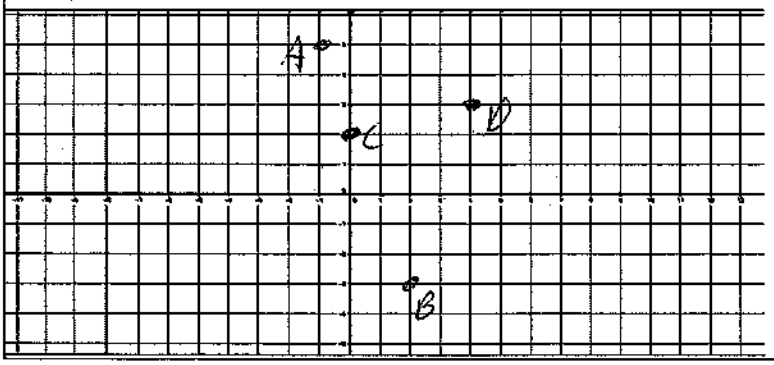
$x - 6 = 80$

$+6 \quad +6$

$x = 86$

key

ANSWERS ONLY!! 8th Grade

1A)	3^2			**12A)** II	**12B)** IV
1B)	3 Squared			**12C)** I or 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)**	15 x
3A)	B	**3B)**	C	**14B)**	$x = 3ft$
3C)	D	**3D)**	A	**15A)**	1
4A)	$x \leq 10$			**15B)**	-745
4B)	$x > -7$			**16A)**	9
5A)	4			**16B)**	-20
5B)	5			**17A)**	$12+y=15$ **17B)** $5+x=20$
6A)	no soln			**17C)**	7 minus x is 4
6B)	$x < -2/5$			**17D)**	8 times x is -9.
7A)	5 times x minus 3			**18A)**	$x > 17$
7B)	2 times the difference of x and 7.			**18B)**	$x < 3333$
8A)	$-21°$			**19A)**	$+3$
8B)	1080ft.			**19B)**	-5
9A)	4			**20A)**	see work
9B)	10			**20B)**	see work.
10A)	$-7x+17y$			**21A)**	$3^3, 7$
10B)	$8x+11$			**21B)**	$2^3, 3, 5$
11)				**22A)**	letter, exponent.
				22B)	variable.
				23A)	$x = -4$
				23B)	$x = 86$.

Name: Key
8th Grade – Test 4 (thru 4.5)
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.

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

(4)

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

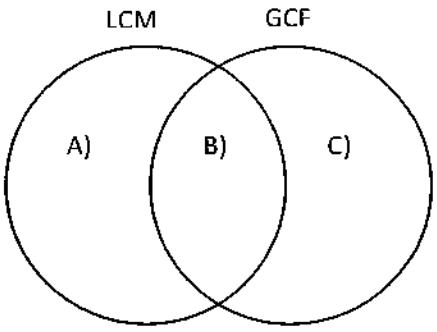
2)
a) If do you do not see an exponent on the base, then you assume it is 1 (Think x^1)

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

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

$\frac{3\cdot 7}{7\cdot 7} = \frac{3}{7}$ $\frac{3\cdot 5}{8\cdot 7} = \frac{3}{7}$ ✓ $\frac{2\cdot 2\cdot 2\cdot 2}{2\cdot 2\cdot 2\cdot 2\cdot 3} = \frac{1}{3}$ $\frac{2\cdot 2\cdot 7}{2\cdot 2\cdot 3\cdot 3} = \frac{7}{9}$

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

(4) 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.

(4) a) $\frac{16}{30}, \frac{14}{25}$ $30 = 2\cdot 3\cdot 5$, $25 = 5\cdot 5$, $2\cdot 3\cdot 5^2 = 150$, $\frac{80}{150}, \frac{84}{150}$ | b) $\frac{19}{20}, \frac{17}{18}$ $20 = 2^2\cdot 5$, $18 = 2\cdot 3^2$, $2^2\cdot 3^2\cdot 5 = 180$, $\frac{171}{180}, \frac{170}{180}$

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

(8) 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.

(8) 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

(8) a) $14x^3, 42x^4$ $14 = 2\cdot 7x^3$, $42 = 2\cdot 3\cdot 7x^4$, $2\cdot 3\cdot 7x^4$ $42x^4$ | b) $8x^2, 11$ $8 = 2^3x^2$, $11 = 11$, $2^3\cdot 11x^2 = 88x^2$

c) $12x, 6x^2, 9x^3$ $12 = 2^2\cdot 3x$, $6 = 2\cdot 3x^2$, $9 = 3^2x^3$, $2^2\cdot 3^2x^3 = 36x^3$ | d) $64x^4, 24x^2$ $64 = 2^6x^4$, $24 = 2^3\cdot 3x^2$, $2^6\cdot 3\cdot x^4 = 192x^4$

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

(8) 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 8th Grade – Test 5

1) Fill in the blanks:

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

(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 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 ~~reciprocal~~ negative exponent, then you have to reciprocate it.

3) Fill in the blanks for the questions you should ask/answer yourself when converting units.

(3) 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.

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

b) $(42.3 * 10^{4})(6.23 * 10^{-14})$
$136.6 \times 10^{-10} = 1.366 \times 10^{-8}$
263.5 2.635

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

d) $(7.54 * 10^{-2})(3.45 * 10^{9})$
$25.988 \times 10^{7} = 2.588 \times 10^{8}$
26.01 2.601

5) Give the name of the following units.

(4) a) dJ decijoules

b) km kilometer

c) mg milligrams

d) hL hectolite

6) Give the abbreviation of the following units.

(4) a) picowatt pW

b) centimeter cm

c) microsecond μs

d) millijoule mJ

7) One Step Conversions

(12)

a) 0.0723 kJ to J

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

b) 445 s to ms

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

c) 15.2 μg to g

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

d) 9368 m to Mm

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

8) Two Step Conversions

(12)

a) 936800 dm to Mm

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

b) 587.1 Mg to μg

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

$$5.871 \times 10^{14}\ \mu\text{g}$$

c) 319000 cL to ML

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

d) 0.4744 nJ to μJ

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

$$4.744 \times 10^{-4}\ \mu\text{J}$$

9) Basic Conversions

(12)

a) 28.68 c to gal

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

b) 263500 weeks to days

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

c) 0.004279 g to lbs

$$.004279\ \text{g} \left| \frac{1\ \text{oz}}{28.3\ \text{g}} \right| \frac{1\ \text{lbs}}{16\ \text{oz}} = 9.45 \times 10^{-6}\ \text{lbs}$$

d) 0.3694 m to ft

$$\left| \frac{10^2\ \text{cm}}{1\ \text{m}} \right| \frac{1\ \text{in}}{2.54\ \text{cm}} \left| \frac{1\ \text{ft}}{12\ \text{in}} \right. = 1.21\ \text{ft}$$

10) Write the following in scientific notation.

(8)

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:

(8)

a) $3.54 * 10^{-5}$ .0000354

b) $5.78 * 10^3$ 5780

c) $6.89 * 10^5$ 689000

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

Name: ~~HANNAH~~ Key 3/21/2017 8th Grade – Test 6

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

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

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

(4)

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

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

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)

3) 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 tops and bottoms
c) Multiply the tops and the bottoms.

(4)

4) Add/subtract the following fractions.

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

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

(4)

5) Add/subtract the following fractions.

a) $\frac{1}{24}-\frac{3}{18}$ ·4 ·3

$\frac{3-12}{72} = \frac{-9}{72} = \boxed{\frac{-3}{24}}$ $\boxed{\frac{-1}{8}}$

b) $\frac{13}{28}-\frac{7}{12}$ ·7 ·3

$\frac{39-49}{84}$

$\frac{-10}{84} = \boxed{\frac{-5}{42}}$

(6)

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

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

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

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

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

(4)

7) Solve the following equations.

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

$x = 54$

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

$+17 \quad +7$

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

$x = 33$

8) Divide the following fractions.

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

$\frac{7}{1}\cancel{\frac{14}{4}} \cdot \cancel{\frac{20}{18}}^{5} = \frac{35}{9} = 3\frac{8}{9}$

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

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

9) Multiply the following fractions.

(6) a) $\cancel{\frac{28}{4}}^{7} \times \cancel{\frac{12}{7}}^{3} = 12$

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

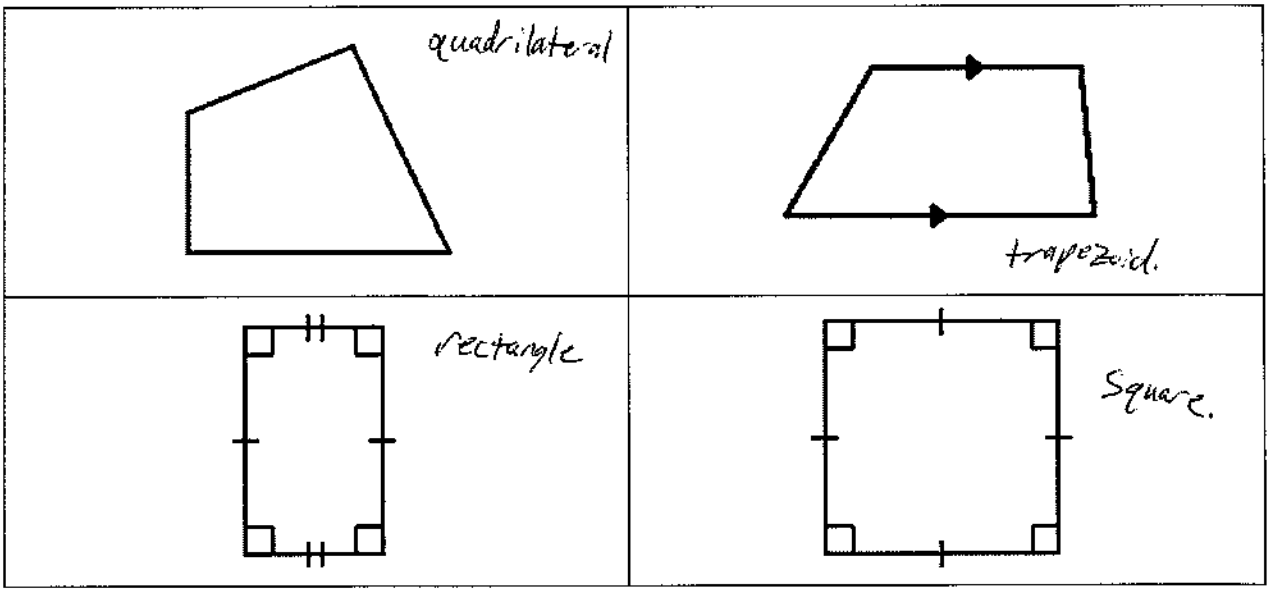
$\frac{25}{8} \cdot \frac{53}{8} = \frac{1325}{64}$

$= 20\frac{45}{64}$

Name: Key 5/2/2017 8th Grade – Test 7

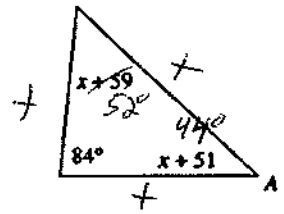
1) Classify the following as a quadrilateral, parallelogram, rhombus, trapezoid, rectangle, or square.

(4)



2) Find all the angles of the following triangle. Classify it as either acute, obtuse, or right. acute.

(3)



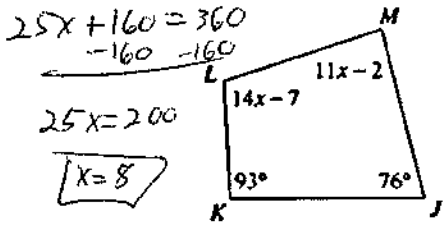
$2x + 194 = 180$

$\frac{2x}{2} = \frac{-14}{2}$

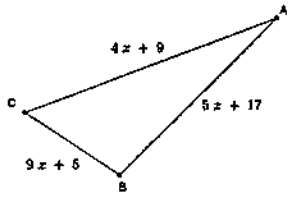
$x = -7$

3) Solve for x.

(6)



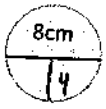
$P = 75$



4) Calculate the circumference **AND** area for each of the following circles.

(6)

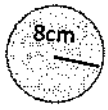
a)



$C = 8 \cdot 3.14 = 25.12\ cm$

$A = 4^2 \cdot 3.14 = 50.24\ cm^2$

b)

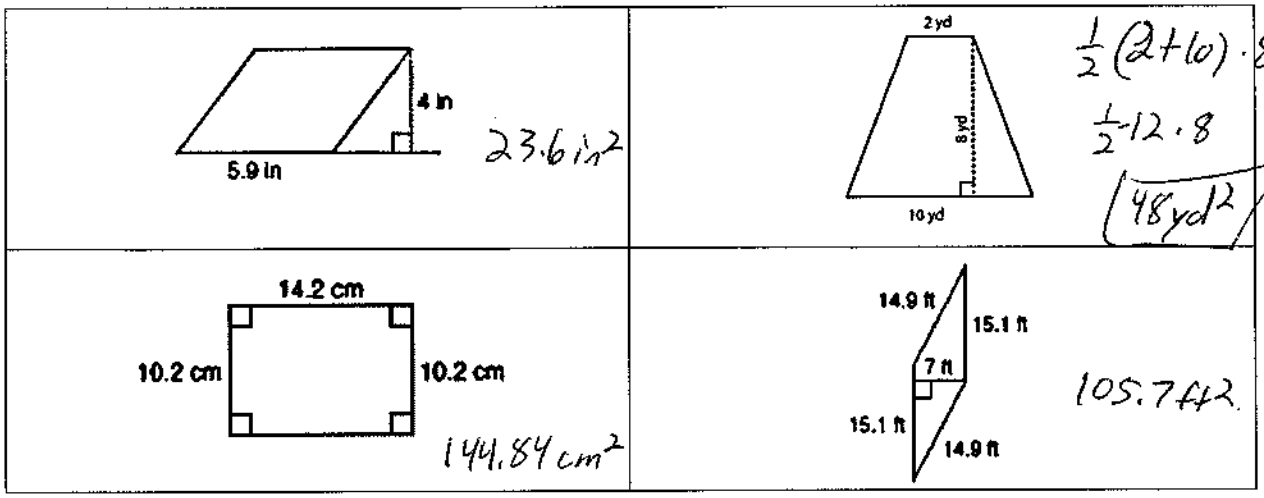


$C = 16 \cdot 3.14 = 50.24\ cm$

$A = 8^2 \cdot 3.14 = 200.96\ cm^2$

5) Calculate the area for each of the following quadrilaterals.

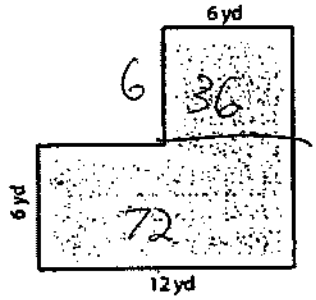
(8)



6) Find the area of the following shape.

(4)

108 yd².



7) The area and circumference of a circle have similar formulas and are often confused. Fill in the blank for the formula for area and circumference of a circle.

(2)

$C = \pi \underline{d} = 2\pi \underline{r}$

$A = \underline{\pi} r^2$

8) Given the area, find the diameter and radius of the following circles.

(6)

a) $A = 50.24in^2 = \underline{3.14} \cdot r^2$ / $\underline{3.14}$

$\sqrt{r^2} = \sqrt{16}$

$r = 4in$ $d = 8in$

b) $A = 28.26ft^2 = \underline{3.14} \cdot r^2$ / $\underline{3.14}$

$r^2 = 9$

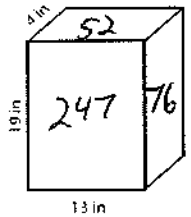
$r = 3ft$

$d = 6ft$

9) Calculate the surface area of the following shapes.

(6)

a)

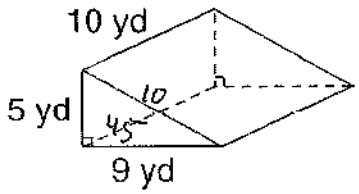


$= 375$

$\times 2$

$750 in^2$

b)



330

100 10

90 10

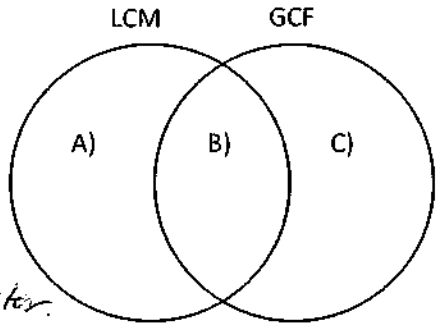
50 10

285 yd² 10 9 5

45 ×2

Name: Key
1/13/2017
8th Grade Quiz ~~13~~ 14

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) $\frac{28}{30}$ $\frac{2\cdot2\cdot7}{2\cdot3\cdot5} = \frac{14}{15}$

b) $\frac{12}{21}$ $\frac{2\cdot2\cdot3}{3\cdot7} = \frac{4}{7}$

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

a) $\frac{24x^{11}}{18x^3}$ $\frac{2\cdot2\cdot2\cdot3\cdot x\cdot x\cdots x}{2\cdot3\cdot3}$ $\frac{4x^8}{3}$

b) $\frac{75x^2y^3}{245xy^8}$ $\frac{3\cdot5\cdot5\ x\cdot x\cdot y\cdot y\cdot y}{5\cdot7\cdot7\ x\cdot y\cdot y\cdot y\cdot y\cdot y\cdot y\cdot y\cdot y}$ $\frac{15x}{49y^5}$

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
DA	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) $\frac{39}{72}, \frac{26}{48}$ $\frac{3\cdot13}{2\cdot2\cdot2\cdot3\cdot3} = \frac{13}{24}$

$\frac{3\cdot13}{2\cdot2\cdot2\cdot3\cdot3} = \frac{13}{24}$ ✓

✓ (=)

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

(=)

Name: Key
1/20/2017
8th Grade Quiz /4 /5

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

a) $\frac{13}{20}$ $\frac{23}{46}$ — $20 = 2^2 \cdot 5$, $42 = 2 \cdot 23$, $2^2 \cdot 5 \cdot 23$ — $\frac{299}{460}$, $\frac{230}{460}$

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

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

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

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
8th Grade Quiz 16

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

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
8th Grade Quiz 17

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}

6) 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

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

Name: key 2/17/2017 8th Grade 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 hectoliter
c) picowatt pW	d) centimeter cm.

3) Two Step Conversions

a) 936800 dm to Mm

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

9.368×10^{-2} Mm.

b) 587.1 Mg to µg

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

$5.871\times10^{14}\,\mu g$

4) Basic Conversions

a) 28.68 c to gal

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

b) 263500 weeks to days

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

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

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

b) 9368 m to Mm

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

Name: Key. 3/3/2017 8th Grade Quiz 19

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) Add/subtract the following fractions.

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

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

3) Add/subtract the following fractions.

a) $\frac{3\cdot 1}{3\cdot 24}-\frac{3\cdot 4}{18\cdot 4}$ $\frac{3-12}{72}=\frac{-9}{72}=\boxed{-\frac{1}{8}}$

b) $\frac{8\cdot 2}{8\cdot 6}+\frac{3\cdot 3}{16\cdot 3}$ $\frac{16+9}{48}=\boxed{\frac{25}{48}}$

4) Add/subtract the following fractions.

a) $4\frac{1}{12}-3\frac{3}{16}$

$\frac{4\cdot 49}{4\cdot 12}-\frac{51\cdot 3}{16\cdot 3}=\frac{196-153}{48}=\boxed{\frac{43}{48}}$

b) $2\frac{2}{21}-1\frac{3}{14}$

$\frac{2\cdot 44}{2\cdot 21}-\frac{17\cdot 3}{14\cdot 3}=\frac{88-51}{42}=\boxed{\frac{37}{42}}$

Name: Key 3/10/2017 8th Grade Quiz 20

1) Evaluate the expression.

$\frac{2}{3} * \frac{9}{10} + \frac{2}{15}$ $\quad 3 \cdot 5$

$\frac{-3}{5} + \frac{2}{15} = \frac{-9}{15} + \frac{2}{15} =$ $\boxed{\frac{-7}{15}}$

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 tops and bottoms
   c) Multiply the tops and the bottoms.

3) Divide the following fractions.

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

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

4) Multiply the following fractions.

a) $\frac{28}{4} * \frac{12}{7} \frac{3}{1} = 12$

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

5) Multiply the following expressions.

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

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

Name: Key 3/16/2017 8th Grade Quiz 21

1) Evaluate the expression.

$\frac{7}{9} * \frac{3}{10} + \frac{6}{15}$

$\frac{-7}{30} + \frac{6 \cdot 2}{15 \cdot 2}$

$\frac{5}{30} = \frac{1}{6}$

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 tops and bottoms
   c) Multiply the tops and the bottoms.

3) Divide the following fractions.

a) $\frac{12}{5} \div \frac{16}{20}$ $\frac{20}{16}$ $= 3$

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

$-\frac{35}{8} \cdot \frac{8}{17} = \frac{-35}{17}$

$= -2\frac{1}{17}$

4) Solve the following equations.

a) $\frac{2}{9}x = 12$ $\cdot \frac{9}{2}$

$x = 54$

b) $\frac{7}{11}x = \frac{21}{22}$ $\cdot \frac{11}{7}$

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

5) Solve the following equations.

a) $\frac{4}{7}x + 6 = \frac{9}{14}$

$-6 \quad -6$

$\frac{4}{7}x = \frac{9}{14} - \frac{84}{14}$

b) $\frac{8}{3}x - \frac{3}{6} = \frac{7}{9}$

$+\frac{3}{6} \quad +\frac{3}{6}$

$\frac{8}{3}x = \frac{7}{9} + \frac{3 \cdot 3}{6 \cdot 3}$

$\frac{7}{4} \cdot \frac{4}{7}x = \frac{75}{14} \cdot \frac{7}{4}$

$x = \frac{-75}{8}$

$x = -9\frac{3}{8}$

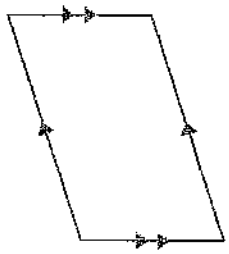
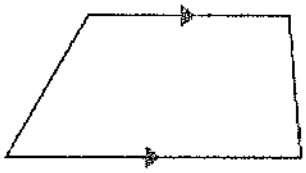
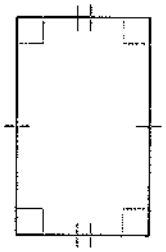
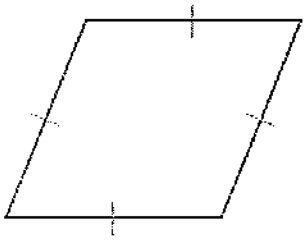
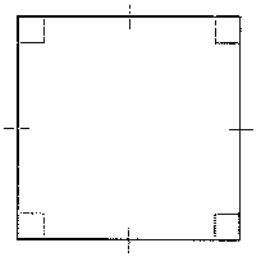
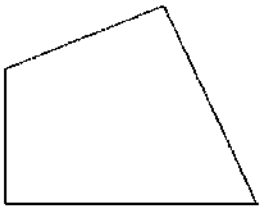
$= \frac{14+9}{18}$

$\frac{3}{8} \cdot \frac{8}{3}x = \frac{23}{18} \cdot \frac{3}{8}$

$x = \frac{23}{48}$

Name: Key 3/31/2017 8th Grade Quiz 23

1) Classify the following as a quadrilateral, parallelogram, rhombus, trapezoid, rectangle, or square.

 Parallelogram	 Trapezoid
 rectangle.	 rhombus,
 square	 quadrilateral

2) Find all the angles of the following triangle. Classify it as either acute, obtuse, or right.

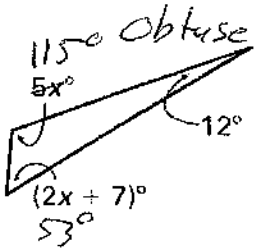
$2x+7+5x+12=180$

$7x+19=180$

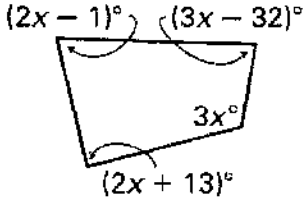
$-19 \quad -19$

$7x=161$

$x=23$



3) Solve for x.



$2x-1+3x-32+3x+2x+13=360$

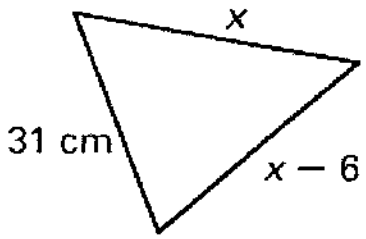
$10x-20=360$

$+20 \quad +20$

$\frac{10x}{10}=\frac{380}{10}$

$x=38$.

P = 80



$x+31+x-6=80$

$2x+25=80$

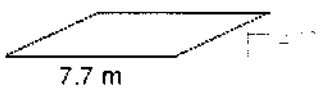
$-25 \quad -25$

$\frac{2x}{2}=\frac{55}{2}$

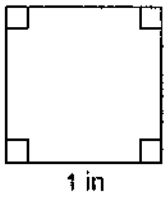
$x=27.5$ cm.

Name: Key 4/7/2017 8th Grade Quiz 24

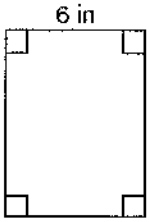
1) Calculate the area for each of the following quadrilaterals.



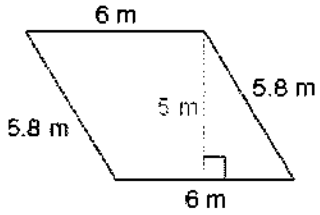
$15.4 m^2$



$1 in^2$



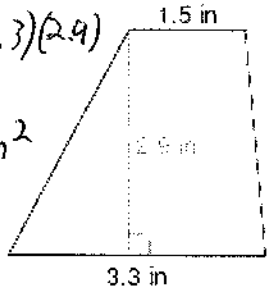
$48 in^2$

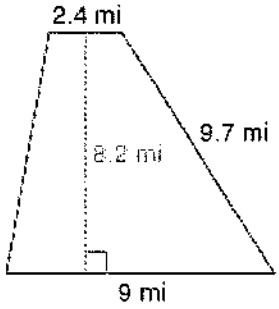


$30 m^2$

$\frac{1}{2}(1.5+3.3)(2.9)$

$6.96 in^2$





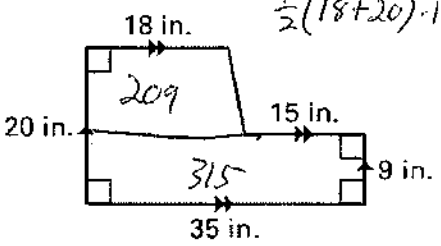
$\frac{1}{2}(2.4+9)8.2$

$57.3 mi^2$

2) Find all the angles of the following triangle. Classify it as either acute, obtuse, or right.

524

$\frac{1}{2}(18+20)\cdot 11 = 209$



35.9

3) I measured the circumference of a circle to be 25.12cm and the diameter to be 8.

a) What is the circumference divided by the diameter? 3.14

b) What is the radius of the circle? 4 cm

c) From (a), what is that number called? pi

Name: Key 4/13/2017 8th Grade Quiz 25

1) Calculate the area for each of the following circles. $A = \pi r^2$

a) 

$r=3$ $(3.14)(3)^2$

$28.26\ cm^2$

b) 

$(3.14)(6)^2$

$113.04 cm^2$

2) The area and circumference of a circle have similar formulas and are often confused. Fill in the blank for the formula for area and circumference of a circle.

$C = \pi\ d\ = 2\pi\ r$

$A = \pi\ r^2$

3) Given the area, find the diameter and radius of the following circles.

a) $A = 78.5in^2$ $\frac{78.5}{3.14} = \frac{(3.14)(r^2)}{3.14}$

$r^2 = 25$ $r = 5in, d = 10in$

b) $A = 12.6ft^2 = (3.14)(r^2)$

$r^2 = 4$

$r = 2ft, d = 4ft$

4) Given the circumference, find the diameter and radius of the following circles.

a) $C = 25.1cm = 3.14d$

$d = 8cm$

$r = 4cm$

b) $C = 31.4m = 3.14d$

$d = 10m$

$r = 5m$

5) Calculate the circumference of the following circles.

a) 

$C = 6(3.14)$

$= 18.84 cm$

b) 

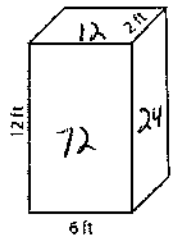
$C = 2(6)(3.14)$

$= 37.68 cm$

Name: Key 4/21/2017 8th Grade Quiz 26

1) Calculate the surface area of the following shapes.

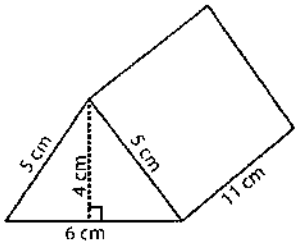
a)



$2(12+24+72)$

$= 216\ ft^2$

b)



$12+12+55+55+66$

$= 200\ cm^2$

5 | 55 | 11

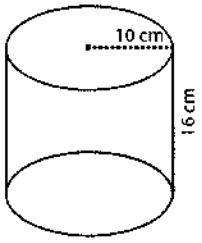
6 | 66 | 11

12

$\frac{1}{2}(4)(6)$

2) Calculate the surface area of the following shapes.

a)



$314 \times 2 + 1004.8$

$1632.8\ cm^2$

$10^2(\pi)$

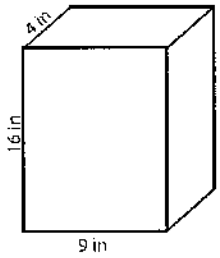
314

1004.8 | 16

$2(10)(3.14)$

62.8

b)



$2(36+64+144)$

$= 488\ in^2$

4 | 36 | 9

4 | 64 | 16

9 | 144 | 16

3) A cylinder has a diameter of 10cm and a height of 6cm. What is the surface area of the cylinder?

$5^2(3.14) = 78.5$

$\times 2$

157

10

188.4 | 6

$10(3.14)$

$\begin{array}{r} 1\ 1 \\ 188.4 \\ 157 \\ \hline 345.4\ cm^2 \end{array}$

4) When you cut a cup down the side and roll it out, what shape do you get?

Square or trapezoid.