



I am looking forward to teaching you this upcoming school year! Together we will explore many mathematical topics. This will be a challenging journey, but one in which you will learn a lot. So you are prepared for our math adventure, I encourage you to keep your skills sharp this summer by completing this packet.

If you get to a problem that you are unfamiliar with or have forgotten how to work, ask a friend, neighbor or parent, or look it up online. Please don't skip it! Once you have solved the problem, ask yourself..."Does my answer make sense?" If it does not, then try it again. If it does make sense, then tell yourself "Good Job!"

The following packet is broken into weeks. Please work on a section each week so you are not waiting until the last minute. Please bring the completed packet on the first full day of school. How your packet of work should look:

Please show all work for your problems.

All work is to be neat.

All work is to be completed in pencil.

Keep the work together in a folder with your name on it.

I hope you have a terrific summer and I look forward to seeing you on the first day of school.

Sincerely,

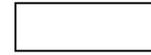
Ms. Johnson

Formula Card:

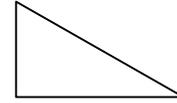
Circle - $A = \pi \cdot r^2$ $C = \pi \cdot d$ $\pi \approx 3.14$



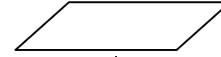
Rectangle - $A = l \cdot w$ $P = l + l + w + w$



Triangle - $A = \frac{1}{2} b \cdot h$ $P = \text{sum of all of the sides}$



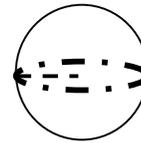
Parallelogram - $A = b \cdot h$ $P = \text{sum of all of the sides}$



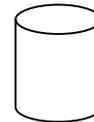
Cone - $V = \frac{1}{3} \pi \cdot r^2 \cdot h$



Sphere - $V = \frac{2}{3} \pi \cdot r^2 \cdot h$



Cylinder - $V = \pi \cdot r^2 \cdot h$



Graphing: Remember to graph the x (horizontal) and then the y (vertical). (x, y)

Absolute Value: distance away from zero (always positive)

Example 1: $|10 - 7| = |3| = 3$

Example 2: $|-3 + -5| = |-8| = 8$

Example 3: $|-8 - 2| = |-6| = 6$

Measures of Central Tendency

- **Mean:** average; $\frac{\text{sum of all numbers}}{\text{total numbers in list}}$
- **Median:** middle number in list of numbers going from least to greatest
- **Mode:** number that appears most often in a list of numbers
- **Range:** difference between largest number and smallest number

Example: 5, 10, 2, 6, 2, 2

Mean: $\frac{5 + 10 + 2 + 6 + 2 + 2}{6} = \frac{27}{6} = 4.5$

Mode: 2

Median: 2, 2, 2, 5, 6, 10

$$\frac{2+5}{2} = \frac{7}{2} = 3.5$$

Range: $10 - 2 = 8$

Multiplying Fractions

1. Reduce fractions, if possible.
2. Multiply across.
3. Check that your answer is in lowest terms.

Example: 1. $\frac{5}{10} \cdot \frac{3}{8}$

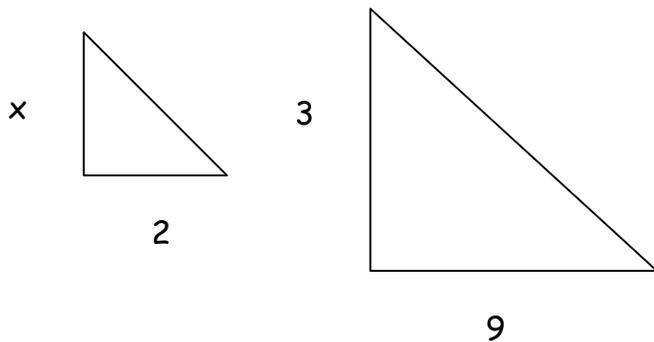
2. $\frac{1}{2} \cdot \frac{3}{8}$

3. $\frac{3}{16}$

Order of Operations

1. Parentheses
2. Exponents: $4^3 = 4 \cdot 4 \cdot 4$
3. Multiplication or Division (left to right)
4. Addition or Subtraction (left to right)

Ratios & Proportions



$$\frac{2}{9} = \frac{x}{3}$$
$$9 \cdot ? = 3$$
$$3 \div 9 = \frac{1}{3}$$
$$2 \cdot ? = x$$
$$2 \cdot \frac{1}{3} = \frac{2}{3}$$

Inequalities

\geq greater than or equal to
(at least)



$>$ greater than



\leq less than or equal to
(at most)



$<$ less than



Adding Fractions

$$\begin{aligned}\text{Ex. 1) } \frac{2}{3} + \frac{4}{5} &= \\ &= \frac{10}{15} + \frac{12}{15} \\ &= \frac{22}{15}\end{aligned}$$

Evaluating Area with Pi

Ex. 2) Find the area of a circle with

a radius of 5 in. $A = \pi r^2$

$$A = \pi \cdot 5^2$$

$$A = 25\pi \text{ in.}^2 \text{ or } 78.5 \text{ in.}^2$$

Evaluating Expressions/Equations

Ex. 3) Solve for y if x = 4:

$$y = 2x + 5$$

$$y = 2(4) + 5$$

$$y = 8 + 5$$

$$y = 13$$

Ex. 4) Solve for x if y = 7:

$$y = 3x - 6$$

$$7 = 3x - 6$$

$$+6 \quad +6$$

$$13 = 3x$$

$$\frac{13}{3} = \frac{3x}{3}$$

$$\frac{13}{3} = x$$

Symbolic Method

One Step Equations:

Example 1: $x + 5 = 12$

$$\begin{array}{r} -5 \quad -5 \\ \hline x = 7 \end{array}$$

Example 2: $x - 8 = 6$

$$\begin{array}{r} +8 \quad +8 \\ \hline x = 14 \end{array}$$

Example 3: $5x = -20$

$$\begin{array}{r} \frac{5x}{5} = \frac{-20}{5} \\ \hline x = -4 \end{array}$$

Two Step Equations:

1. Get "x" by itself by adding or subtracting from each side.
2. Divide both sides by the coefficient (number next to "x").

Example 1: $2x + 7 = 5$

$$\begin{array}{r} -7 \quad -7 \\ \hline 2x = -2 \\ \frac{2x}{2} = \frac{-2}{2} \\ \hline x = 2 \end{array}$$

Example 2: $-5x + 10 = -20$

$$\begin{array}{r} -10 \quad -10 \\ \hline -5x = -30 \\ \frac{-5x}{-5} = \frac{-30}{-5} \\ \hline x = 6 \end{array}$$

Show your work! Show your work! Show your work!

Summer Review - Week # 1

1) Solve for x if $y = -10$:

a) $y = x + 12$

b) $y = 7x - 42$

c) $y = 4x - 16$

d) $y = -2x - 45$

2) Solve for y if $x = 5$:

a) $y = x + 13$

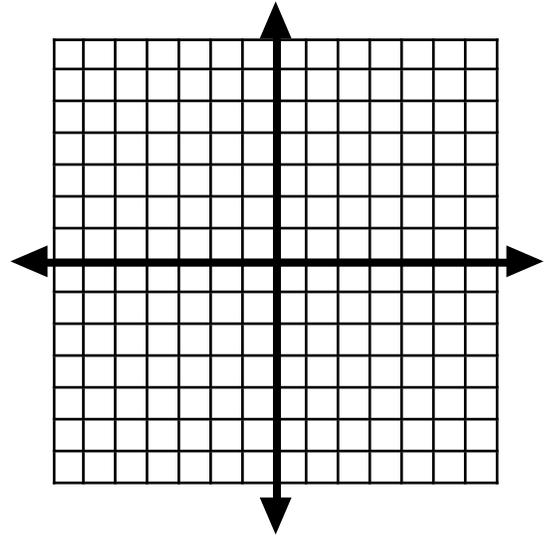
b) $y = 6x - 32$

c) $y = 2x - 15$

d) $y = 8x - 5$

3) Graph each coordinate pair on the graph and then indicate which quadrant or axis the point lies on.

Coordinate pair	Quadrant or Axis
$(-2, -3)$	
$(-3, -5)$	
$(-4, 1)$	
$(-1, 3)$	
$(3, -4)$	
$(1, 0)$	
$(2, -6)$	
$(-4, -3)$	



4) Simplify: (Don't forget, absolute value is the distance from zero.)

a) $|-24 - 11|$

b) $|31 - 60|$

c) $|-37 - 49|$

d) $|-96 + 75|$

5) Solve for x:

a) $\frac{7}{6} = \frac{x}{36}$

b) $\frac{10}{8} = \frac{4}{x}$

c) $\frac{x}{60} = \frac{9}{10}$

Show your work! Show your work! Show your work!

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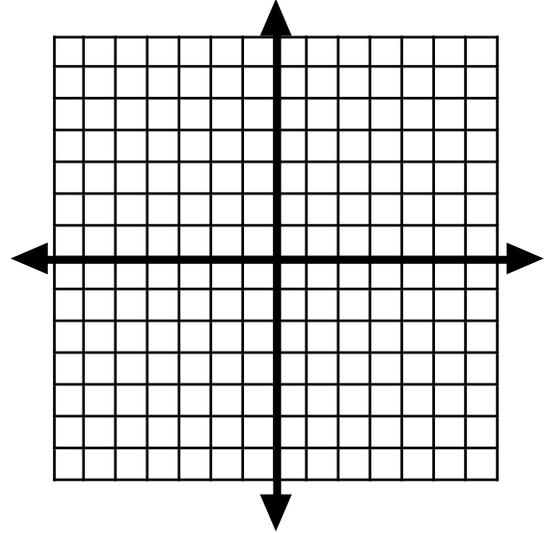
6) Graph the following lines on the coordinate plane:

a) $y = 2x + 1$

b) $y = -3x - 2$

c) $y = \frac{5}{4}x - 3$

d) $y = -\frac{1}{2}x + 5$



7) Solve for x if $y = -3$:

a) $y = -4x + 15$

b) $y = -3x - 47$

c) $y = -5x - 18$

d) $y = -2x - 54$

8) Solve for y if $x = -4$:

a) $y = -2x + 43$

b) $y = 7x - 38$

c) $y = x - 95$

d) $y = 2x - 76$

9) Find the mean, median, mode, and range of the following set of numbers: 23, 25, 27, 21, 24, 27

mean =

mode =

median =

range =

10) Write an equation that represents the points in the table.

x	y
0	5
1	8
2	11

$y =$ _____

Show your work! Show your work! Show your work!

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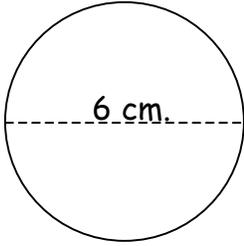
Name _____

Summer Review - Week #

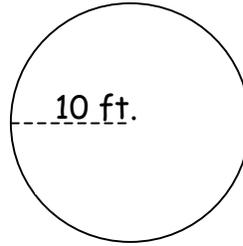


1) Find the circumference and area of each circle:

a)



b)



$C = \underline{\hspace{2cm}}$ or $\underline{\hspace{2cm}}$

$C = \underline{\hspace{2cm}}$ or $\underline{\hspace{2cm}}$

$A = \underline{\hspace{2cm}}$ or $\underline{\hspace{2cm}}$

$A = \underline{\hspace{2cm}}$ or $\underline{\hspace{2cm}}$

2) Solve for x if y = 7:

a) $y = x + 24$

b) $y = -2x - 26$

c) $y = -3x - 11$

d) $y = 6x - 1$

3) Solve for y if x = -1:

a) $y = x + 12$

b) $y = 6x - 31$

c) $y = 2x - 14$

d) $y = 4x - 15$

4) Try to reduce before you compute the answers! (This will help when you are trying to reduce.)

a) $\frac{12}{30} \cdot \frac{9}{12} =$

b) $\frac{25}{24} \cdot \frac{8}{10} =$

c) $\frac{72}{72} \cdot \frac{72}{72} =$

d) $\frac{20}{12} \cdot \frac{16}{30} =$

Show your work! Show your work! Show your work!

Show your work! Show your work! Show your work!

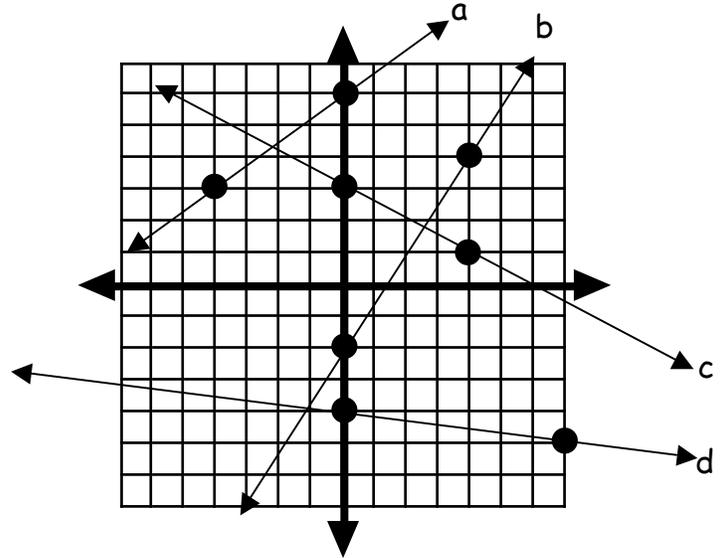
5) Write an equation that represents each of the lines.

a) $y =$

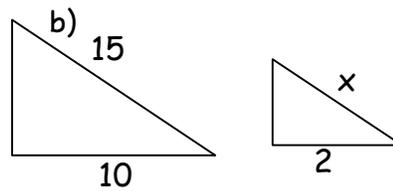
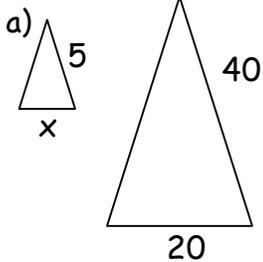
b) $y =$

c) $y =$

d) $y =$



6) Solve for x :



7) Simplify:

a) $-8 - 4(-2) - 5$

b) $12 + 8^2$

c) $5 \cdot 3 + 6 \div 2$

d) $16 + 8 \div -2$

8) Choose the inequality that represents the statement and then graph it on the line provided.

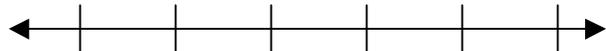
Linus has less than 7 minutes before it starts raining.

a) $x \leq 7$

b) $x \geq 7$

c) $x < 7$

d) $x > 7$

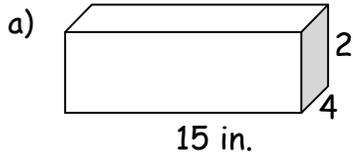


Show your work! Show your work! Show your work!

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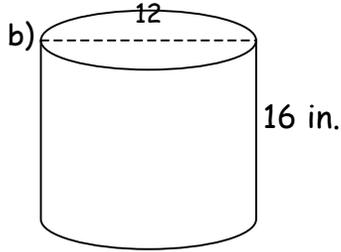
Summer Review - Week #3 Name _____

1) Find the surface area and volume of each of the figures.



Surface Area =

Volume =



Surface Area =

Volume =

2) Solve for x if $y = -3$:

a) $y = x + 17$

b) $y = 4x - 43$

c) $y = -3x - 19$

d) $y = -2x - 46$

3) Solve for y if $x = 12$:

a) $y = 3x + 14$

b) $y = 2x - 12$

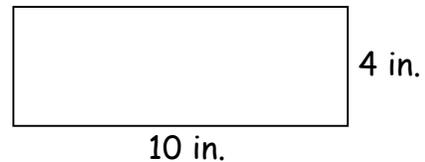
c) $y = -2x - 91$

d) $y = -7x - 24$

4) Find the area and perimeter of the following figures.

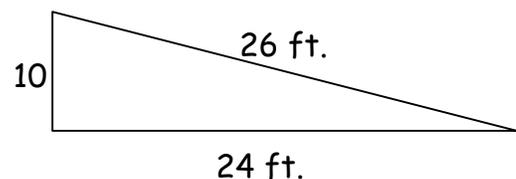
a) $A =$

$P =$



b) $A =$

$P =$



Show your work! Show your work! Show your work!

Show your work! Show your work! Show your work!

5) Simplify:

a) $-\frac{4}{15} - \frac{3}{5} =$

b) $\frac{3}{16} - \frac{7}{32} =$

c) $\frac{9}{7} - \frac{11}{6} =$

d) $\frac{7}{9} - \frac{4}{4} =$

6) Solve for x if y = 0:

a) $y = x + 24$

b) $y = 6x - 90$

c) $y = 2x - 22$

d) $y = 4x - 36$

7) Solve for y if x = -8:

a) $y = -2x + 3$

b) $y = 3x - 39$

c) $y = -4x - 35$

d) $y = 5x - 12$

8) Simplify: (Don't forget, absolute value is the distance from zero.)

a) $|-26 - 12|$

b) $|81 - 67|$

c) $|-39 - 41|$

d) $|-95 + 92|$

9) Solve for x:

a) $\frac{9}{12} = \frac{x}{36}$

b) $\frac{7}{8} = \frac{4}{x}$

c) $\frac{x}{30} = \frac{4}{5}$

10) Write an equation that represents the points in the table.

x	y
3	4
5	6
7	8

y = _____

Show your work! Show your work! Show your work!

Show your work! Show your work! Show your work!

Summer Review - Week # **IV** Name _____

1) Solve for x if $y = -3$:

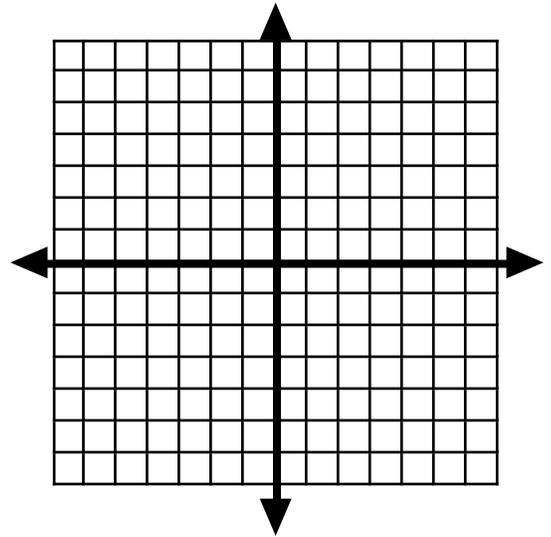
- a) $y = 4x + 42$ b) $y = -2x - 4$ c) $y = 7x - 1$ d) $y = 40x - 8$

2) Solve for y if $x = 1$:

- a) $y = -x + 3$ b) $y = -6x - 2$ c) $y = -2x - 5$ d) $y = -4x - 26$

3) Graph each coordinate pair on the graph and then indicate which quadrant or axis the point lies on.

Coordinate pair	Quadrant or Axis
$(-4, -3)$	
$(-6, -5)$	
$(-3, 1)$	
$(-2, 3)$	
$(2, -4)$	
$(5, 0)$	
$(3, -6)$	
$(-1, -3)$	



4) Simplify: (Don't forget, absolute value is the distance from zero.)

- a) $|-21-17|$ b) $|39-26|$ c) $|-17-79|$ d) $|-9+25|$
- e) $|-21-61|$ f) $|61-74|$ g) $|-31-79|$ h) $|-12+55|$

Show your work! Show your work! Show your work!

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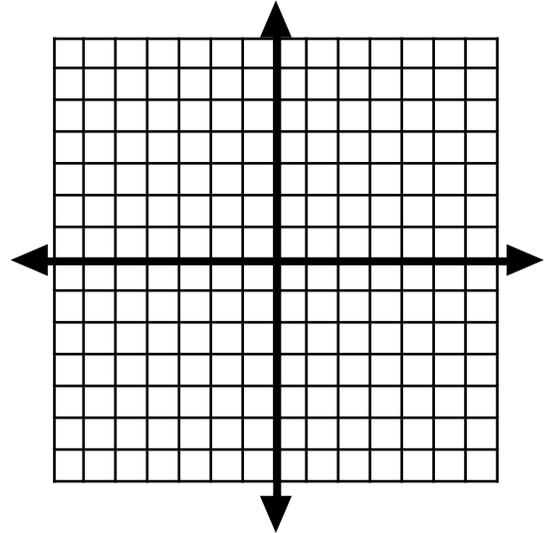
5) Graph the following lines on the coordinate plane:

a) $y = 3x - 5$

b) $y = -2x + 4$

c) $y = -\frac{4}{3}x + 1$

d) $y = \frac{1}{7}x$



6) Solve for x if $y = 4$:

a) $y = 2x + 16$

b) $y = -7x - 2$

c) $y = 3x - 6$

d) $y = x - 14$

7) Solve for y if $x = -11$:

a) $y = x + 19$

b) $y = 2x - 72$

c) $y = -3x - 5$

d) $y = -4x - 27$

8) Find the mean, median, mode, and range of the following set of numbers: 2, 2, 2, 2, 2, 7

mean =

mode =

median =

range =

9) Write an equation that represents the points in the table.

x	y
4	12
5	15
6	18

$y =$ _____

Show your work! Show your work! Show your work!

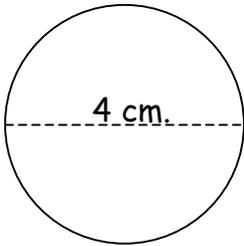
Show your work! Show your work! Show your work!

Name _____

Summer Review - Week

1) Find the circumference and area of each circle:

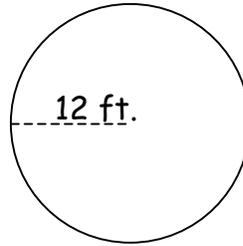
a)



$C =$ _____ or _____

$A =$ _____ or _____

b)



$C =$ _____ or _____

$A =$ _____ or _____

2) Solve for x if $y = 7$:

a) $y = x + 91$

b) $y = 4x - 2$

c) $y = 5x - 46$

d) $y = 6x - 86$

3) Solve for y if $x = 13$:

a) $y = -x + 3$

b) $y = -2x - 2$

c) $y = -3x - 75$

d) $y = 8x - 36$

4) Try to reduce before you compute the answers! (This will help when you are trying to reduce.)

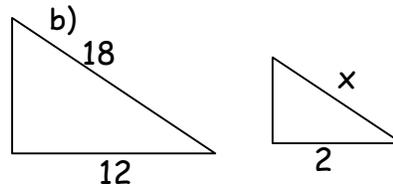
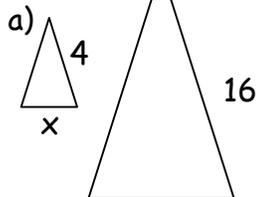
a) $\frac{18}{27} \cdot \frac{30}{40} =$

b) $\frac{10}{15} \cdot \frac{24}{32} =$

c) $\frac{36}{72} \cdot \frac{9}{12} =$

d) $\frac{24}{18} \cdot \frac{18}{24} =$

5) Solve for x :



Show your work! Show your work! Show your work!

Show your work! Show your work! Show your work!

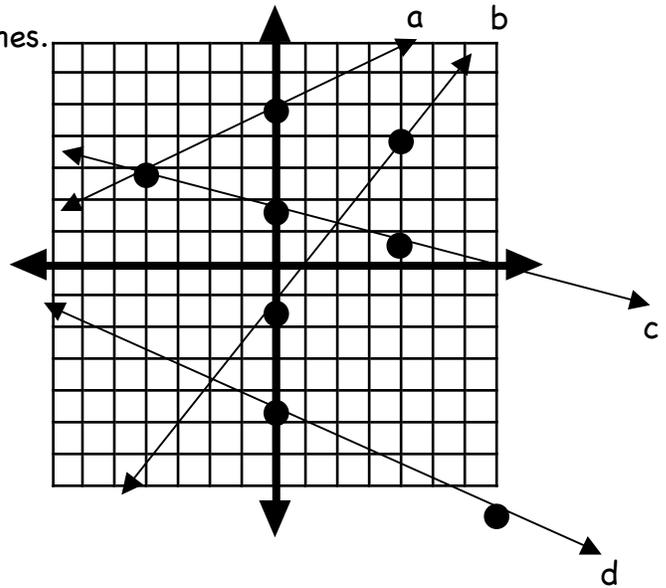
6) Write an equation that represents each of the lines.

a) $y =$

b) $y =$

c) $y =$

d) $y =$



7) Simplify:

a) $-6 - 5(-3) - 7$

b) $71 + 9^2$

c) $4 \cdot 6 + 2 \div 2$

d) $1 + 10 \div -1$

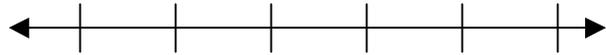
8) Choose the inequality that represents the statement and then graph it on the line provided.
Leonard needs to gain at least 8 more yards.

a) $x \leq 8$

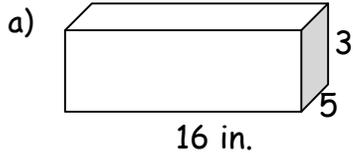
b) $x \geq 8$

c) $x < 8$

d) $x > 8$

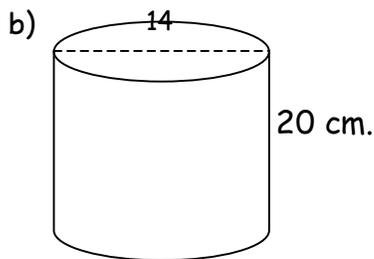


9) Find the surface area and volume of each of the figures.



Surface Area =

Volume =



Surface Area =

Volume =

Show your work! Show your work! Show your work!

Show your work! Show your work! Show your work!

Name _____

Summer Review - Week # **6**

1) Solve for x if $y = -30$:

a) $y = x + 11$

b) $y = -2x - 32$

c) $y = -3x - 1$

d) $y = 5x - 10$

2) Solve for y if $x = -6$:

a) $y = x + 3$

b) $y = -2x - 72$

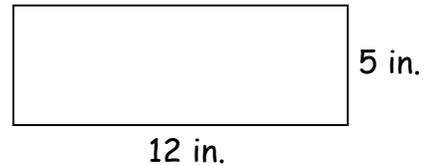
c) $y = 3x - 65$

d) $y = 4x - 26$

3) Find the area and perimeter of the following figures.

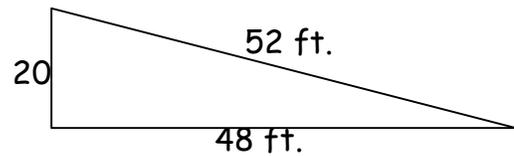
a) $A =$

$P =$



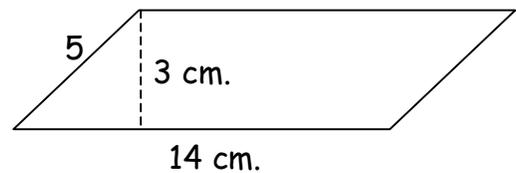
b) $A =$

$P =$



c) $A =$

$P =$



4) Simplify:

a) $-\frac{8}{9} - \frac{4}{6} =$

b) $\frac{4}{5} - \frac{7}{25} =$

c) $\frac{1}{6} - \frac{2}{10} =$

d) $\frac{9}{10} - \frac{1}{2} =$

Show your work! Show your work! Show your work!

Show your work! Show your work! Show your work!

5) Solve for y if $x = 3$:

a) $y = -5x + 17$

b) $y = 3x - 22$

c) $y = 2x - 25$

d) $y = 6x - 39$

6) Simplify: (Don't forget, absolute value is the distance from zero.)

a) $|-81-17|$

b) $|8-20|$

c) $|-76-29|$

d) $|-91+45|$

7) Solve for x:

a) $\frac{1}{8} = \frac{x}{32}$

b) $\frac{9}{5} = \frac{3}{x}$

c) $\frac{x}{40} = \frac{3}{20}$

8) Write an equation that represents the points in the table.

x	y
-2	4
0	2
5	-3

$y =$ _____

9) Solve for x if $y = -5$:

a) $y = -x + 13$

b) $y = 2x - 23$

c) $y = -3x - 17$

d) $y = 8x - 29$

10) Solve for y if $x = -8$:

a) $y = x + 92$

b) $y = 3x - 72$

c) $y = -5x - 35$

d) $y = 7x - 26$

Show your work! Show your work! Show your work!

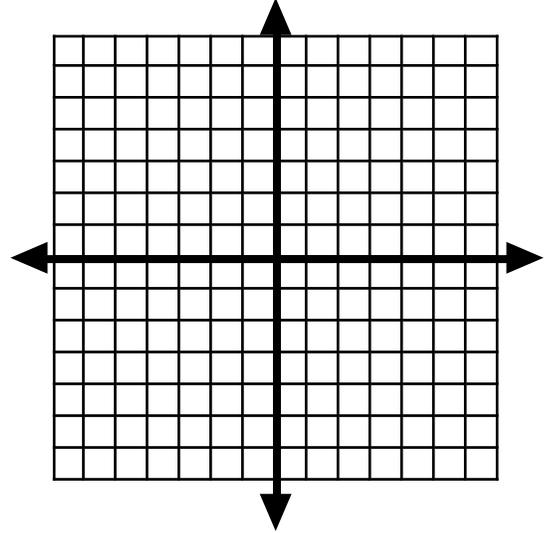
Show your work! Show your work! Show your work!

Name _____

Summer Review - Week #7

1) Graph each coordinate pair on the graph and then indicate which quadrant or axis the point lies on.

Coordinate pair	Quadrant or Axis
$(-2, -4)$	
$(-3, -6)$	
$(-4, 2)$	
$(-1, 4)$	
$(3, 0)$	
$(1, -1)$	
$(2, -7)$	
$(-4, -5)$	



2) Simplify: (Don't forget, absolute value is the distance from zero.)

a) $|-29 - 13|$

b) $|39 - 62|$

c) $|-59 - 41|$

d) $|-26 + 71|$

3) Solve for x:

a) $\frac{7}{8} = \frac{x}{48}$

b) $\frac{9}{2} = \frac{8}{x}$

c) $\frac{x}{80} = \frac{3}{4}$

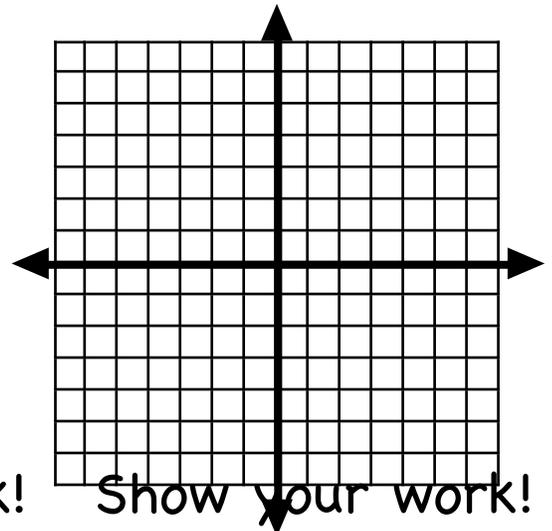
4) Graph the following lines on the coordinate plane:

a) $y = x + 5$

b) $y = -2x + 6$

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

d) $y = -\frac{2}{3}x + 3$



Show your work! Show your work! Show your work!

Show your work! Show your work! Show your work!

5) Solve for x if $y = -8$:

a) $y = -2x + 72$

b) $y = 4x - 40$

c) $y = 3x - 91$

d) $y = 5x - 28$

6) Solve for y if $x = 0$:

a) $y = x + 93$

b) $y = 6x - 95$

c) $y = 2x - 87$

d) $y = 4x - 81$

7) Find the mean, median, mode, and range of the following set of numbers: 3, 5, 7, 1, 7, 0, 0

mean =

mode =

median =

range =

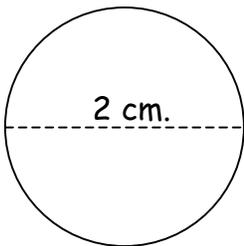
8) Write an equation that represents the points in the table.

x	y
0	5
2	11
3	14

$y =$ _____

9) Find the circumference and area of each circle:

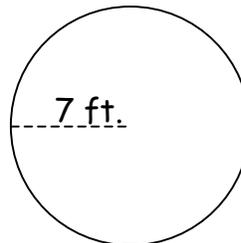
a)



$C =$ _____ or _____

$A =$ _____ or _____

b)



$C =$ _____ or _____

$A =$ _____ or _____

Show your work! Show your work! Show your work!

Show your work! Show your work! Show your work!

Name _____

Summer Review - Week

1) Solve for x if $y = -3$:

a) $y = x + 17$
 $-2x - 1$

b) $y = 2x - 4$

c) $y = 9x + 24$

d) $y =$

2) Solve for y if $x = 7$:

a) $y = -3x + 63$
 $10x - 16$

b) $y = 2x - 38$

c) $y = 4x - 25$

d) $y =$

3) Try to reduce before you compute the answers! (This will help when you are trying to reduce.)

a) $\frac{12}{24} \cdot \frac{10}{5} =$

b) $\frac{23}{24} \cdot \frac{14}{46} =$

c) $\frac{3}{4} \cdot \frac{36}{18} =$

d) $\frac{15}{18} \cdot \frac{21}{3} =$

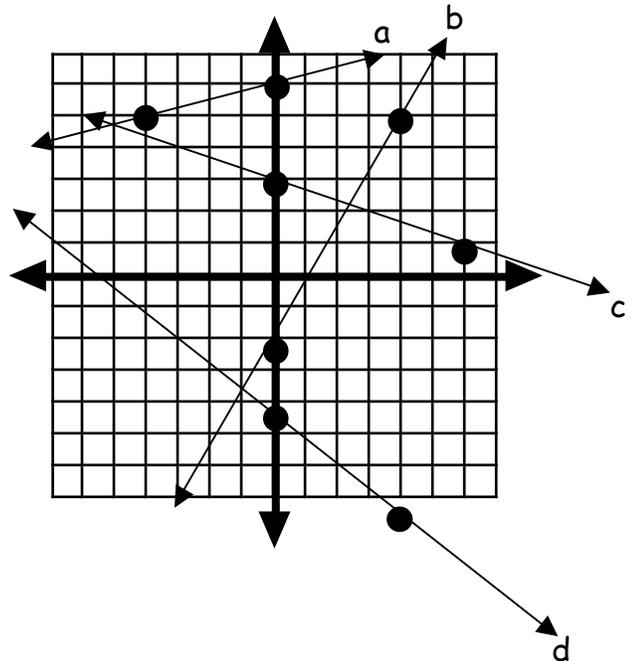
4) Write an equation that represents each of the lines.

a) $y =$

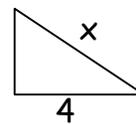
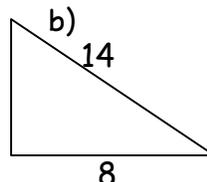
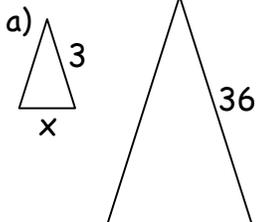
b) $y =$

c) $y =$

d) $y =$



5) Solve for x:



Show your work! Show your work! Show your work!

Show your work! Show your work! Show your work!

6) Simplify:

a) $-1 - 9(-8) - 2$

b) $81 + 4^2$

c) $12 \cdot 7 + 6 \div 3$

d) $74 + 9 \div^{-} 3$

7) Choose the inequality that represents the statement and then graph it on the line provided.
Larry has at most 7 miles left in the race.

a) $x \leq 7$

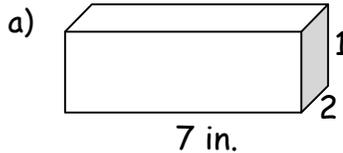
b) $x \geq 7$

c) $x < 7$

d) $x > 7$

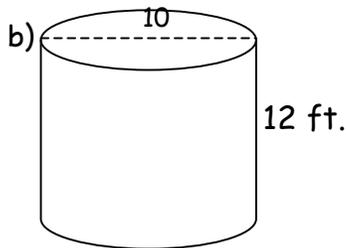


8) Find the surface area and volume of each of the figures.



Surface Area =

Volume =



Surface Area =

Volume =

9) Solve for x if y = -1:

a) $y = x + 19$

b) $y = 8x - 92$

c) $y = -3x - 6$

d) $y = 2x - 57$

10) Solve for y if x = 5:

a) $y = x + 72$

b) $y = 2x - 46$

c) $y = -3x - 85$

d) $y = -4x - 96$

Show your work! Show your work! Show your work!

Show your work! Show your work! Show your work!

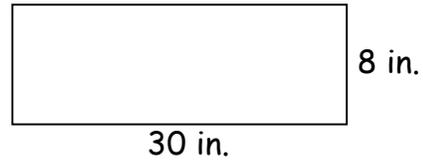
Name _____

Summer Review - Week # **9**

1) Find the area and perimeter of the following figures.

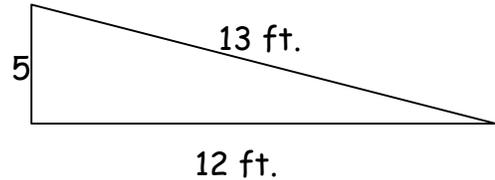
a) $A =$

$P =$



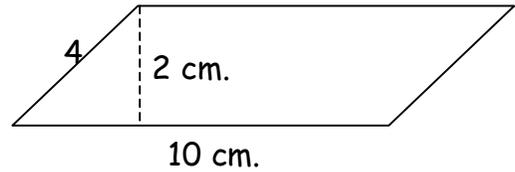
b) $A =$

$P =$



c) $A =$

$P =$



2) Simplify:

a) $-\frac{4}{24} - \frac{1}{8} =$

b) $\frac{5}{21} - \frac{7}{14} =$

c) $\frac{1}{3} - \frac{3}{4} =$

d) $\frac{3}{10} - \frac{1}{12} =$

3) Solve for x if $y = -20$:

a) $y = -x + 32$

b) $y = 4x - 12$

c) $y = 3x - 11$

d) $y = 2x - 62$

4) Solve for y if $x = -9$:

a) $y = x + 73$

b) $y = 3x - 34$

c) $y = 2x - 45$

d) $y = 8x - 51$

5) Simplify: (Don't forget, absolute value is the distance from zero.)

a) $|-27 - 13|$

b) $|35 - 63|$

c) $|-98 - 42|$

d) $|-98 + 72|$

Show your work! Show your work! Show your work!

Show your work! Show your work! Show your work!

6) Solve for x:

a) $\frac{7}{9} = \frac{x}{45}$

b) $\frac{10}{8} = \frac{5}{x}$

c) $\frac{x}{34} = \frac{15}{17}$

7) Write an equation that represents the points in the table.

x	y
1	-7
2	-8
8	-14

y = _____

8) Solve for x if y = -8:

a) $y = x + 14$

b) $y = 4x - 92$

c) $y = 7x - 15$

d) $y = -2x - 78$

9) Solve for y if x = -9:

a) $y = -3x + 1$

b) $y = -7x - 4$

c) $y = 8x - 71$

d) $y = 2x - 86$

10) Simplify:

a) $-12 - 2(-3) - 4$

b) $63 + 9^2$

c) $2 \cdot 7 + 20 \div 5$

d) $37 + 20 \div -4$

11) Choose the inequality that represents the statement and then graph it on the line provided.

Lacey has flown at least 120 miles.

a) $x \leq 120$

b) $x \geq 120$

c) $x < 120$

d) $x > 120$



Show your work! Show your work! Show your work!