Name: _____ Date: _____

8th Grade Math Summer Packet

For each section make sure to show your work and explanations completely.

Section 1: Expressions

1. Simplify the following expressions.

a) $-10 + 4$

b) $2 - \frac{1}{2}(4)$

c) $(15 - 3) \div 2(3)$

d) $\frac{3^2 - 11 \cdot 3}{-2 \cdot 4}$

e) $-3(-1 + 4)^2$

f) $-5x + 4 - x$

g) $\frac{3}{4}(y + 8)$

h) $-6(x - 4) + 3x$

i) -9 - 5

2. Find the value of the expressions below if a = -2 and b = 3

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

3. Write an algebraic expression to represent each of the following situations.

a) Peter's age is five more than triple Ryan's age. How old is Peter have?

Ryan = x

b) Karen has two dollars less than half the amount of money that Jose has in his bank account. How much money does Karen have?

Jose = x

c) Gordon, Stephanie, and Rachel evenly split the cost of a pizza pie. How much does each person pay?

4. Determine which situation below can be represented by the expression: $3x - 6$

a) Jeff has six pencils less than a third of the amount of pencils Rob has.

b) Jeff has six pencils more than triple the amount of pencils Rob has.

c) Jeff has six pencils less than triple the amount of pencils Rob has.

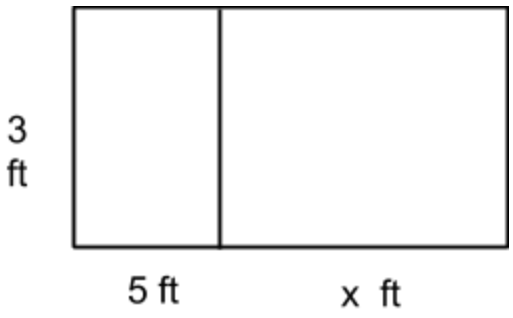
d) Jeff has six pencils more than a third of the amount of pencils Rob has.

Section 2: Properties

5. Rewrite the following expressions to illustrate the Commutative Property
   a) $2x + 4$ b) $(-3)(5)$ c) $3x + 4y - 2z$

6. Rewrite the following expressions to illustrate the Distributive Property
   a) $10(y - 4)$ b) $-3(4 - x)$ c) $2(5z + 9)$

7. Using the distributive property, write two equivalent expressions to represent the area of the figure.



Section 3: Solving Equations

8. Solve the following equations.

a) $-21 = 3x + 6$

b) $\frac{1}{2}y - 5 = 1$

c) $3m = m$

d) $-2(3b + 4) = 10$

e) $12n - 1 - 4n = -17$

f) $-7w - 2 = -16$

Section 4: Proportions

9. Determine if the following statements are true or false. Explain how you know.

a) $\frac{6}{2} = \frac{9}{5}$

b) $\frac{16}{24} = \frac{10}{15}$

c) $\frac{7}{21} = \frac{4}{12}$

10. Use proportional reasoning to solve each of the following questions.

a) Jackie McSpeedy can run 5 miles in 30 minutes. How far can Jackie run in two hours?

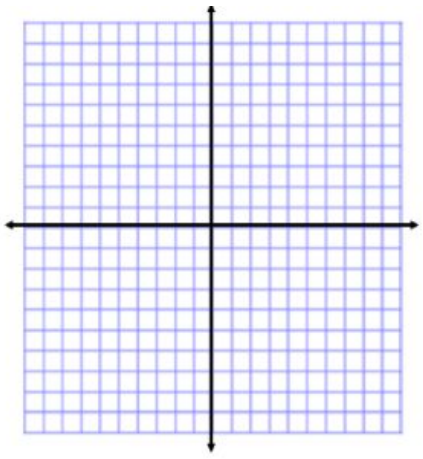
b) Mr. Smith can type 3 pages in 15 minutes. How many pages can he type in 45 minutes?

c) Chad went to the mall and bought a shirt that was originally $40, but was on sale for 25% off. How much did Chad pay for his shirt?

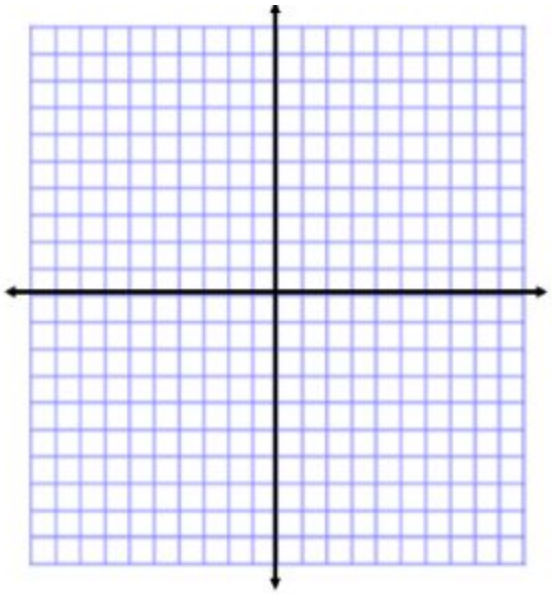
d) Sarah got 32 questions correct on an exam that had 50 questions. What percent did Sarah get correct on her exam?

Section 5: Graphing

11. Label the four quadrants on the coordinate plane below.



12. Plot the following points on the coordinate plane below. Label your points



Point A (-4, 5)

Point B (6, -2)

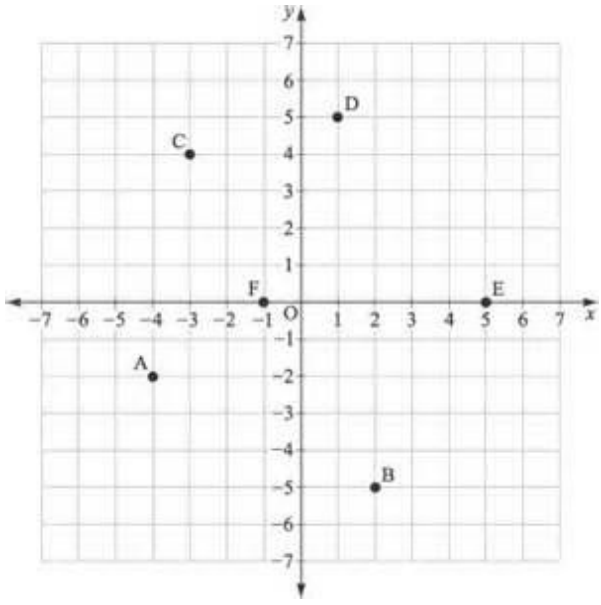
Point C (-2, -3)

Point D (5, 8)

Point E (0, 4)

Point F (-2, 0)

13. Determine the coordinates of the points below



A:

B:

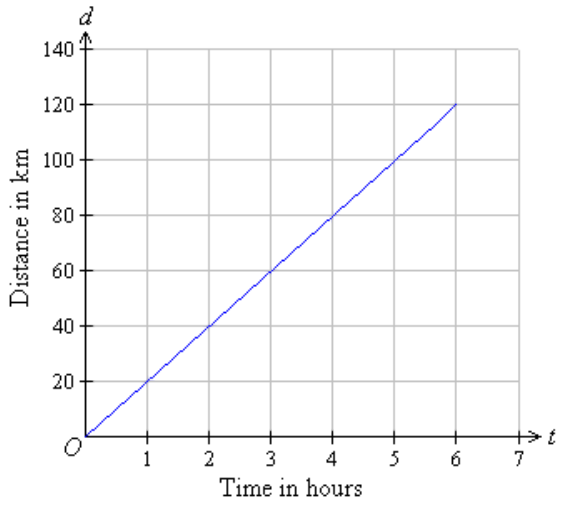
C:

D:

E:

F:

14. The following graph represents the distance a bicyclist travels over time.

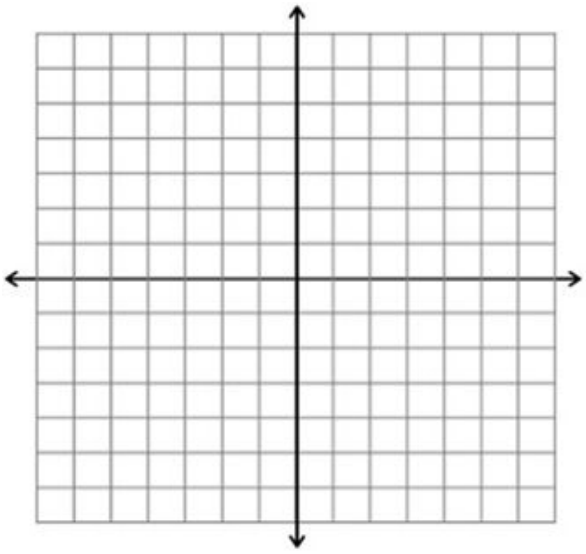


a) How fast is the bicyclist traveling per mile? Explain how you know.

b) How far will the bicyclist travel after 8 hours?

15. Graph the following equations on the coordinate planes below. Fill in the table base on the equation.

a) y = x



x	y
-2	
-1	
0	
1	
2	
3	