

Turn On to Algebra (5 - 6)

Name _____

Read each problem carefully. Answer as many as you can. Write answers clearly. You may write on this test. You may not use a calculator.

1. Fill in the missing numbers on the input-output chart. Write the rule or function on the answer line provided.

Input	2	13	3	0	(b)	100	40
Output	7	29	(a)	3	17	203	(c)

a. _____

b. _____

c. _____

d. rule or function: _____

2. Tanya has read the first 78 pages of a 130-page book. Write an equation to show the number of pages Tanya has to read to finish the book. Use a **variable** in your equation.

3. Solve the equation $x = (a - b) - c$ when $a = -10$, $b = 3$, and $c = -4$

x = _____

4. Solve the equation $y = 3x + 5$. Find y when $x = 4$.

y = _____

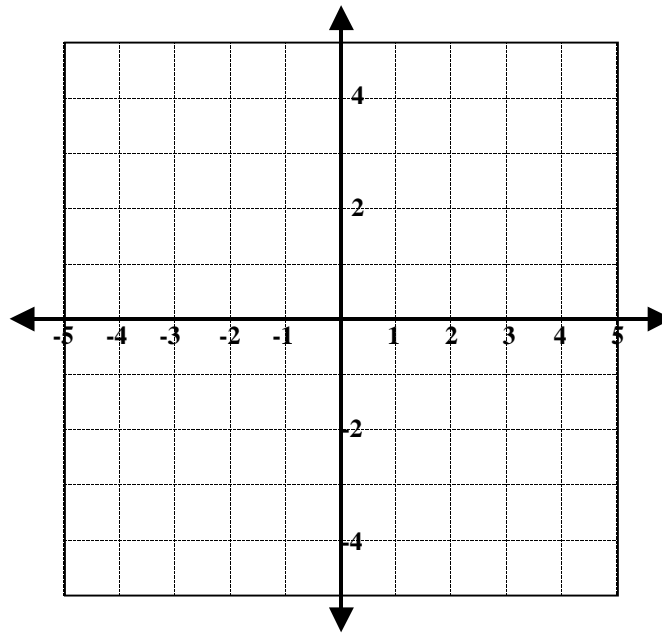
5. Plot these points and label each point with the correct letter:

A. (4, 3)

B. (-3, 2)

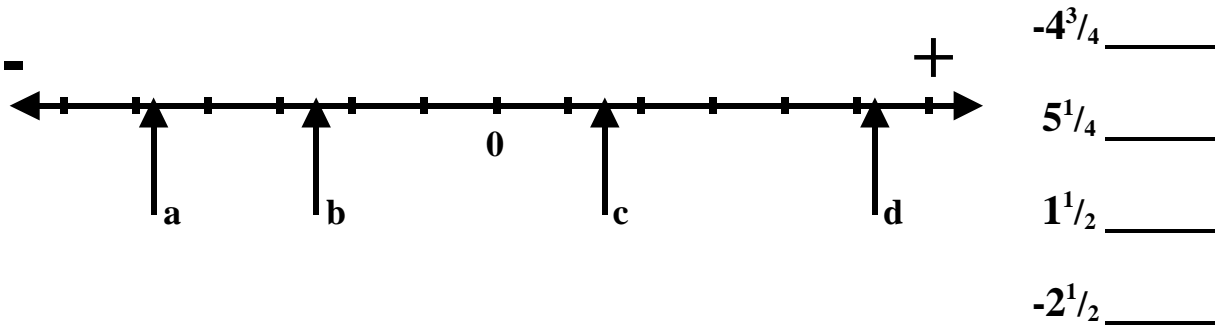
C. (-2, -5)

D. (5, -1)



6. Every car is charged \$3 to park. Write an expression for the total charges if there are x number of cars.

7. Decide where each number belongs on the number line. Record the letter next to the number.



8. Put an operation sign in each circle \bigcirc so that the equation is balanced.

$$24 \bigcirc 6 = 36 \bigcirc 2$$

13. Find the missing numbers that are represented by the letters m and t to make this equation equal.

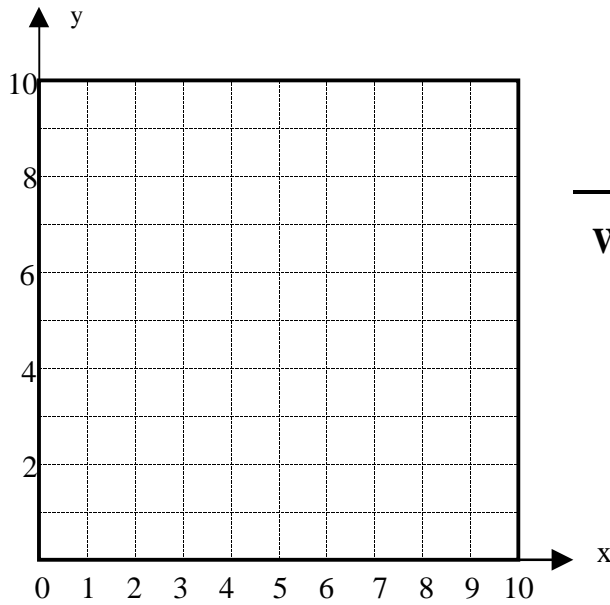
$$7 + m = 2t$$

m = _____

t = _____

14. Plot the following ordered pairs:

(1,4) (2,5) (3,6) (4,7) (5,8)



Write the formula for the function.

15. Write a number in the square and the correct symbol (<, >, =) in the circle to make the statement true.

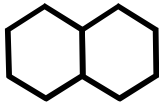
$$120 \text{ } \bigcirc \text{ } 103 + \text{ } \square$$

$$\square + 9 \text{ } \bigcirc \text{ } 8 + 5$$

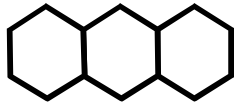
16. By connecting 2 or more hexagons, the number of outside (non-touching) edges changes with each hexagon added.



term 1



term 2



term 3

Looking at the number of outside edges, we can create the following chart.

INPUT	OUTPUT
TERM 1	6
TERM 2	10
TERM 3	14
TERM 4	?

Find a pattern in the hexagon sequence and t- table to answer the following questions.

a. How many outside edges (output) are in the 4th term? _____

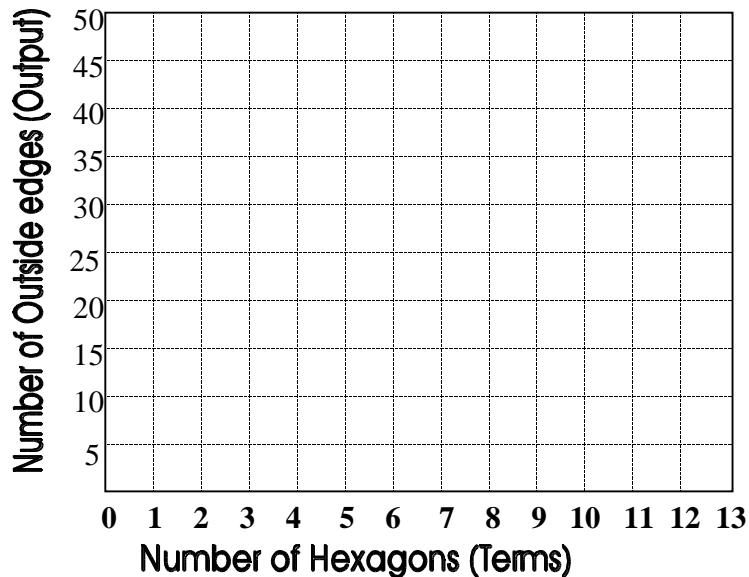
b. How many outside edges (output) will be in the 7th term? _____

c. How many outside edges (output) will be in the 20th term? _____

d. Describe in words the pattern that helped you determine the 7th and 20th term.

e. Write an algebraic expression that describes your rule or function. _____

f. Plot the first 10 terms of the function.



g. List 4 things about the graph you plotted for this function.

17. Mary has \$29.00 in the bank. She adds \$22.00 more each month.
Write a formula for this problem.

18. Solve each problem.

a. $10 + 4 \times 6 - 3 =$ _____

b. $9 - 6 \div 2 + 5 =$ _____

19. Fill in the missing numbers on the input-output chart. Write the rule or function on the answer line provided.

Input	0	-6	4	(b)	100	-8
Output	0	(a)	24	-12	(c)	-48

a. _____

b. _____

c. _____

d. rule or function: _____