



Workout Section

1. Given the following table of values, find the rule that represents the situation below.

x	y
-9	6
-6	5
-3	4
0	3

2. Given the following table of values, find the rule that represents the situation below.

x	y
-20	-10
-15	0
-10	10
-5	20

3. Given the following table of values, find the rule that represents the situation below.

x	y
-4	3
-3	5
-2	7
-1	9

4. Given the following table of values, find the rule that represents the situation below.

x	y
0	1
2	4
4	7
6	10

5. Given the following table of values, find the rule that represents the situation below.

x	y
1	-10
2	-20
3	-30
4	-40

6. Given the rule of the sequence below, identify correctly the rank r of the term $t = 25$.

$$t = r + 17$$

7. Identify correctly the rule of the sequence below, where we start with $n = 1$.

$$1, 4, 9, 16, 25, 36, 49, 64, \dots$$

8. Given the rule of the sequence below, identify correctly the rank r of the term $t = 15$.

$$t = r + 6$$

9. Identify correctly the first four terms of the sequence below that starts with $n = 0$.

$$t = n^2 + 13$$

10. Identify correctly the first five terms of the sequence below that starts with $n = 0$.

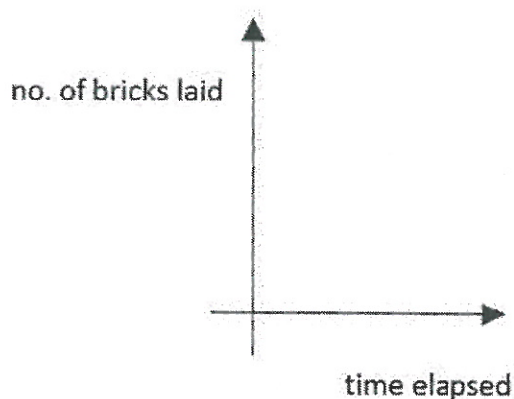
$$t = 2^n$$



11. In the following situation, determine what is constant and what is variable:

Since the year 2000, the surface area of Africa, and the number of animals in the forests in Africa.

12. Given the graph below, identify the dependent variable.

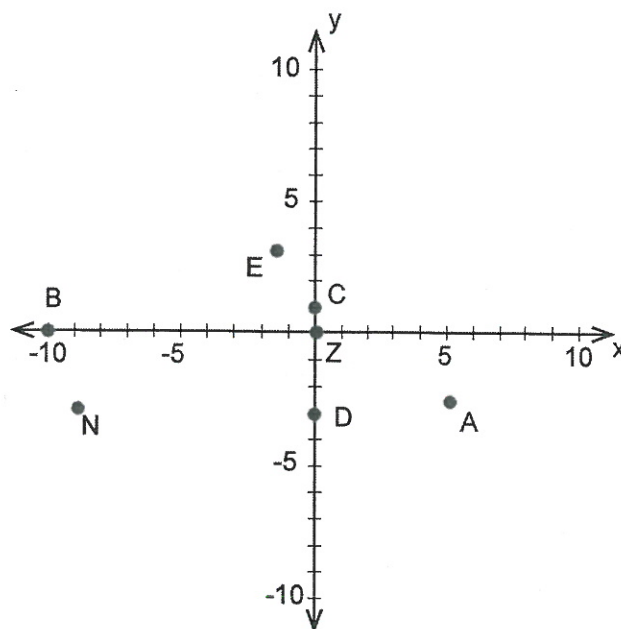


13. A pond contains 1000 litres of water. It is being drained at a rate of 50 litres per hour. Consider the relationship between the volume of water left in the pond and the time elapsed. Identify the independent variable.

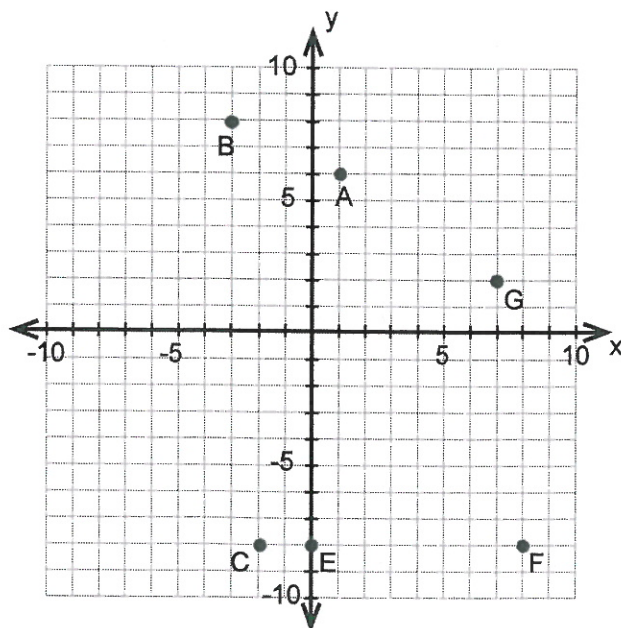
14. At a Polo club, every game played costs \$4. Consider the relationship between the number of games played and the amount paid. Identify the independent variable.

15. Tina works at as a tourist guide. She earns \$20 from every tourist. Consider the relationship between the number of tourists she guides and the total amount of money she earns. Identify the dependent variable.

16. Given the points in the Cartesian plane below, identify the point that is at the origin.

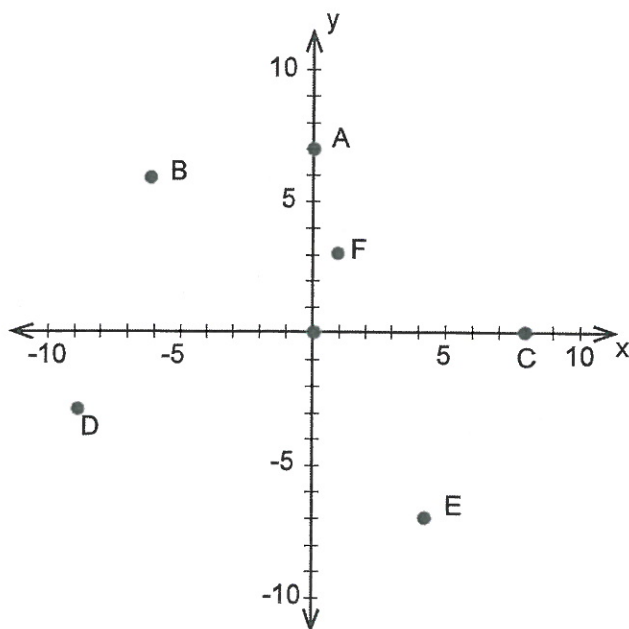


17. Which of the following points in the Cartesian plane below has coordinates $(-2, -8)$?

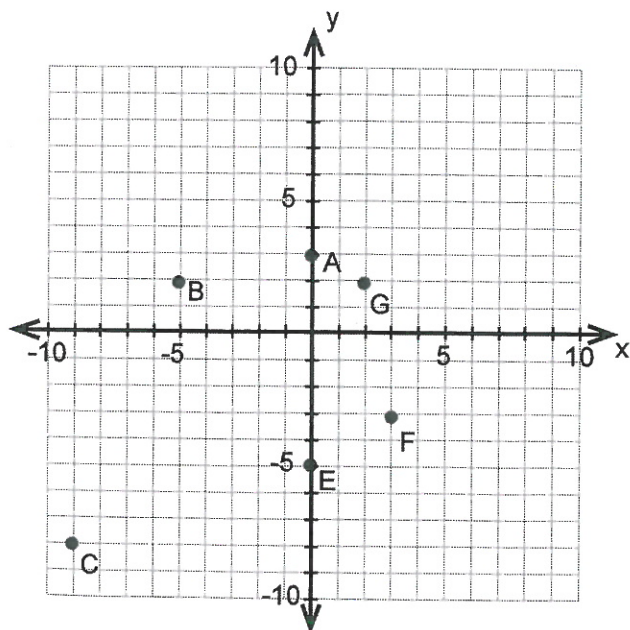




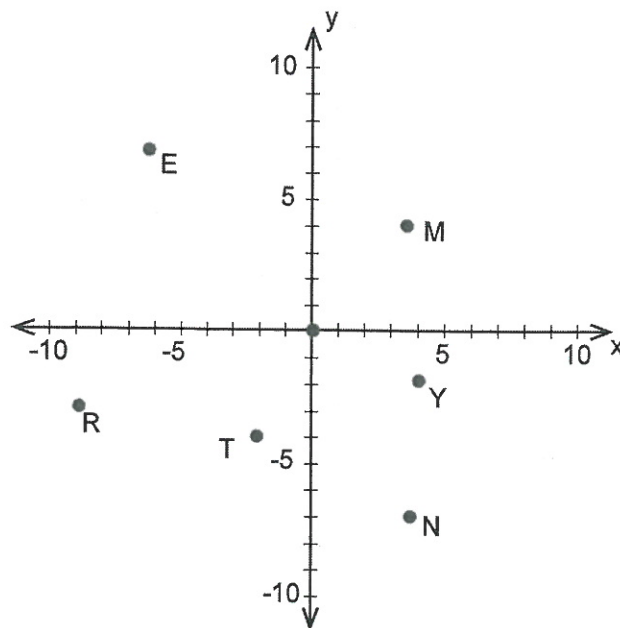
- 18.** Given the points in the Cartesian plane below, identify the point(s) that are on x -axis.



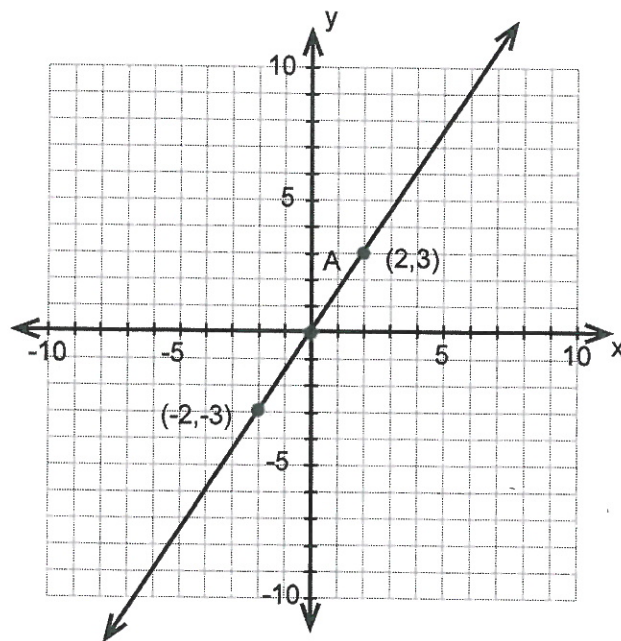
- 19.** Which of the following points in the Cartesian plane below has coordinates $(2, 2)$?



- 20.** Given the points in the Cartesian plane below, identify the point(s) that are in the 1st quadrant.

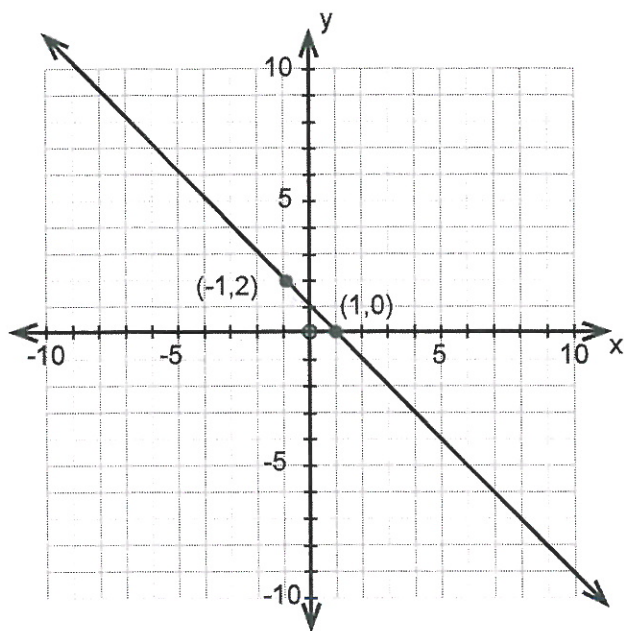


- 21.** Given the graph below, determine the rule that relates the y -values to the x -values.

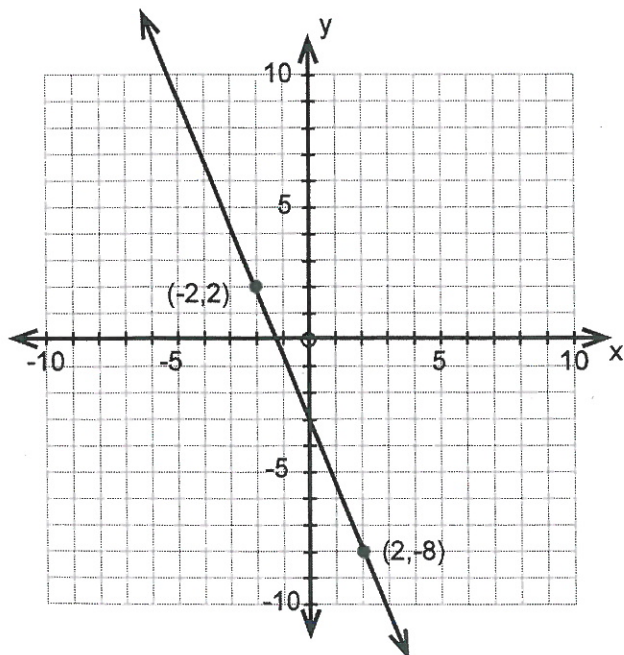




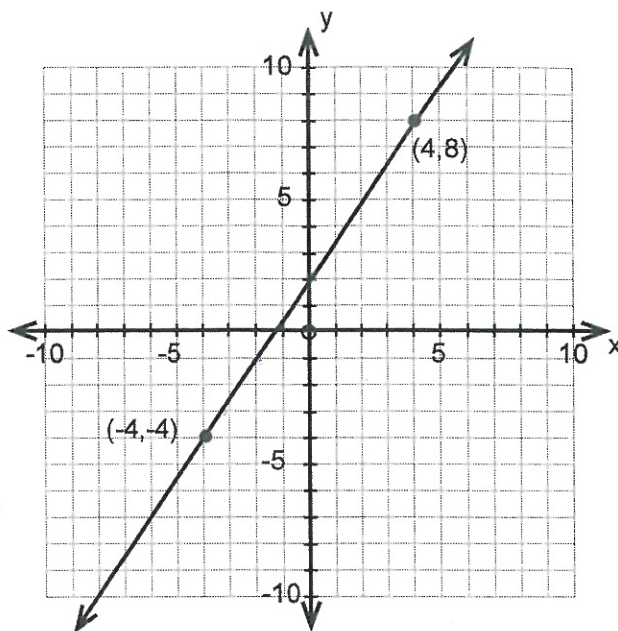
- 22.** Given the graph below, determine the rule that relates the y -values to the x -values.



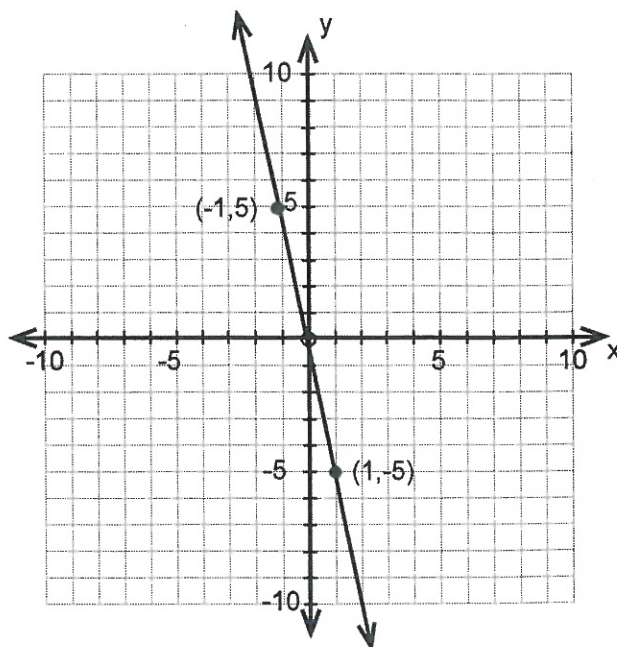
- 23.** Given the graph below, determine the rule that relates the y -values to the x -values.



- 24.** Given the graph below, determine the rule that relates the y -values to the x -values.



- 25.** Given the graph below, determine the rule that relates the y -values to the x -values.





- 26.** Identify each of the coordinates for the table of values below.

x	y
-4	8
-1	2
6	3
7	-5

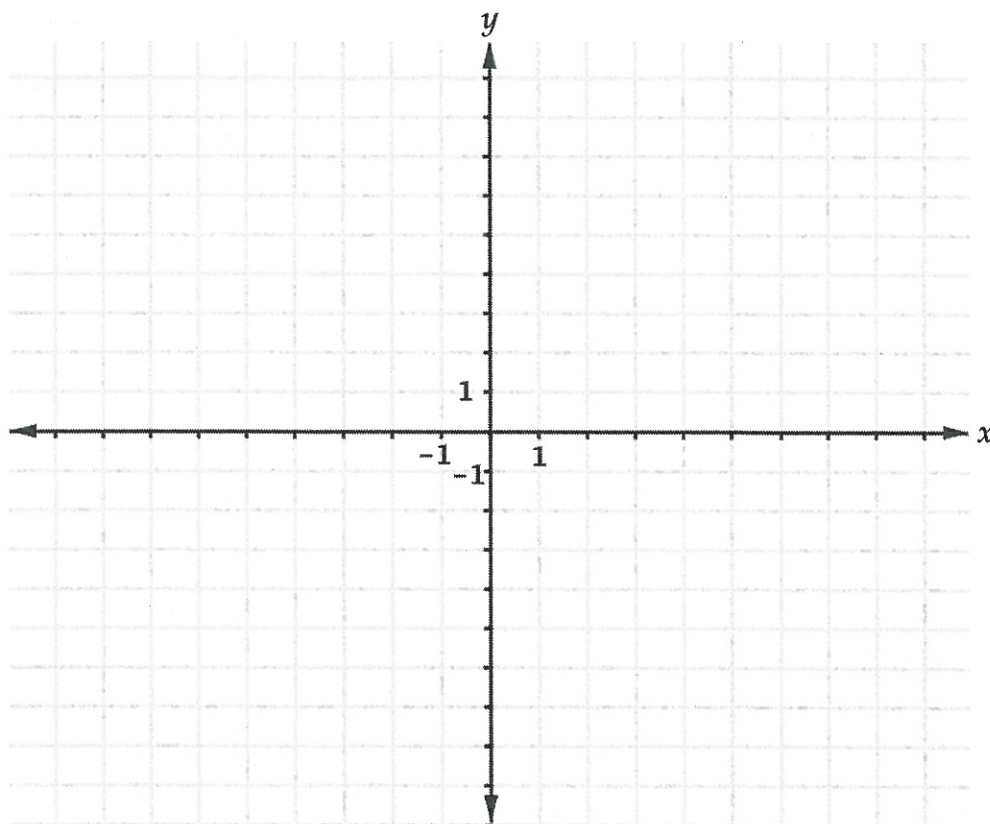
- 27.** Identify each of the coordinates for the table of values below.

x	y
5	2
7	-1
-8	3
9	-6

Introduction to Functions: Chapter Test 1

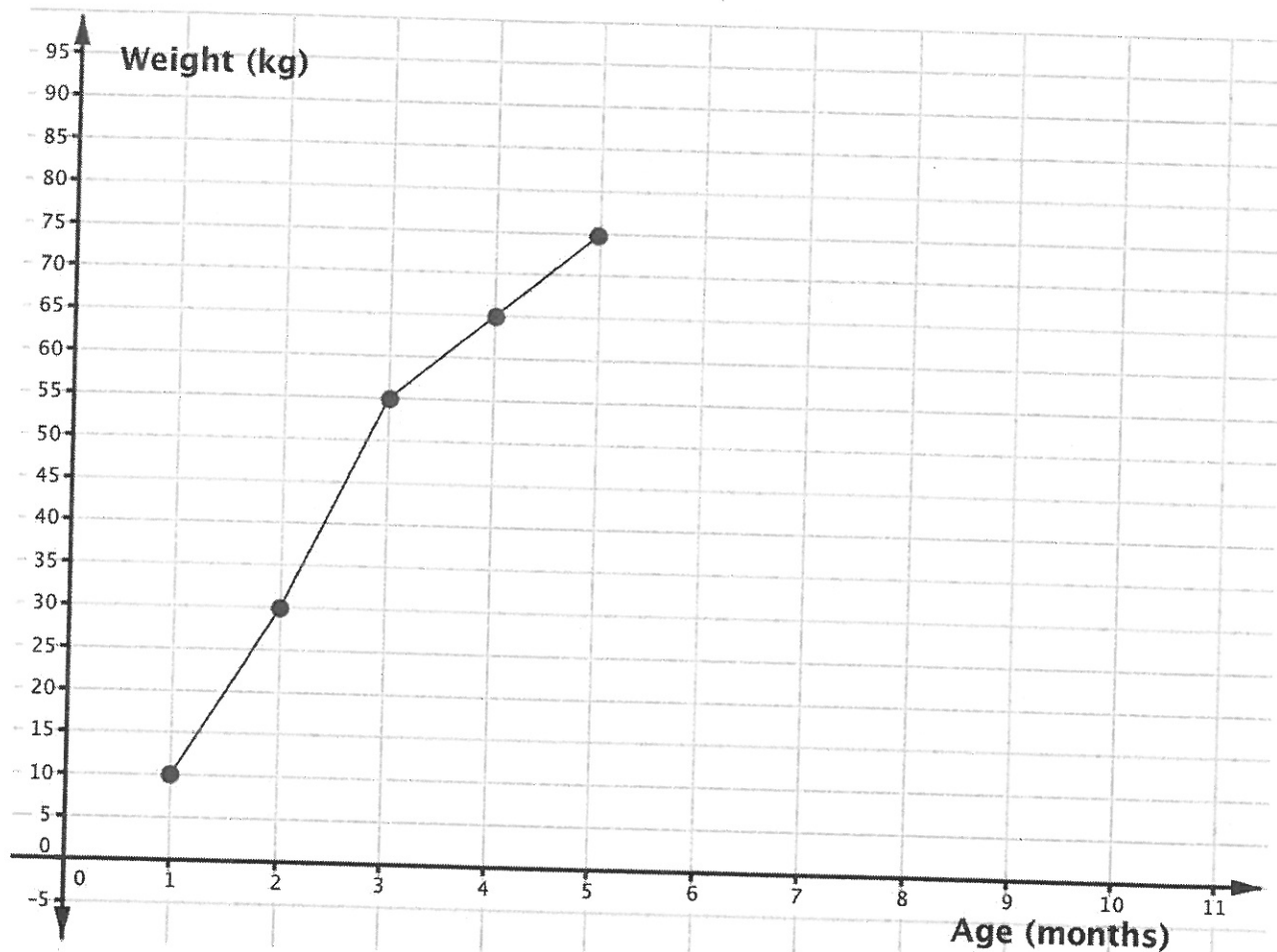
1. Give the next 3 terms in the sequence: $\frac{-1}{9}, \frac{1}{3}, -1, 3, _, _, _$.
2. Using the rule $t = r + 2$, find the sum of the terms (t) which have ranks (r) of 0, 3 and 7.
3. Plot and label the following coordinates on the Cartesian plane below:

A (0,-2); B (3,0); C (-3,5); D (-5,-9); E (-3,-3)



4. In the following scenarios identify the dependent variables by circling them:
 - a. Ice cream sales are said to go up when the temperature gets hotter.
 - b. As it was getting closer to game time, the number of spectators entering the stadium increased.
 - c. To assist the growth of a plant, fertilizer is added to the soil on a regular basis.

5. The following graph shows the increase in weight of a Saint Bernard puppy over the span of a year:



Fill in the following table of values to represent this situation:

Age of puppy (months)	Weight of puppy (kg)

6. Use the table of values below to obtain a rule.

a.

x	y
2	3
3	8
4	15
5	24

b.

x	y
0	-2
1	3
2	8
3	13

7. Given the rule below, complete the following table of values.

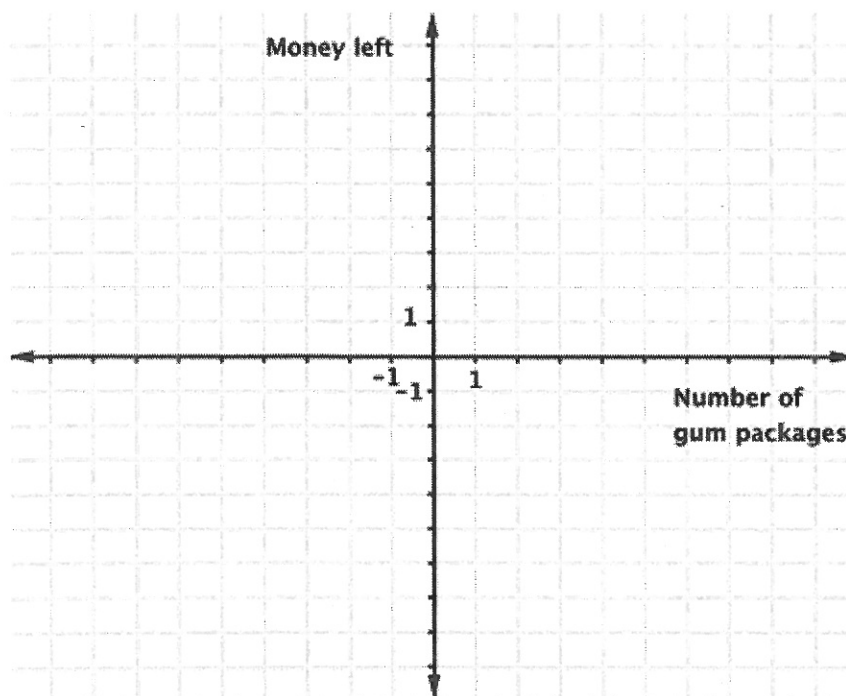
a. $y = 3x - 1$

x	y
-2	
1	
4	
8	

b. $y = 2x^2 + 1$

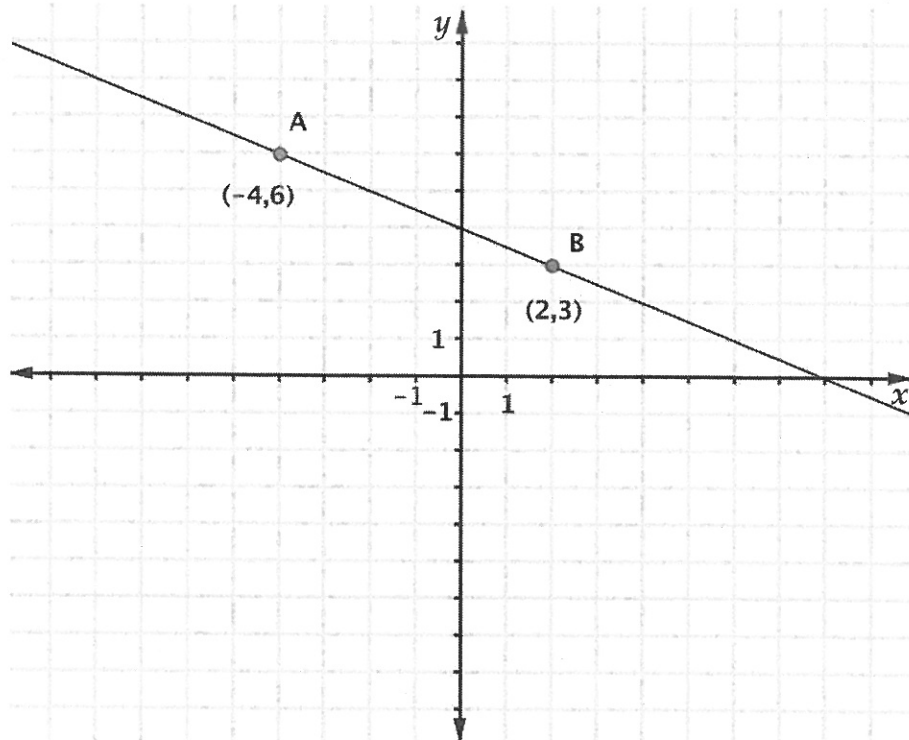
x	y
-2	
1	
4	
5	

8. The rule that relates the money left over and the number of packages of gum bought at \$2 each, if a person had \$10 at the start is given by $y = 10 - 2x$. Complete the table of values and plot the coordinates obtained on the Cartesian plane.

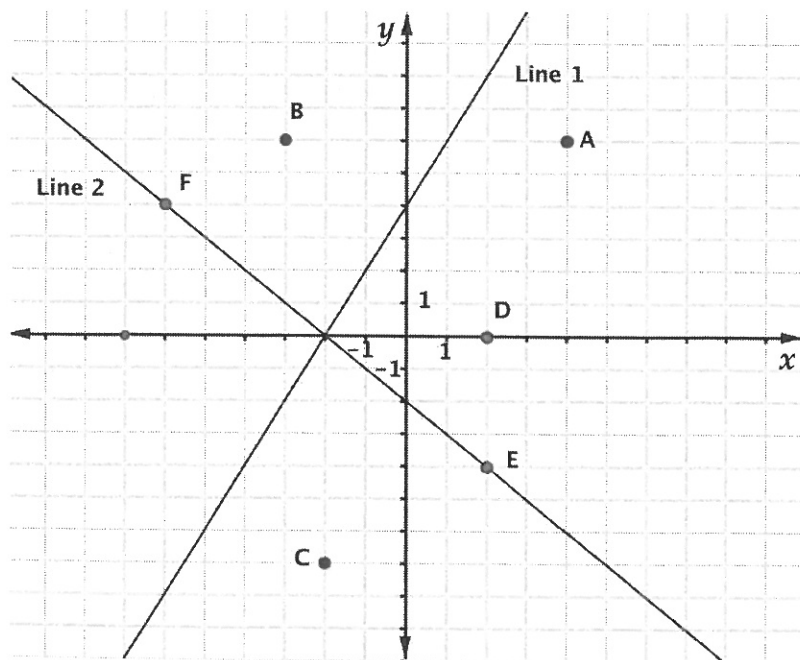


Number of gum packages	Money left(\$)
	8
2	
	2
5	

9. Given the graph below, determine the rule that relates the y-values to the x-values.



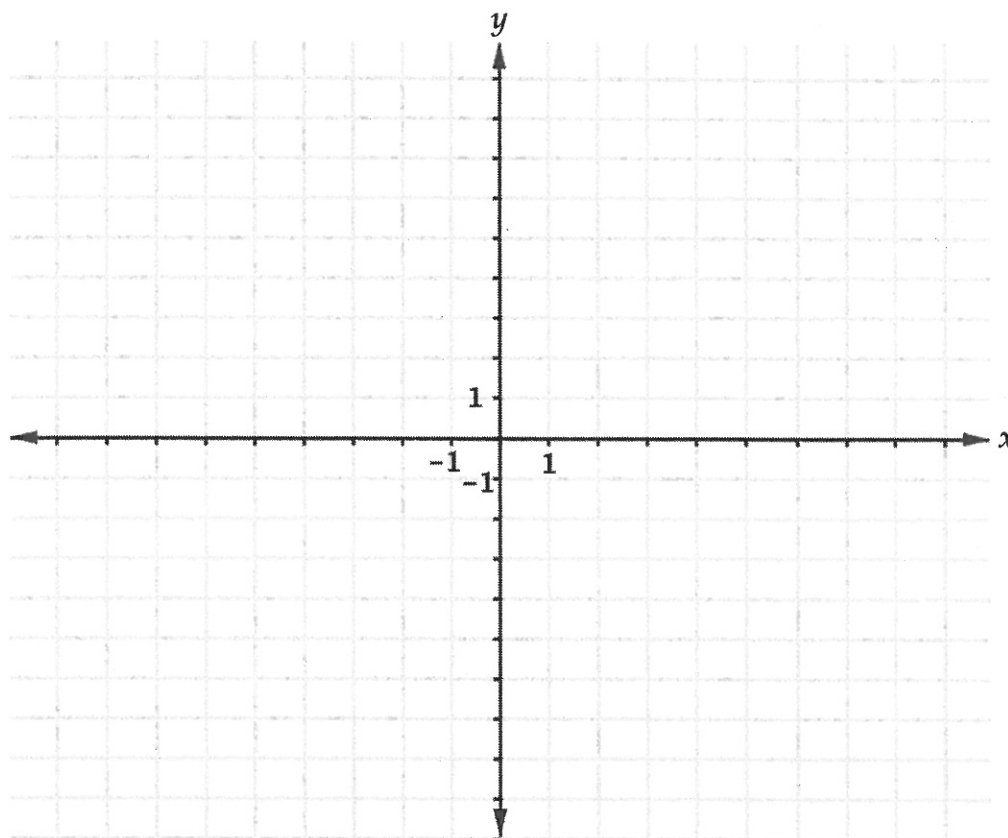
10. Match the statement with the element on the graph.



1. The rule for line 2 is	a. Line 1
2. Point D has a coordinate	b. $y = x - 4$
3. The line with a rate of decrease	c. $y = -x - 2$
4. Line 1 has an initial value of	d. Line 2
5. Point F is in quadrant	e. (2,0)
	f. Quadrant Two
	g. (0, -2)
	h. (4,0)
	i. Quadrant One
	j. (0,4)

Extension

11. Draw a line that such that it has a decreasing rate and it intersects with the x-axis at -2. Label and name 3 other coordinates on your line. Give the rule of your line.



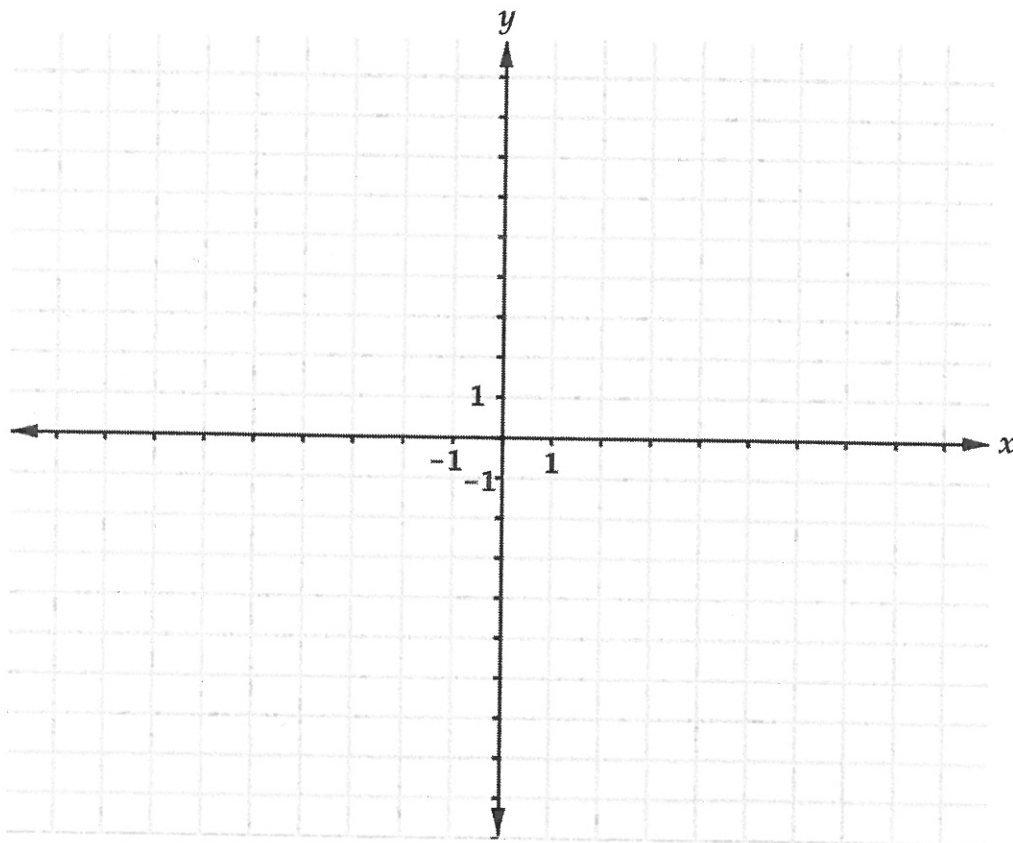
12. Plot the coordinates obtained from table A and B on the Cartesian plane below. Connect the coordinates from table A to form a line. Connect the coordinates from table B to form a second line. At what coordinate do the two lines meet?

Table A

x	y
0	8
1	3
2	-2
3	-7

Table B

x	y
3	-7
5	-3
8	3
9	5



Introduction to Functions: Chapter Test 2

1. Find the difference in term (t) for the following two sequence rules if the rank (r) is 2:

Sequence 1: $t = \frac{14}{r} + 6$

Sequence 2: $t = 3 - r^2$

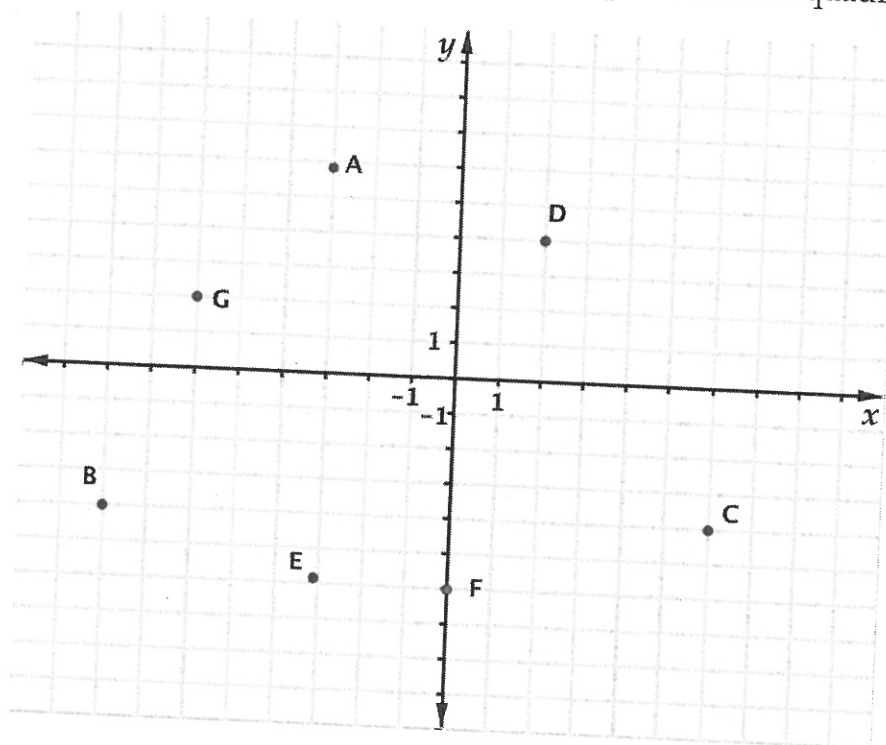
2. The following rules apply to two different sequences:

Sequence 1: $t = 2r - 7$

Sequence 2: $t = -5r + 7$

For what rank are the two terms the same?

3. From the graph below, identify the coordinate of each point and the quadrant in which it is located.

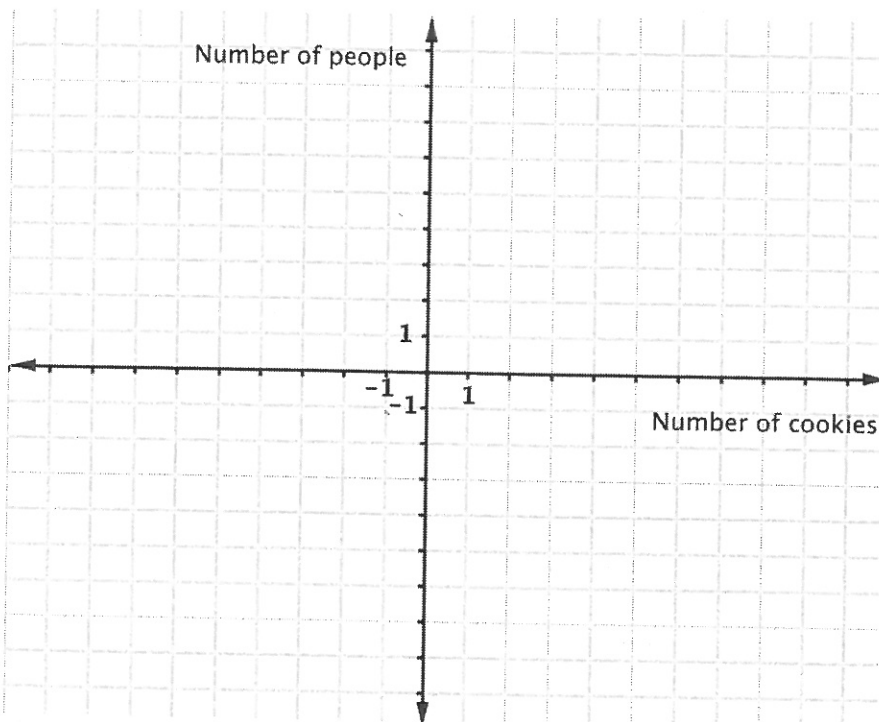


Point	Coordinate	Quadrant
A		
B		
C		
D		
E		
F		
G		

4. For a science experiment a class was asked to construct parachutes. They were given the following materials to build their parachutes: string, elastic bands, paper, cardboard, tissue paper, newspaper and aluminum foil. They had to time the fall of the parachute. They were allowed to modify the shape of the parachute and the distance at which they released their parachute. Among the following, identify the variable as either independent or dependent.

Variable	Independent	Dependent
Materials used		
Timing of fall		
Shape of chute		
Distance of fall		

5. Given the following table of values that relates the number of cookies available and the number of people that these are shared with, identify the coordinates and plot these on the Cartesian plane.



Number of cookies	Number of people	Coordinate
10	1	
5	2	
2	5	
1	10	

6. Given the following rules, complete the table of values below:

a. $y = 7 - 3x$

x	y
-3	
	7
3	
5	

b. $y = \frac{10}{x}$

x	y
1	
2	
	2
10	

7. Given the following table of values, find the rule.

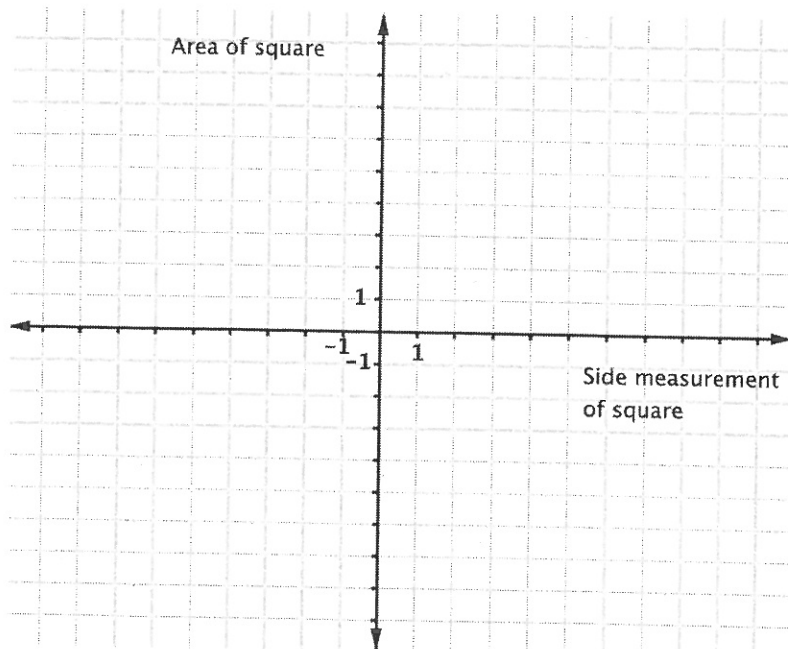
a.

x	y
2	6
3	4
4	3
12	1

b.

x	y
0	9
1	6
2	3
3	0

8. The rule that relates the measurement of the side of a square and its area is given by $y = x^2$. Complete the table of values and plot the coordinates obtained on the Cartesian plane.



Sides Measurements of a square (cm)	Area (cm ²)
1	1
	4
3	

9. Given the graph below, determine the rule that relates the y-values to the x-values.

