

NAME _____ DATE _____ PER. _____

FALL FINAL EXAM REVIEW – ALGEBRA 1**Solve.**

1. $24 = 6 - 3v$

2. $12 = -3(c + 5)$

3. $5 - 2(x - 3) = 63$

4. $7x + 2 = 5x + 8$

5. $\frac{r+1}{10} = \frac{3}{-2}$

6. $\frac{x+1}{5} = \frac{2x+2}{-4}$

Write an equation, and then solve.

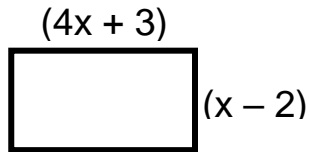
7. Ben joined The Fitness Place for an initial membership fee of \$55 and \$32 per month. If he paid a total of \$279, how many months was Ben a member?

Equation: _____

8. A decorator charges \$40 for an initial consultation, then \$80 per hour. Another decorator just charges \$90 per hour. How long is a job for which the two decorators charge the same price?

Equation: _____

9. If the perimeter of the rectangle below is 42, find the value of x .



Equation: _____

Solve.

10. $9 - 3d > -9$

11. $3t - 6 > 6(t + 1)$

Write an inequality, and then solve.

12. Tammy earns money by mowing lawns for her neighbors. She currently has \$75 and plans to mow lawns until she has at least \$200 in savings. If she earns \$20 for every lawn she mows, how many more lawns does she have to mow to reach her goal?

Inequality: _____

Simplify.

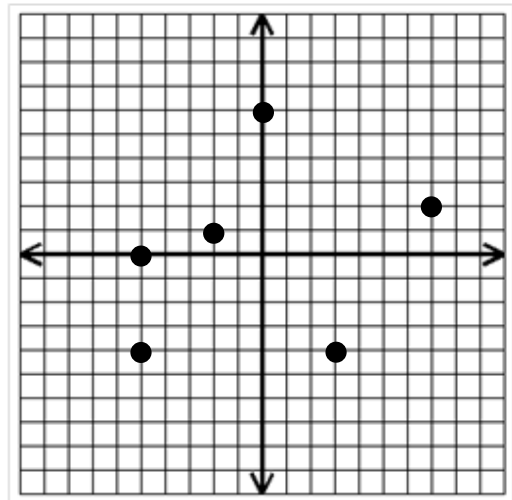
13. $-4a^4 \cdot -5a^3$

14. $\frac{-15a^4b^3}{18a^2b^6}$

15. $\frac{20a^{-5}b^6c^0}{4a^6b^2}$

16. $\frac{(6a^2)(4a^6)}{3a^7}$

Use the graph shown to answer the questions 17-20.



17. List the ordered pairs

18. Create a mapping.

x y

19. Identify the domain and range.

D = _____

R = _____

20. Is this relation a function? YES or NO

Why or why not?

Answer the following.

21. Which of the following mappings represents y as a function of x?

A.

B.

C.

22. Which of the following sets does not represent a function?

A. $\{(-1, 2), (-2, 2), (-3, 2), (-4, 2)\}$

B. $\{(-5, 4), (-1, 5), (-5, 2), (-1, 7)\}$

C. $\{(5, -2), (-3, 6), (1, 8), (7, 5)\}$

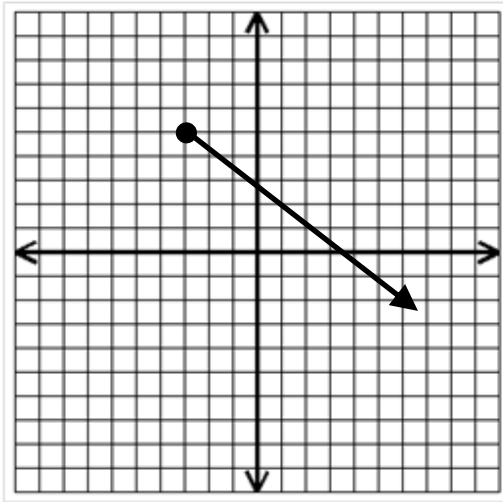
D. $\{(6, -2), (3, 9), (-3, 5), (9, -1)\}$

23. Find the range for $f(x) = -3x^2 + 4$ for the domain $D = \{1, -2, -3\}$

24. If $f(x) = 2 - 3x$ find $f(-3)$.

Identify the domain and range of each graph.

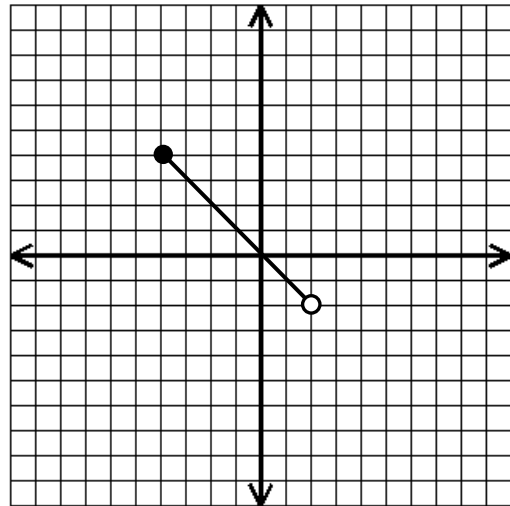
25.



D = _____

R = _____

26.



D = _____

R = _____

27. Mrs. Barrett is planning to place a fence around her vegetable garden. The fencing costs \$1.85 per yard and the delivery fee is \$65.50.

a) Write an equation that can be used to find the total cost, c , of y yards of fencing.

Equation: _____

b) How much would it cost for 75 yards of fencing? _____

c) If the total cost is \$141.72, how many yards of fencing were purchased? _____

d) *Circle one:* The domain of this relationship is discrete / continuous.

e) _____ Mrs. Barrett estimates that she needs between 50 to 60 yards of fencing to enclose her garden. What is a reasonable range for this situation?

A. $156 \leq c \leq 178$

C. $158 \leq c \leq 176.5$

B. $\{156, 178\}$

D. $\{158, 176.5\}$

28. Suppose the total cost, C , of renting a car is \$25 per day, d , plus an initial fee of \$100.

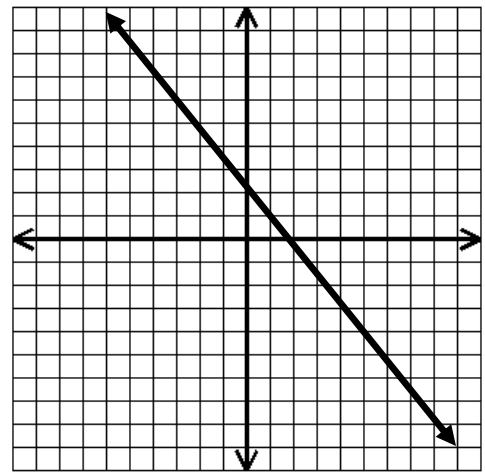
a) Write a function that best describes this relationship if d represents the number of days the car is rented.

b) What would be the total cost of renting a car for 9 days?

c) Find the number of days you could rent a car for \$275.

29. Determine the slope of the line shown.

$m =$ _____



30. Find the slope of the line through the points $(3, 7)$ and $(-1, -4)$.

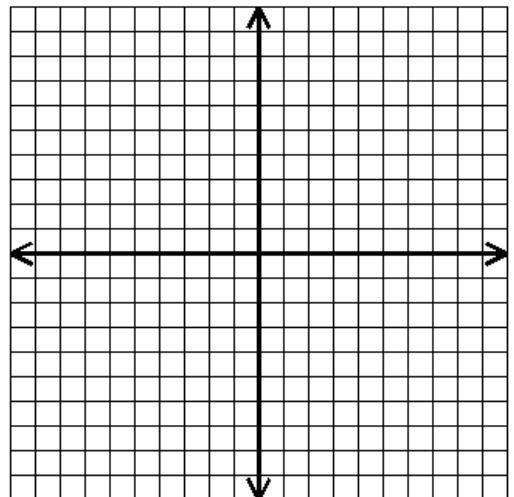
$m =$ _____

Identify the slope and y-intercept, then sketch the graph of each equation.

31. $y = \frac{3}{5}x - 4$

$m =$ _____

$b =$ _____

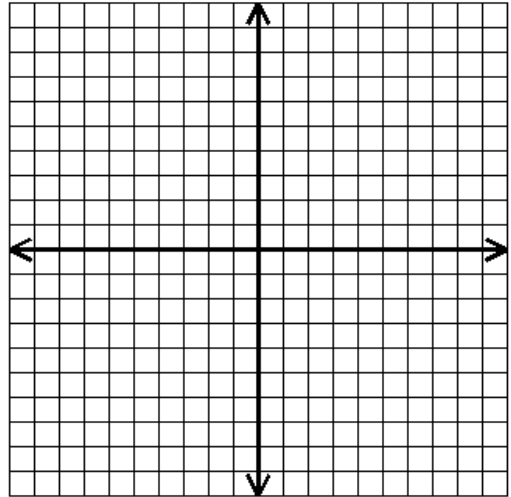


Identify the slope and y-intercept, then sketch the graph of each equation.

32. $4x + 2y = 10$

$m =$ _____

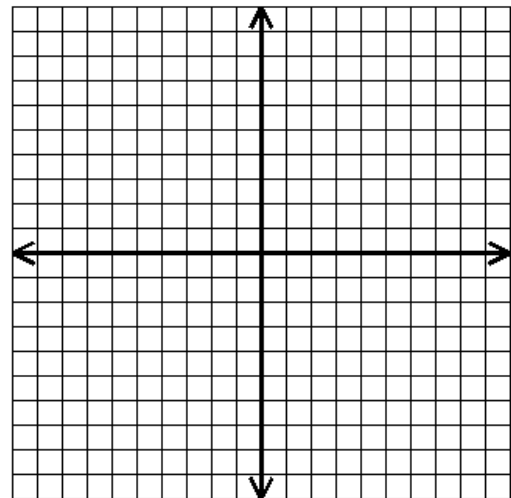
$b =$ _____



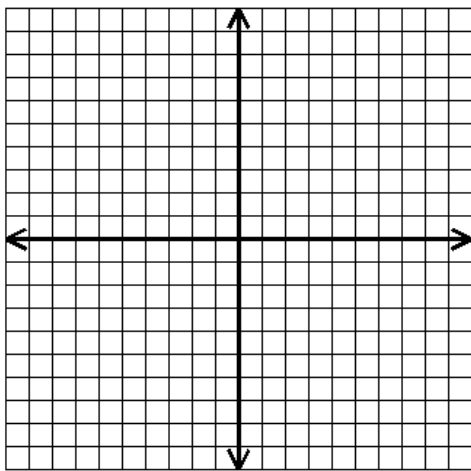
33. $3x - y = 5$

$m =$ _____

$b =$ _____



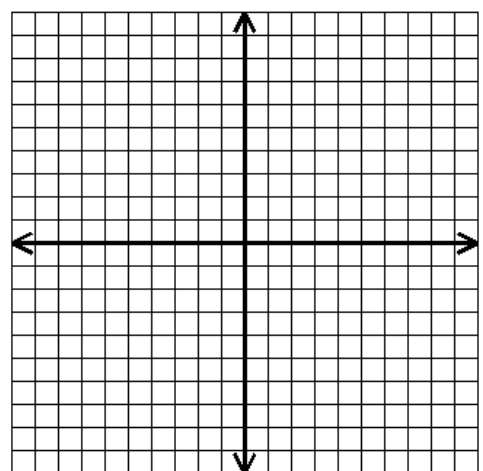
34. $y = -5$



$m =$ _____

$b =$ _____

35. $x = 4$

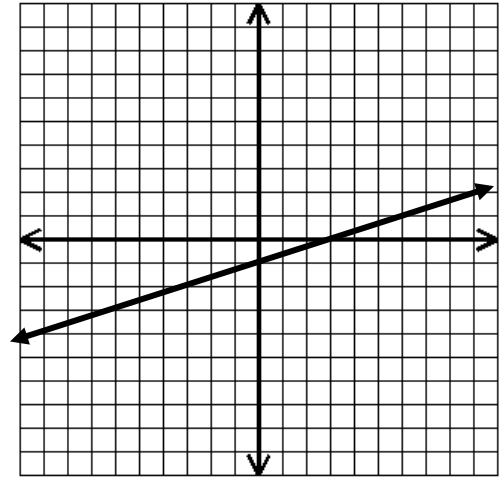


$m =$ _____

$b =$ _____

36. What is the equation of the line shown in the graph?

Equation: _____



37. Find the rate of change and y-intercept of the line with the equation $5x - y = 6$.

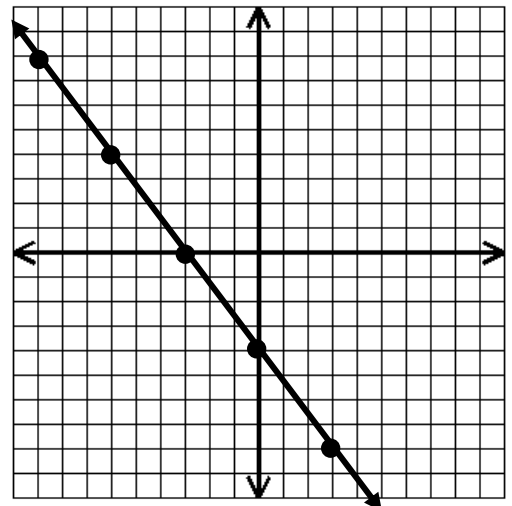
38. If $(x, -6)$ is a solution to the equation $3x + 2y = 18$, what is the value of x ?

39. If the point $(5, y)$ is a solution to the equation $2x - 4y = 30$, what is the value of y ?

40. Using the graph shown answer the following.

a) What is the x-intercept?

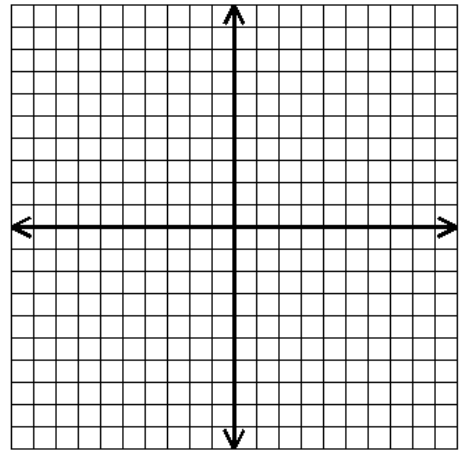
b) What is the y-intercept?



Using the given information, write the equation of each line.

41. _____	has a slope of -4 and goes through the point (-6, 2)
42. _____	passes through (2, 7) and (-4, 4)
43. _____	x-intercept of 6 and y-intercept of 4
44. _____	has a y-intercept of -12 and a rate of change of -6
45. _____	parallel to $y = \frac{5}{3}x + 2$ and goes through (-6, -3)
46. _____	perpendicular to $y = 6x + 1$ and goes through (12, -5)
47. _____	a horizontal line that passes through the point (9, -6)
48. _____	a line with an undefined slope that passes through the point (-6, 3)

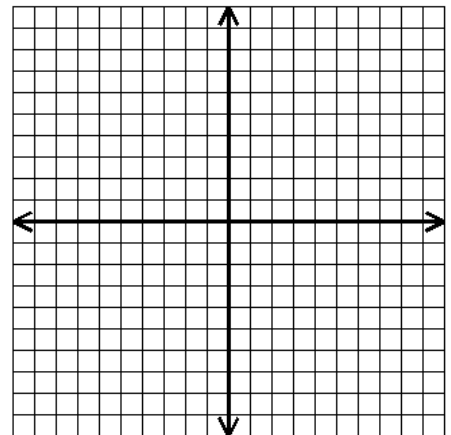
49. Graph $6x + 2y < -14$



50. In #49, which of the following coordinates represents a solution to the inequality?

- A. (1, 10)
- B. (-4, 2)
- C. (-2, 1)
- D. (-1, -4)

51. Graph $x + y > 3$
 $-4x + y \leq 4$



52.	x	1	2	3
	y	3	5	7

- a) Find the function that could be used to represent the table above.
- b) What is the value of y when x is 5?

53. Does the table shown represent a direct variation? If so, write its equation.

x	y
3	9
6	18
9	27

54. If y varies directly as x, and y is 72 when x is 30, find the equation that represents this situation.

Answers in Random Order:

4	-16	$\frac{-5a^2}{6b^3}$	$y = 2x + 1$	(0, 5) or 5	(0, -4) or -4	$x \geq -3, y \leq 5$
-1	$x < -4$	8a	$y = \frac{1}{2}x + 6$	$y = -4x - 22$	Yes	{-5, -2, 0, 3, 7}
-9	$x < 6$	4	$y = -\frac{1}{6}x - 3$	$y = \frac{12}{5}x$	5	$-4 \leq x < 2$ $-2 < y \leq 4$
3	$x \geq 7$	325	$y = \frac{5}{3}x + 7$	(0, -5) or -5	0	{0, -4, 1, 6, 2}
7	B	$20a^7$	$x = -6$	continuous	$\frac{-5}{4}$	{-23, -8, 1}
-6	B	-2	$y = -6$	10	(-3, 0)	$c = 1.85y + 65.5$
$\frac{5b^4}{a^{11}}$	C	41.2	$y = -\frac{2}{3}x + 4$	$y = \frac{1}{3}x - 1$	3	{(-5, 0), (-5, -4), (-2, 1), (0, 6), (3, -4), (7, 2)}
$\frac{3}{5}$	C	none	$y = -6x - 12$	(0, -6)	(0, -4)	(0, -5) or -5
-26	11	$\frac{11}{4}$	7	-5	11	No; x's are not all different
			undefined	204.25	$y = 3x$	$C = 25d + 100$

