

## Linear Equations and Slope Review

Name \_\_\_\_\_ Period \_\_\_\_\_

1. Does this table show variable values from a linear function? If yes, determine the function (what is the rule?). If no, tell what prevents it from being a function.

x	1	2	3	4	5
f(x)	11	14	17	20	23

2. Are these sets of ordered pairs points on a linear function? If yes, determine the function (what is the rule?). If no, tell what prevents it from being a function

(1, 8) (2, 20) (3, 32) (4, 44) (5, 56)

- a. No, there is no constant rate of change.
- b. No, it is not a function because one value of x generates more than one value of f(x).
- c. Yes, the function is  $f(x) = 12x - 4$
- d. Yes, the function is  $f(x) = -4x + 12$

3. Which of the following equations will have a graph of a zero slope?

- a.  $y = -2$
- b.  $y = -4x$
- c.  $y = 3x + 5$
- d.  $x = 4$

4. Which set of equations contain exactly 3 examples of linear functions?

Set I	Set II	Set III
$0 = -3x + 12x + 9$	$-3x + 9 = 12x + 7$	$y = -2x$
$(y+3) = 4(x - 12)$	$-5 = 10xy$	$3x + 12 = -7x - 12 + 8y$
$-2 = \frac{3}{5}y(-x + 5y)$	$x = -6$	$4 = \frac{1}{6}x - 8y$
$-2 = (3x + 10y)$	$y = 3$	$y^3 = 2 - 10x$
$4x + 7y = -8$	$2y - 10 = -6y - 10$	$-4 = -2x + 8y$

- a. Set I only
- b. Set II only
- c. Set III only
- d. Sets I and II
- e. Sets I and III
- f. Sets II and III
- g. All of the sets
- h. None of the sets

5. The value of  $y$  varies directly with  $x$ ,  $y = -13$  when  $x = -39$ .

Find  $y$  when  $x = 30$ .

6. What is the slope-intercept form of the linear equation  $30x + 3y = 18$ ?

7. Points located on the y-axis have a y-coordinate of zero.

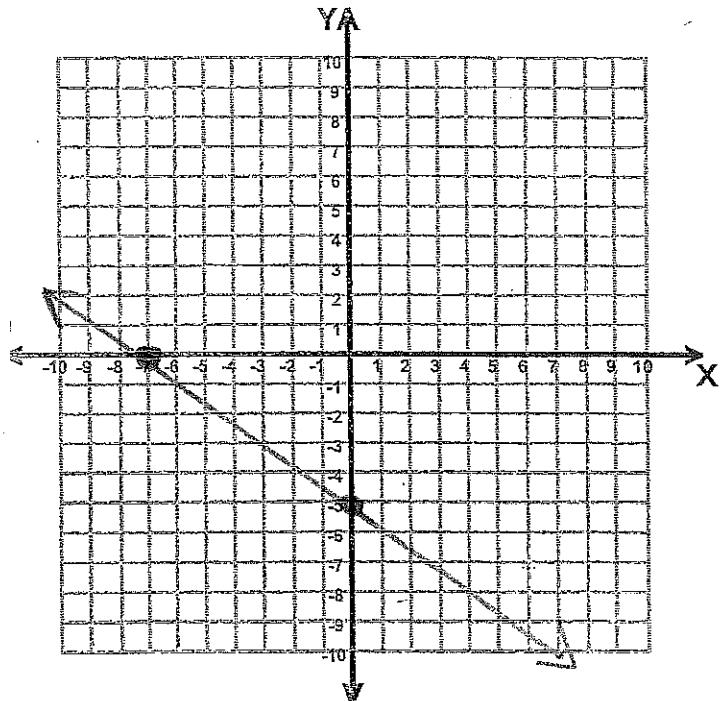
- a. Always
- b. Never
- c. Sometimes

8. What are the x and y intercepts of  $20x - 2y = 10$ ?

x-intercept \_\_\_\_\_

y-intercept \_\_\_\_\_

9. What are the x and y intercepts of the following linear function? Write as a coordinate pair.



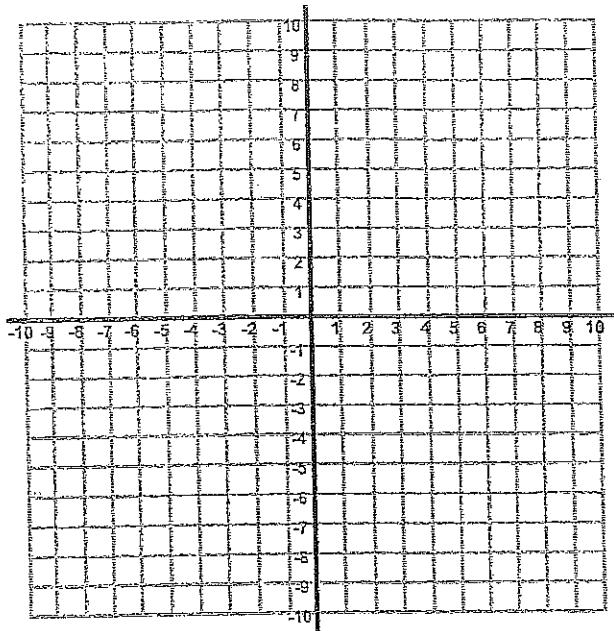
x-intercept \_\_\_\_\_

y-intercept \_\_\_\_\_

10. Graph the linear function given the slope and y-intercept.

$$\text{Slope} = -\frac{1}{2}$$

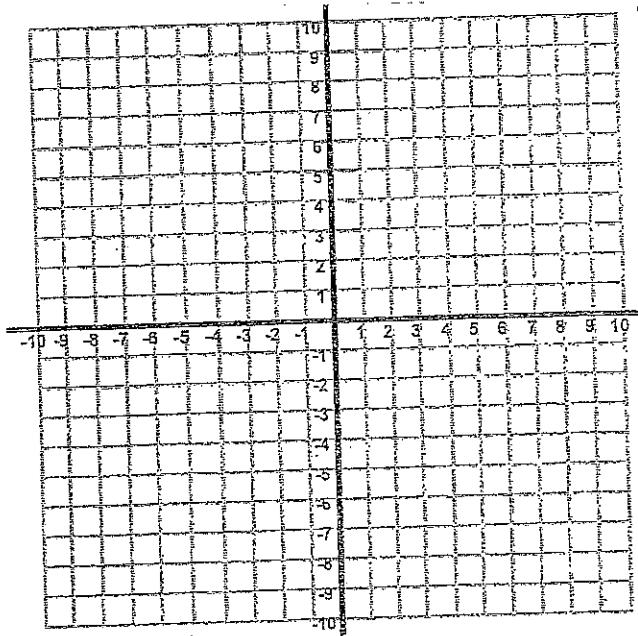
$$y\text{-intercept} = (0, 3)$$



11. Graph the linear function given the slope and y-intercept.

$$\text{Slope} = 0$$

$$y\text{-intercept} = (0, -2)$$

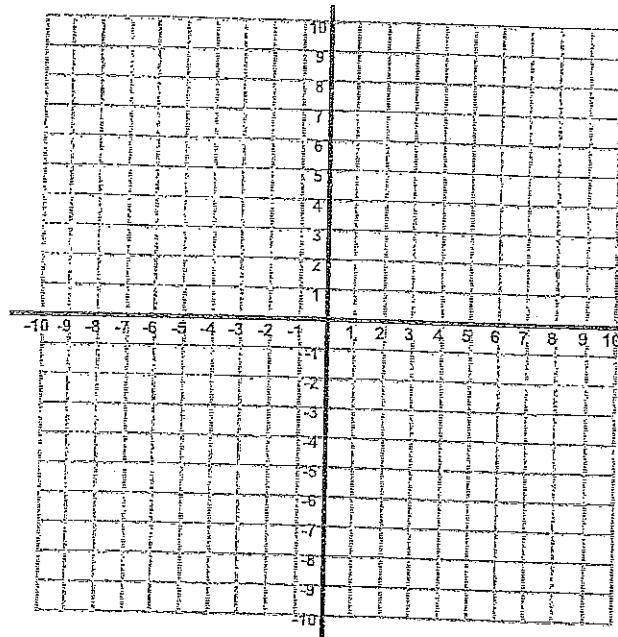


12. Write the equation in slope-intercept form and then graph.

$$2x + y = -3$$

Slope \_\_\_\_\_

y-intercept \_\_\_\_\_

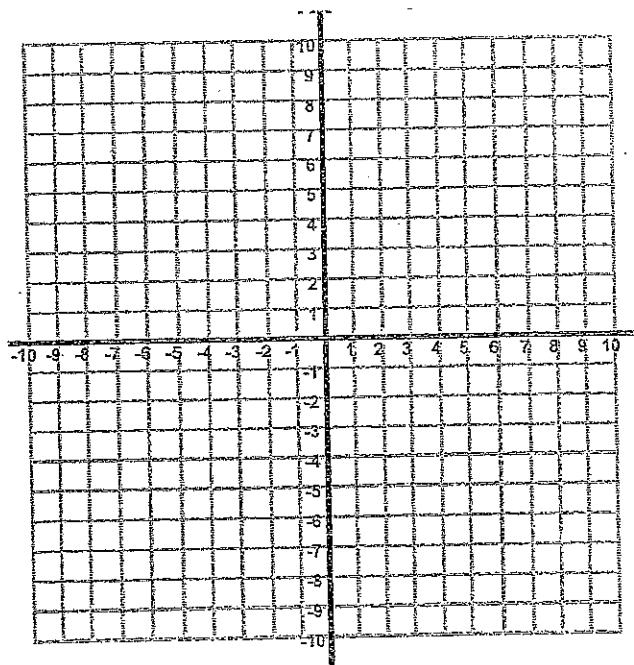


13. Write each equation in slope-intercept form and then graph.

$$4x - 4y = -16$$

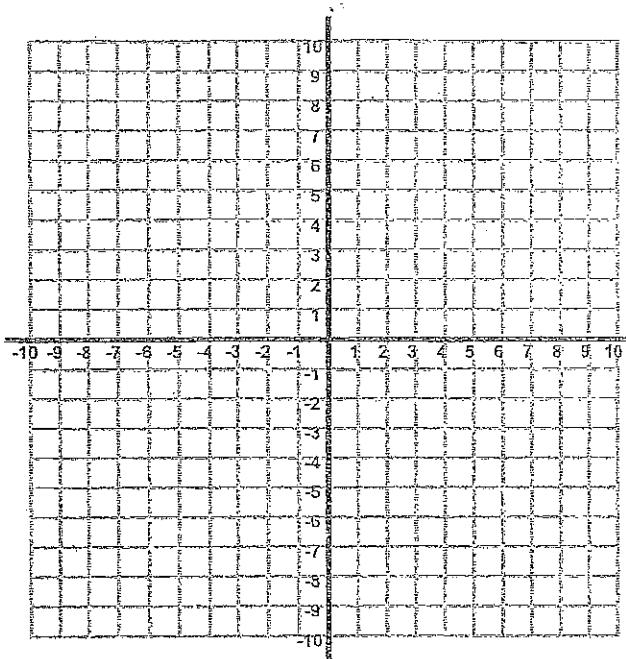
Slope \_\_\_\_\_

y-intercept \_\_\_\_\_



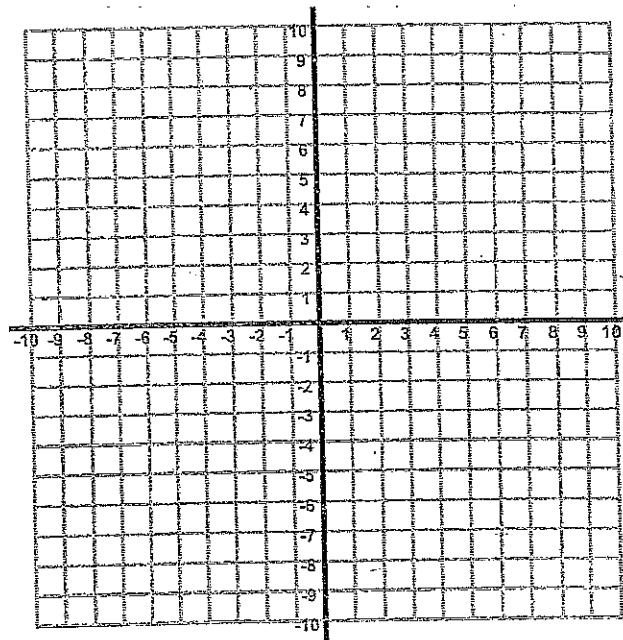
14. Graph the line with the given slope that contains the given point.

Slope = -2; (3, 4)



15. Graph the line with the given slope that contains the given point.

Slope = 1/4; (1, -2)



16. Is the relationship a direct variation? If so, identify the constant of variation?

x	8	16	32	48
y	1	2	4	6

17. Write an equation in slope-intercept form for the line through the two points.

(1, -1) and (2, 10)

18. Write an equation in slope-intercept form for the line through the two points.

(4, 0) and (-3, 5)

19. Write an equation in slope-intercept form for the line that passes through (2, 3) and is parallel to the line described by  $2x - 3y = 12$ .

20. Write an equation in slope-intercept form for the line that passes through  $(1, 6)$  and is perpendicular to the line described by

$$y = -\frac{1}{2}x - 9.$$

21. Graph  $f(x)$  and  $g(x)$ . Then describe the transformation from the graph of  $f(x)$  to the graph of  $g(x)$ .

$$f(x) = \frac{1}{3}x$$

$$g(x) = -\frac{1}{3}x$$

22. Graph  $f(x)$  and  $g(x)$ . Then describe the transformation from the graph of  $f(x)$  to the graph of  $g(x)$ .

$$f(x) = \frac{1}{2}x - 1$$

$$g(x) = \frac{1}{2}x + 2$$

23. Write the equation of a line in slope-intercept form that has a slope of  $\frac{1}{3}$  and passes through the point  $(3, 2)$

24. Write the point-slope form of the equation of the line described.

Through  $(-2, 4)$  and parallel to  $y = -\frac{1}{4}x + 2$ .

25. Write the standard form of the equation of the line through the given point with the given slope.

Through  $(-5, 5)$  and slope = 5