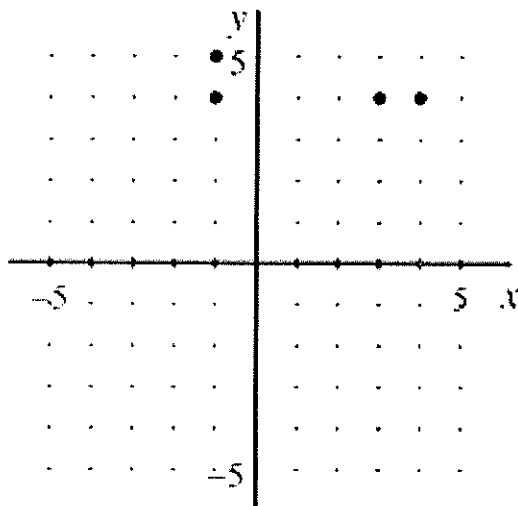


Name: \_\_\_\_\_ Date: \_\_\_\_\_

- Determine whether the relation is a function.  
 $(-3, 3), (-2, 2), (-1, 1), (1, -1), (2, -2), (3, -3)$

Use the Vertical Line Test to determine if the graph represents  $y$  as a function of  $x$ .

2.

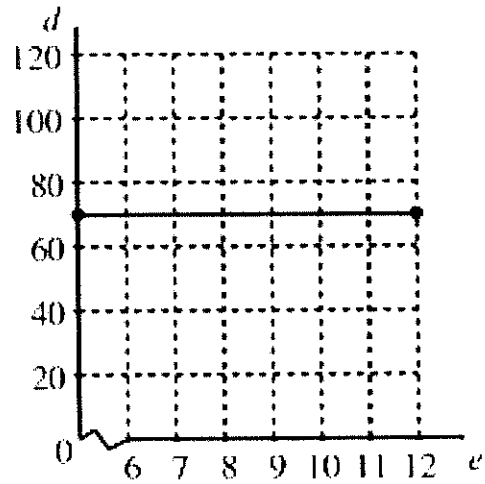


- Find  $f\left(-\frac{1}{3}\right)$ .  $f(x) = 18x^2 - 12x - 3$

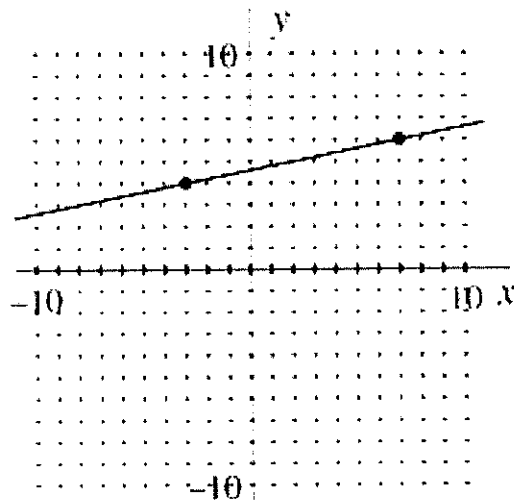
- Find the slope of the line passing through the points  $(7, -4)$  and  $(-6, -7)$ .

- Decide whether **Line 1** and **Line 2** are parallel, perpendicular, or neither.  
**Line 1** passes through  $(7, -5)$  and  $(3, -3)$   
**Line 2** passes through  $(9, 5)$  and  $(7, 1)$

6. What is the range of the function in the graph?



7. Find the slope of the line.



8. Which line is steeper,  $y = \frac{7}{4}x + 5$  or  $y = \frac{5}{3}x - 2$ ?

9. Graph the linear equation by finding  $x$ - and  $y$ -intercepts.

$$3x - 2y = -6$$

10. Find the slope and  $y$ -intercept of the line.  $4x - 3y = 36$

Graph:

11.  $y = 1$

Write an equation of the line with the given slope and  $y$ -intercept. Express your answer in slope-intercept form.

12. slope =  $-2$ ;  $y$ -intercept =  $-4$

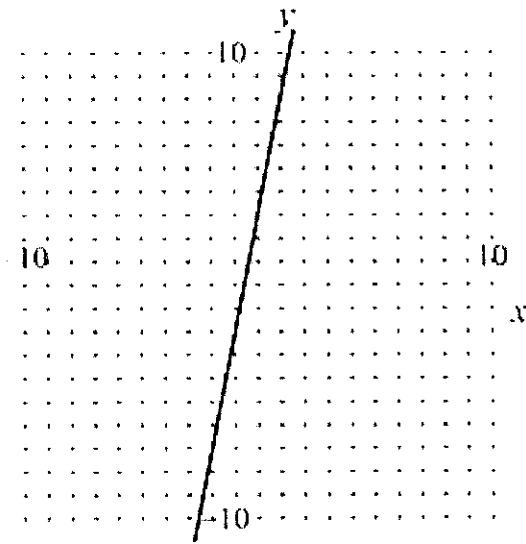
Write an equation for the function. Express your answer in slope-intercept form.

13.  $x$     $-4$     $0$     $4$     $8$     $12$   
 $y$     $-9$     $-8$     $-7$     $-6$     $-5$

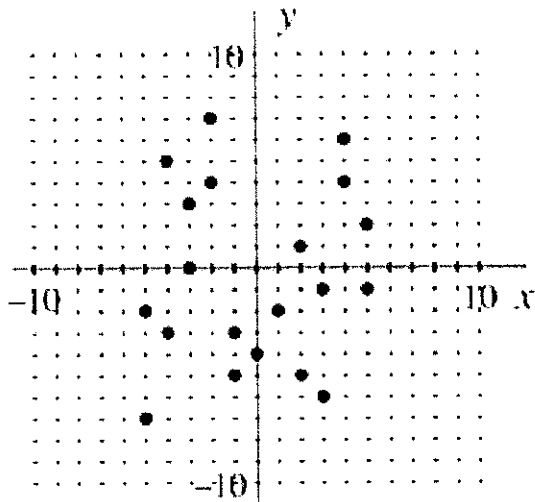
14. Performance Task: A high school student became dehydrated while recuperating from a virus. In the hospital he was given 1000 cc of glucose intravenously at a drip rate of 5 cc per minute.
- Make a table comparing the elapsed time with the amount of glucose given to the patient.
  - Write an equation describing the relationship between the elapsed time and the amount of glucose remaining in bag.
  - Draw a graph. Discuss the meaning of the  $x$ -intercept and the  $y$ -intercept in this realworld situation.
  - What information from the table in part (a) and the graph in part (b) might be valuable to the doctor?

15. The variables  $x$  and  $y$  vary directly and  $y = -6$  when  $x = \frac{1}{4}$ . Write an equation that relates the variables.

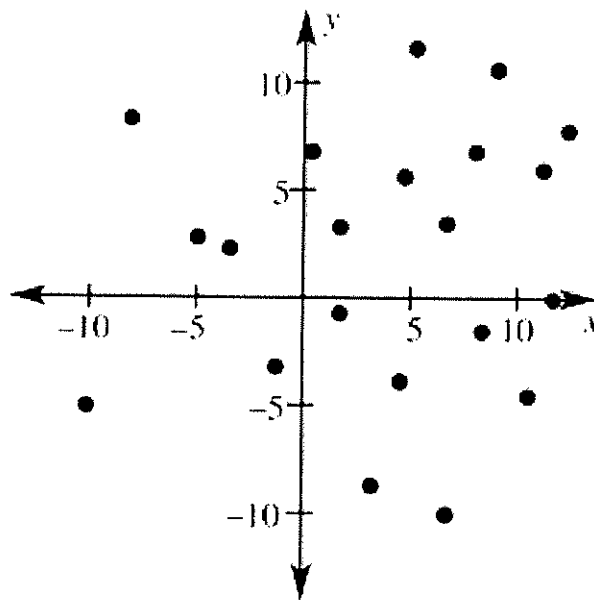
16. For the graph below, tell whether  $y$  varies directly with  $x$ . If so, give an equation for the graph.



17. Describe the correlation shown by the scatter plot.



18. For the scatter plot shown, state whether  $x$  and  $y$  have a positive correlation, a negative correlation, or no correlation.



19. For the data given, find the equation of the line of best fit.

|     |   |   |   |   |    |
|-----|---|---|---|---|----|
| $x$ | 2 | 3 | 7 | 8 | 10 |
| $y$ | 3 | 3 | 5 | 6 | 8  |

20. Graph the function defined by  $y = |x - 2|$ .

21. Graph the function.  $f(x) = 3 - |x - 2|$

22. Find the vertex of the graph.  $y = -|x| + 4$

23. Is the ordered pair  $(-7, 2)$  a solution of the inequality  $3x + 10y \geq -1$ ?

24. Graph the inequality in a coordinate plane.  $\frac{7}{3}x \leq 7$

25. Graph the inequality in a coordinate plane.  $3x + 2y < -6$