

Find the equation for each set of data. Explain the relationship between  $x$  and  $y$ .

1.

x	y
0	5
1	10
2	15
3	20

2.

x	y
0	10
2	6
4	2
6	-2

Equation \_\_\_\_\_

Equation \_\_\_\_\_

Find the equation of the line given a slope and a point on the line or given two points on the line.

3. Slope of the line is 3 and it passes through the point (3, 11).

4. The line passes through the points (2, 2) and (5, 8).

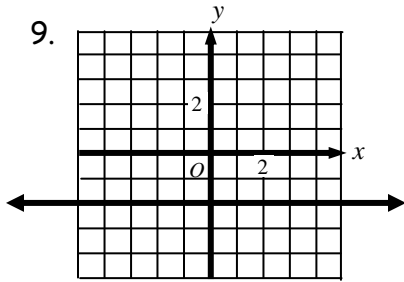
5. Slope of  $\frac{3}{2}$  that passes through (0, 2).

6. Describe the change that occurs when the graph of  $y = x + 3$  is translated to  $y = 3x$ .

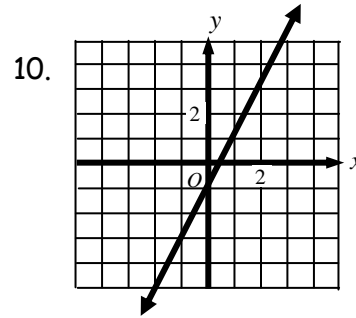
7. Describe the change that occurs when the graph of  $y = 4x$  is translated to  $y = x - 2$ .

8. Describe the change that occurs when the graph of  $y = 2x$  is translated to  $y = -2x + 1$ .

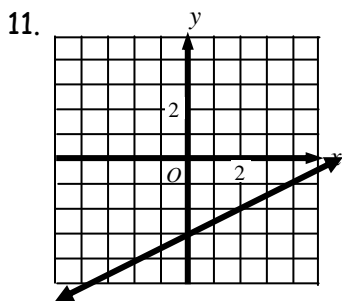
Find the slope of the line and the y-intercept. Then write the equation.



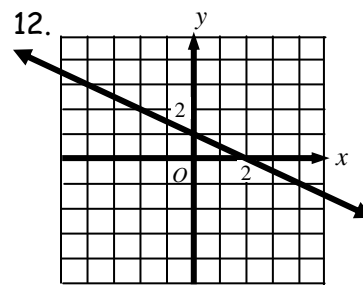
slope \_\_\_\_\_ y-intercept \_\_\_\_\_  
equation \_\_\_\_\_



slope \_\_\_\_\_ y-intercept \_\_\_\_\_  
equation \_\_\_\_\_



slope \_\_\_\_\_ y-intercept \_\_\_\_\_  
equation \_\_\_\_\_



slope \_\_\_\_\_ y-intercept \_\_\_\_\_  
equation \_\_\_\_\_

Write the equation of the line described in the table.

13.

x	-2	0	2	4
y	12	8	4	0

slope \_\_\_\_\_ y-intercept \_\_\_\_\_  
equation \_\_\_\_\_

14.

x	-4	-1	2	5
y	-10	-4	2	8

slope \_\_\_\_\_ y-intercept \_\_\_\_\_  
equation \_\_\_\_\_

15.

x	0	1	2	3
y	5	11	17	23

slope \_\_\_\_\_ y-intercept \_\_\_\_\_  
equation \_\_\_\_\_

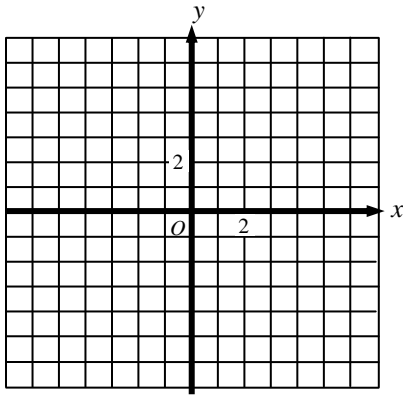
16.

x	-2	-1	0	1
y	5	4.5	4	3.5

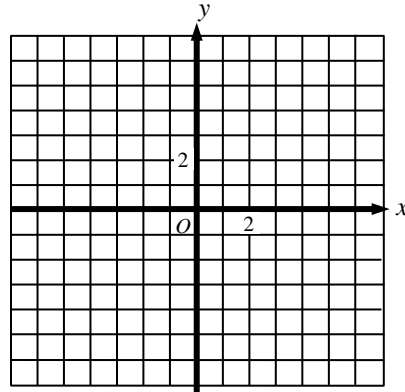
slope \_\_\_\_\_ y-intercept \_\_\_\_\_  
equation \_\_\_\_\_

Graph each equation.

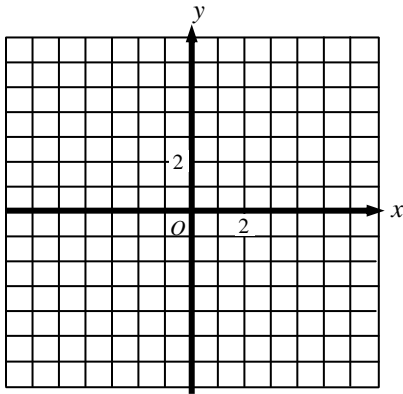
17.  $y = -\frac{2}{3}x + 5$



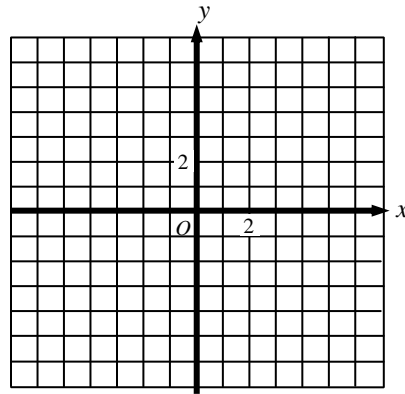
18.  $3x - y = 6$



19.  $y = \frac{1}{2}x - 3$



20.  $y = 5$



21. The table shows Billy's savings over a 5-week period.

Weeks	0	1	2	3	4	5
Savings	\$100	\$120	\$140	\$160	\$180	\$200

What is the slope for the relationship? \_\_\_\_\_

What does the slope represent in the scenario? \_\_\_\_\_

What is the y- intercept? \_\_\_\_\_

What does the y-intercept represent in the scenario? \_\_\_\_\_

Today is Barry's birthday. Barry's grandfather gave him some money as a birthday gift. Barry says he will put his birthday money in a safe place and add part of his allowance to it each week. His sister Betty asks him how much his grandfather gave him and how much of his allowance he is planning to save each week. Barry does not answer his sister directly. Instead, he gave her some information and let her puzzle out the answer for herself.

22. Barry tells Betty that he will save the same amount from his allowance each week. He says that after five weeks, he will have saved a total of \$175 and after eight weeks, he will have saved \$190. How much money is Barry planning to save each week?
  
  
  
  
  
  
  
  
  
  
23. How much money did Barry's grandfather give him for his birthday?
  
  
  
  
  
  
  
  
  
  
24. Write an equation for the total amount of money,  $m$ , Barry will have saved after a given number of weeks,  $n$ .

On the Talk for Less long-distance phone plan, the relationship between the number of minutes a call lasts, and the cost of the call, is linear. A 5-minute call costs \$1.25, and a 15-minute call costs \$2.25.

25. Write an equation for the relationship between the cost and the length of a call.
  
  
  
  
  
  
  
  
  
  
26. Find the slope and the y-intercept of the equation, and explain what this information means in the context of the problem.
  
  
  
  
  
  
  
  
  
  
27. How much will a 25-minute call cost?
  
  
  
  
  
  
  
  
  
  
28. How long can a customer talk for \$5.00?

Nick and Kate decide to go ice skating for the holidays. Nick finds a company, Skate Storm, which rents a pair of ice skates for \$10.50 plus \$2.50 for every hour. Kate finds prices for a different company, Snow Bunnies, which rents a pair of ice skates for \$8.50 plus \$3.00 for every hour.

29. Write an equation to represent  $C$ , the cost and  $h$ , the number of hours it would cost to rent skates from each company.

Skate Storm Equation: \_\_\_\_\_

Snow Bunnies Equation: \_\_\_\_\_

30. What is the slope for each company? What does the slope represent in the scenario?

31. What is the y-intercept for each company and what does it represent in the scenario?

32. If both companies' functions were graphed on the same plane, how would the graphs compare? What transformations would have occurred?

33. How much would it cost to rent skates for 3 hours from Skate Storm?

34. If Nick and Kate had only \$14.50 to spend how many hours could they rent skates from Snow Bunnies?

35. At what point do both companies cost the same amount?