

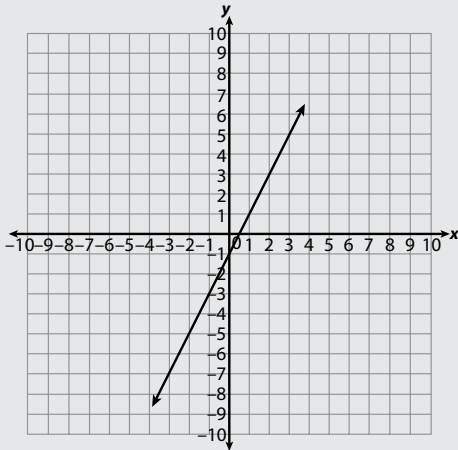
## 37

## Graph Functions

P.1.A P.1.B P.1.D P.1.E P.1.F P.1.L P.2.A P.2.B P.2.D P.2.E P.2.F P.2.L P.5.A P.5.B P.5.D P.5.E P.5.F P.5.L

## Example

What is the rule of this function?



- A.  $y = 2x - 1$   
 B.  $y = 2x + 1$   
 C.  $y = 3x + 2$   
 D.  $y = x + 3$

## Thinking It Through

**Solve** —*Translate It* Write the ordered pairs to create your own function table. You can read them right off the graph.

<b>x</b>	-3	-2	-1	0	1	2	3
<b>y</b>	-7	-5	-3	-1	1	3	5

Now you can determine the rule of the function as you would in a function table. Each value of  $y$  is 1 less than 2 times  $x$ , so  $y = 2x - 1$ , *answer A*.

**Assemble** Notice that each time  $x$  increases by 1 (*e.g.* from  $-2$  to  $-1$ , or from  $1$  to  $2$ ),  $y$  increases by 2. The rule  $y = 2x - 1$  makes sense.

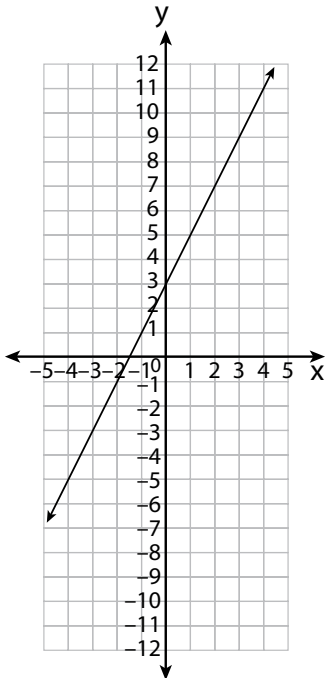
## Review

- A graph allows you to “see” a function. From the graph in the Example, you can see that  $y$  increases by 2 each time  $x$  increases by 1. Therefore, each  $x$  will be multiplied by 2 as part of the rule.
- To graph a function, find the **ordered pairs** by finding the values of  $y$  for given values of  $x$ . The value of  $x$  is the first number in the ordered pair, and the value of  $y$  is the second number in the ordered pair.
- To graph a function given an **equation**, choose values for  $x$  and find the corresponding values of  $y$ . For example, if given the equation  $y = 2x - 1$ , you could select  $-2$ ,  $0$ , and  $2$  as values for  $x$ , then substitute them into the equation to get the points  $(-2, -5)$ ,  $(0, -1)$ , and  $(2, 3)$ . You would then plot these points to graph the line.

# Graph Functions

Directions: Carefully read each question. Circle the letter of the correct answer.

1. What is the rule of this function?



- A.  $y = x - 1$       B.  $y = 2x + 3$   
 C.  $y = 3x$       D.  $y = 3x - 1$

2. Which ordered pair is on the line of the function  $y = 4x + 2$ ?

- A. (2, 8)      B. (3, 12)  
 C. (4, 18)      D. (5, 20)



Substitute each value for  $x$  into the equation. If the answer is the corresponding value for  $y$ , the point is on the line.

3. Which graph corresponds to the function  $y = 3x + 1$ ?

