

Finding Slope Given a Table or a Graph

The **slope** of a line is determined by the ratio $\frac{\text{change in } y}{\text{change in } x}$ between any two points that lie on the line.

The slope is the **constant rate of change** of a line.

EXAMPLE A

Use a graph to determine the slope of a line.

Step 1: Identify two points on the line.

In this case, use (0, 2) and (2, 1).

Step 2: Calculate the vertical change from one point to the next.

In this case, you must count down 1 space to move from the point (0, 2) to the point (2, 1).

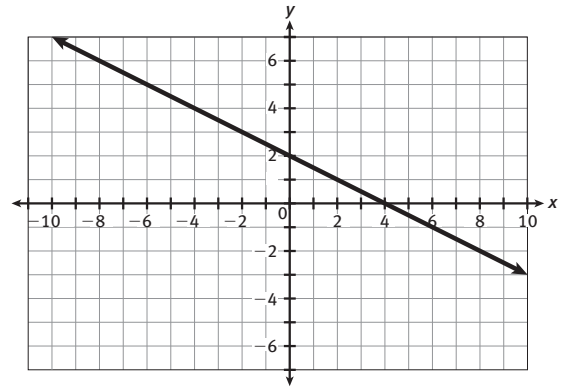
Step 3: Calculate the horizontal change from one point to the next.

In this case, you must count right 2 spaces to move from the point (0, 2) to the point (2, 1).

Step 4: Write the ratio showing $\frac{\text{vertical change}}{\text{horizontal change}}$ in simplest form.

In this case, the slope is represented by the ratio $\frac{-1}{2}$, or $-\frac{1}{2}$.

Solution: The slope is negative because the line falls from left to right.



GUIDED PRACTICE

The ratio of vertical change to horizontal change is the same between any two points on a line. Use two different points on the line above to show this is true.

EXAMPLE B

Use a table to determine the slope of a line.

Step 1: Identify the change in each consecutive pair of y -values in the table. In this case, the changes are 5, 5 and 10.

Step 2: Identify the change in each consecutive pair of x -values in the table. In this case, the changes are 1, 1, and 2.

Step 3: Write ratios showing the corresponding $\frac{\text{vertical change}}{\text{horizontal change}}$ in simplest form. In this case, the ratios $\frac{5}{1}$, $\frac{5}{1}$, and $\frac{10}{2}$ each simplify to $\frac{5}{1}$.

The slope of the line is $\frac{5}{1}$.

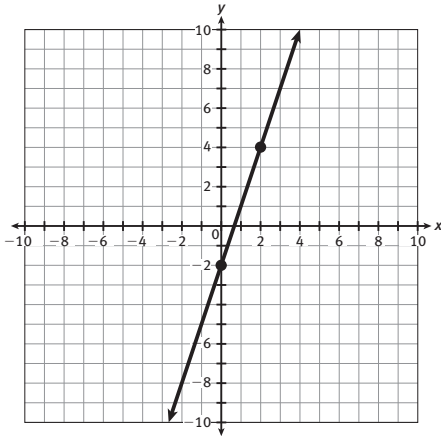
	x	y	
1	1	-3	5
1	2	2	5
2	3	7	10
	5	17	

Finding Slope Given a Table or a Graph (continued)

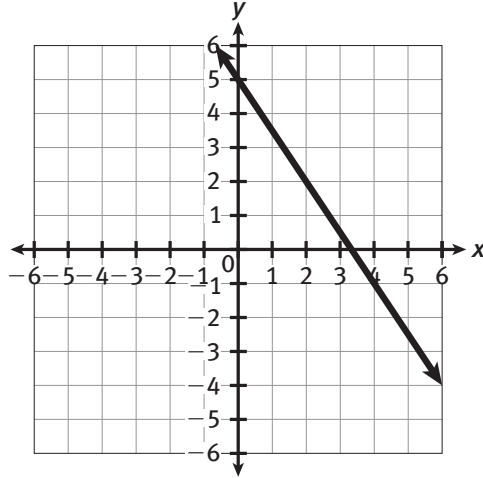
PRACTICE

Determine the slope for each of the following.

1.



2.



3.

x	y
5	5
7	3
9	1
11	-1

4.

x	y
2	-5
4	6
7	20
11	40