## 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 $\frac{5}{1}$.

## Finding Slope Given a Table or a Graph (continued)

## PRACTICE

Determine the slope for each of the following.
1.

2.

4.

| $x$ | $y$ |
| ---: | ---: |
| 2 | -5 |
| 4 | 6 |
| 7 | 20 |
| 11 | 40 |

