

## Lesson 6-2

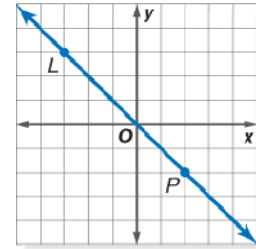
## Example 1

Find the slope of  $\overline{LP}$ .

## Solution

$$m = \frac{\text{rise}}{\text{run}} = \frac{\text{down } 5}{\text{right } 5} = \frac{-5}{5} = -\frac{5}{5}$$

The slope of  $\overline{LP}$  is -1.

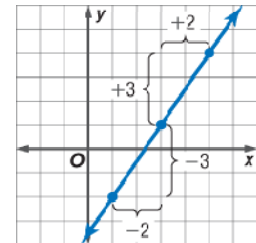


## Example 2

Graph the line that passes through point (3, 1) and has a slope of  $\frac{3}{2}$ .

## Solution

First plot the point (3, 1). Since the slope is  $\frac{3}{2}$ , the change of rise over run equals a positive ratio. To locate another point, place your pencil at (3, 1). Rise 3 units up and run 2 units right. To locate a third point on the line, you can rise 3 units and run 2 units again. Or go back to the point (3, 1) and rise 3 units down and run 2 units left.



**Example 3**

Is the line containing the given points horizontal or vertical? Name the slope.

- a. (4, -3) and (-2, -3)      b. (6, -1) and (6, 7)      c.  $13, \frac{2}{3}^2$  and  $1\frac{1}{4}, \frac{2}{3}^2$

**Solution**

The  $y$ -coordinates are equal, so it is a horizontal line that has a slope of 0.

The  $x$ -coordinates are equal, so it is a vertical line that has an undefined slope.

The  $y$ -coordinates are equal, so it is a horizontal line that has a slope of 0.

**Example 4**

Find the slope of a line that passes through the given points. Graph each line.

- a. (0, 0) and (2, 5)      b. (-3, 3) and (2, 0)  
c. (1, -3) and (-4, -2)      d. (4, -1) and (4, 4)

**Solution**

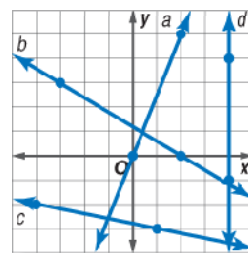
Substitute the ordered pairs into the slope formula.

$$\text{a. } m = \frac{5 - 0}{2 - 0} = \frac{5}{2} \quad m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\text{b. } m = \frac{0 - 3}{2 - (-3)} = \frac{-3}{5} = -\frac{3}{5}$$

$$\text{c. } m = \frac{-2 - (-3)}{-4 - 1} = \frac{1}{-5} = -\frac{1}{5}$$

$$\text{d. } m = \frac{4 - (-1)}{4 - 4} = \frac{5}{0} \text{ Slope is undefined.}$$



To graph each line, plot both points. Use the slope to verify other points on each line.