

**LESSON**  
**5-4**

**Guided Notes**

**The Slope Formula**

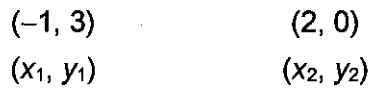
You can find the slope of a line from any two ordered pairs. The ordered pairs can be given to you, or you might need to read them from a table or graph.

**Find the slope of the line that contains (-1, 3) and (2, 0).**

**Step 1:** Name the ordered pairs. (It does not matter which is first and which is second.)



**Step 2:** Label each number in the ordered pairs.



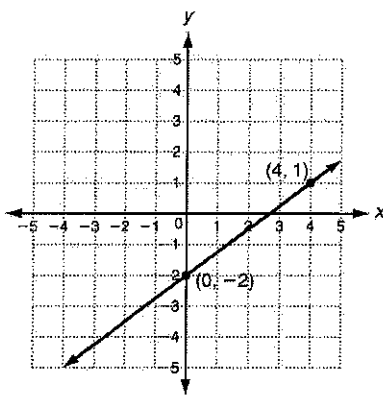
**Step 3:** Substitute the ordered pairs into the slope formula.

$$\begin{aligned}
 m &= \frac{y_2 - y_1}{x_2 - x_1} \\
 &= \frac{0 - 3}{2 - (-1)} \\
 &= \frac{-3}{3} \\
 &= -1
 \end{aligned}$$

The slope of the line that contains (-1, 3) and (2, 0) is -1.

**Find the slope of each linear relationship.**

1.



2.

$x$	$y$
4	-5
8	-3
12	-1
16	1

3. The line contains  $(5, -2)$  and  $(7, 6)$ .

## LESSON

5-4

## Guided Notes

**The Slope Formula** *continued*

You can also find slope from an equation using the x- and y-intercepts.

**Find the slope of the line described by  $x - 3y = -9$ .**

**Step 1:** To find the x-intercept, substitute 0 for y.

$$x - 3y = -9$$

$$x - 3(0) = -9$$

$$x = -9$$

The x-intercept is  $-9$ .

**Step 2:** To find the y-intercept, substitute 0 for x.

$$x - 3y = -9$$

$$(0) - 3y = -9$$

$$-3y = -9$$

$$\frac{-3y}{-3} = \frac{-9}{-3}$$

$$y = 3$$

The y-intercept is  $3$ .

**Step 3:** Use the slope formula with the points  $(-9, 0)$  and  $(0, 3)$ .

$$\begin{aligned} m &= \frac{y_2 - y_1}{x_2 - x_1} \\ &= \frac{3 - 0}{0 - (-9)} \\ &= \frac{3}{9} \\ &= \frac{1}{3} \end{aligned}$$

The slope of the line described by  $x - 3y = -9$  is  $\frac{1}{3}$ .

**Find the slope of the line described by each equation.**

4.  $-2x - 5y = 10$

5.  $4x + 2y = 8$

6.  $-6x + 2y = 12$

7.  $8y - 4x = 32$

8.  $6y + 8x = 24$