

# Lesson 6 Reteach

## Write Linear Equations

**Point-slope form** is when an equation is written in the form  $y - y_1 = m(x - x_1)$ , where  $(x_1, y_1)$  is a given point on a nonvertical line and  $m$  is the slope of the line.

### Example

Write an equation in point-slope form and slope-intercept form for a line that passes through  $(2, -5)$  and has a slope of 4.

<b>STEP 1</b>	$y - y_1 = m(x - x_1)$	Point-slope form
	$y - (-5) = 4(x - 2)$	$(x_1, y_1) = (2, -5), m = 4$
	$y + 5 = 4(x - 2)$	Simplify.

<b>STEP 2</b>	$y + 5 = 4(x - 2)$	Write the equation.
	$y + 5 = 4x - 8$	Distributive Property
	$\underline{-5 = -5}$	Addition Property of Equality
	$y = 4x - 13$	Simplify.

Check: Substitute the coordinates of the given point in the equation.

$$y = 4x - 13$$

$$-5 \stackrel{?}{=} 4(2) - 13$$

$$-5 = -5 \checkmark$$

### Exercises

Write an equation in point-slope form and slope-intercept form for each line.

1. passes through  $(-4, 0)$ , slope = 2

2. passes through  $(-2, -1)$ , slope =  $\frac{1}{2}$

3. passes through  $(3, -6)$ , slope =  $\frac{2}{3}$

4. passes through  $(-4, -3)$ , slope = -2