

Section 3.5: Equation of Lines

Example 1: Use the slope-intercept form of the linear equation to write the equation of each line with the given slope and y-intercept. Write your answer in slope-intercept form.

- a. Slope -9; y-intercept (0, 6)

Point-Slope Form

An equation of the form $y - y_1 = m(x - x_1)$ is called the **point-slope form** for the equation of a line that contains the point (x_1, y_1) and has slope m .

Finding the Equation of a Line

If two points are given,

1. Use the formula $m = \frac{y_2 - y_1}{x_2 - x_1}$ to find the slope.

Use this slope, m , and either point in the point-slope formula $y - y_1 = m(x - x_1)$

Example 2: Find an equation of the line having the given slope and containing the given point. Write your answer in slope-intercept form.

- a. Slope 3; through (8, 7)

- b. Slope $\frac{2}{3}$; through (-3, 3)