2-2 Reteach to Build Understanding

Point-Slope Form

1. In point-slope form, the equation of a line with slope m that passes through the point (x_1, y_1) is $y - y_1 = m(x - x_1)$. Match the description of each line with the correct equation.

Description	Equation
1. ____ slope = 4, passes through point (2, 3)	**A.** $y + 3 = 4(x - 2)$
2. ____ slope = 4, passes through point (2, −3)	**B.** $y + 3 = 4(x + 2)$
3. ____ Slope = 4, passes through point (−2, 3)	**C.** $y - 3 = 4(x - 2)$
4. ____ Slope = 4, passes through point (−2, −3)	**D.** $y - 3 = 4(x + 2)$

2. Sandra is using the point-slope form $y - y_1 = m(x - x_1)$ to graph the equation $y + 2 = -\frac{4}{5}(x - 3)$. She completed the following steps.

Step 1: Plot a point at (3, 2).

Step 2: Plot a point 5 units up and 4 units left from (3, 2) at (–1, 3).

Step 3: Connect the points with a line.

In which step did Sandra make her first mistake? _____

What mistake did Sandra make?

3. What is an equation of a line that passes through the points (1, 4) and (2, 9) in point-slope form? Analyze the steps and fill in the blanks.

First, use the two given points to find the slope.

$m = \frac{y_2 - y_1}{x_2 - x_1}$

$m = \frac{9 - 4}{2 - 1} = \frac{5}{1} =$ _____

Use the slope and one point to write an equation of the line in point-slope form.

$y - y_1 = m(x - x_1)$ Point-slope form of a linear equation.

$y -$ _____ $= 5(x -$ _____$)$ Substitute (1, 4) for (x_1, y_1) and 5 for m.

An equation in point-slope form is _____.