5.2. Point-Slope form

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Recall: - Standard form: $Ax + By = C$

- Slope-Intercept: $y = mx + b$

  Where m = slope; b = y-int

- Point-Slope form: $y - y_1 = m(x - x_1)$

  Where m = slope; (x_1, y_1) is any Point on the Line

x & y → Variables

A & B Integer Coefficients

Write in Point-Slope form the equation w/ Slope 3 & passing through (1, 5)

$y - y_1 = m(x - x_1)$

$y - 5 = 3(x - 1)$

m = slope = 3

Any Pt. on the Line = $(1, 5)$ (x_1, y_1)

$m = \frac{4}{3}$, $(2, -4)$

m = slope = $\frac{4}{3}$

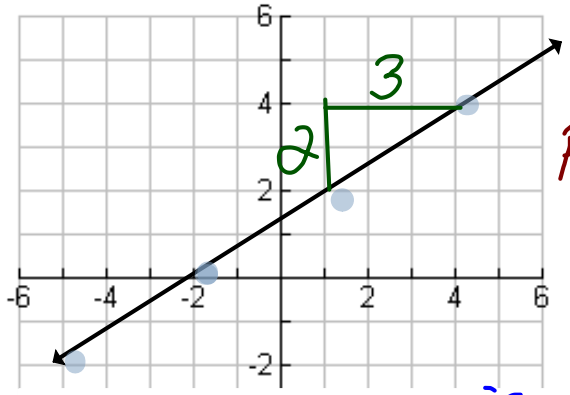
Pt on Line = $(2, -4)$ (x_1 y_1)

$y - y_1 = m(x - x_1)$

$y - (-4) = \frac{4}{3}(x - 2)$

$y + 4 = \frac{4}{3}(x - 2)$

Write the Equation in Point-Slope form



$m = \text{slope} = \frac{2}{3}$

Pt on the Line = $(-5, 2)$

$(1, 2)$; $(-2, 0)$

$y - y_1 = m(x - x_1)$

$m = \text{slope} = \frac{\text{rise}}{\text{run}}$

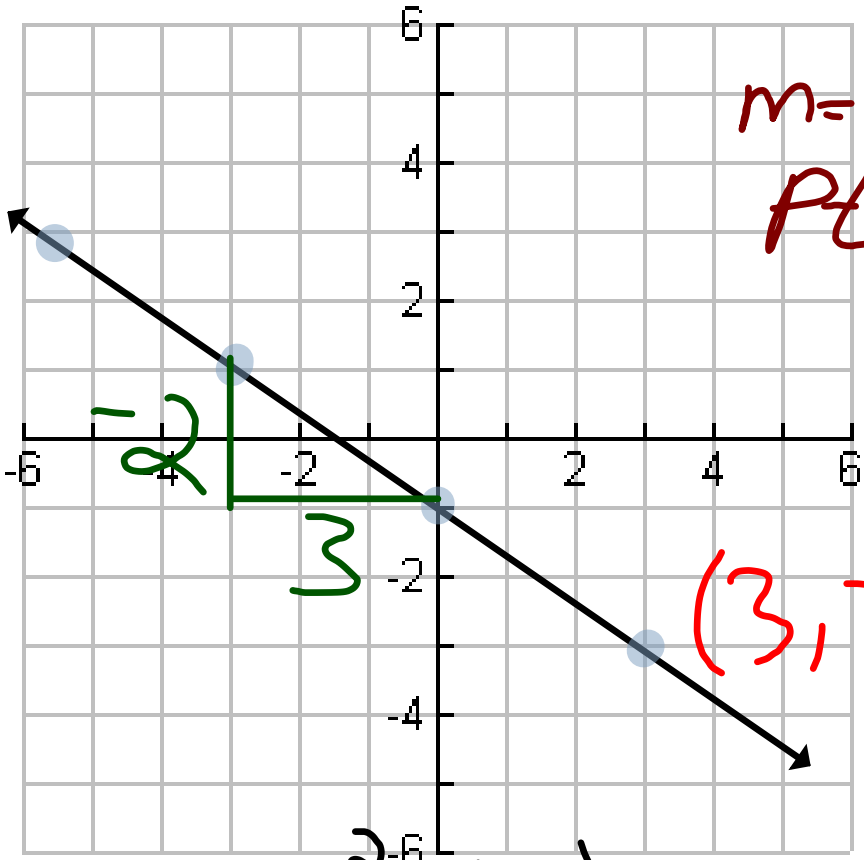
$y - 2 = \frac{2}{3}(x - 1)$

$y - 2 = \frac{2}{3}(x + 5)$

$y + 2 = \frac{2}{3}(x + 5)$

$y = \frac{2}{3}(x + 2)$

Write the Equation in Point-Slope form



$m = \text{slope} = \frac{-2}{3}$

Pt. on the Line = $(3, -3)$

$y - y_1 = m(x - x_1)$

$y - -3 = \frac{-2}{3}(x - 3)$

$(3, -3)$

$y + 3 = \frac{-2}{3}(x - 3)$

$y + 1 = \frac{-2}{3}(x)$

$y - 3 = \frac{-2}{3}(x + 6)$

O. T. L.

① Write the Summary Box on Pg 280 at the Bottom

② Pg 281-282: 1-7(a), 14, 19, 24