

5.2. Point-Slope form

Nov. 29, 2006

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

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

Where $m = \text{slope}$; $b = \text{y.int}$

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

Where $m = \text{slope}$; (x_1, y_1) is any Point on the Line

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

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

$$\underline{y - 5 = 3(x - 1)}$$

$$m = \text{slope} = \underline{3}$$

Any Pt. on the Line = $\underline{(1, 5)}$
 x_1, y_1

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

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

Pt on Line = $\underline{(2, -4)}$
 x_1, y_1

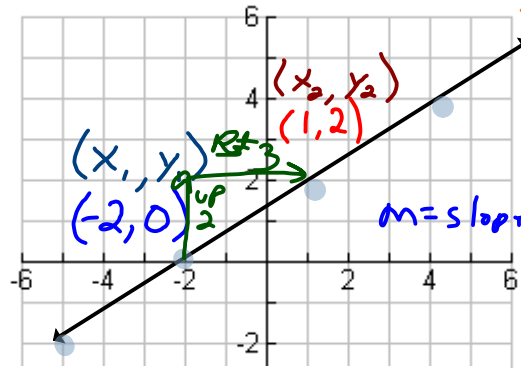
$$y - y_1 = m(x - x_1)$$

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

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

Write the Equation in Point-Slope form

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



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

$$\text{Pt on the Line} = (-2, 0)$$

$$m = \text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\text{change in } y}{\text{change in } x} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{\text{rise}}{\text{run}} = \frac{2}{3}$$

$$m = \frac{2 - 0}{1 - (-2)} = \frac{2}{3}$$

$$y - 0 = \frac{2}{3}(x - (-2))$$

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

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

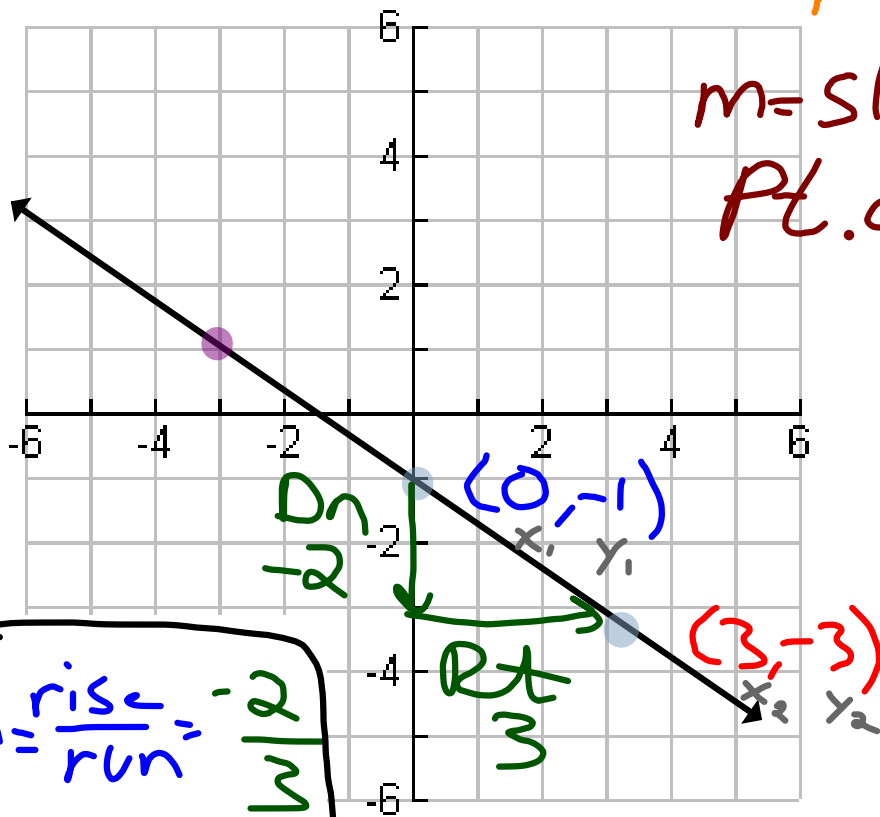
$$y - 4 = \frac{2}{3}(x - 4)$$

Write the Equation in Point-Slope form

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

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

$$\text{Pt. on the line} = \underline{(3, -3)}$$



$$m = \frac{\text{rise}}{\text{run}} = \underline{-\frac{2}{3}}$$

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

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

or

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

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

O.T.L.

① Write the Summary Box on
Pg 280 at the Bottom

② Pg 281-282: 1-7(a), 14, 19, 24

