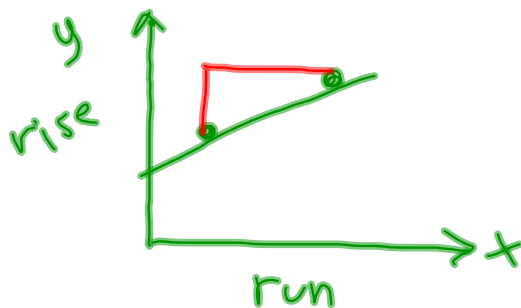


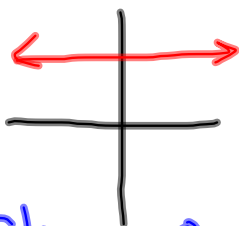
Chapter 6: Linear Functions

6.1: Slope of a Line

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

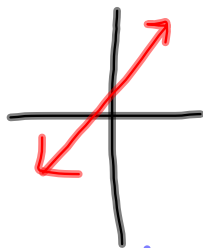


Four general scenarios for slope;

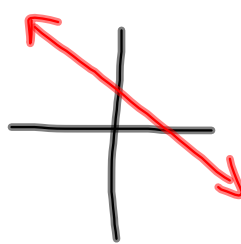


Slope = 0

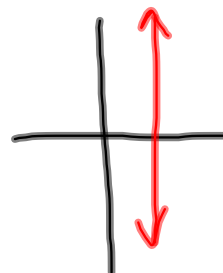
$$\frac{\text{rise}}{\text{run}} = \frac{0}{\text{run}} = 0$$



positive



negative



undefined

$$\frac{\text{rise}}{0} \quad \text{* can't divide by zero}$$

Determine the slope for each set of points.

$$1. \quad \begin{array}{cc} (2, 5) & (0, 13) \\ x_1, y_1 & x_2, y_2 \end{array}$$

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

(slope)

$$\Rightarrow \frac{13 - 5}{0 - 2} = \frac{8}{-2} = -4$$

$$2. \quad \begin{array}{cc} (-2, -2) & (-5, 15) \\ x_1, y_1 & x_2, y_2 \end{array}$$

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{15 - (-2)}{-5 - (-2)} = \frac{17}{-3}$$

$$-\frac{17}{3} \text{ or } -\frac{17}{3}$$

$$3. \quad \begin{array}{cc} (-4, 6) & (7, -5) \\ x_1, y_1 & x_2, y_2 \end{array}$$

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{-5 - 6}{7 - (-4)} = \frac{-11}{11} = -1$$

Practice: pg. 339
5, 6, 13a