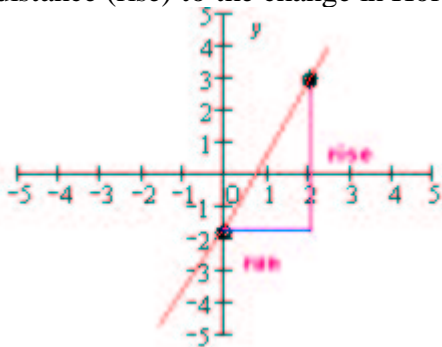


Slope of a Line

We generally use the term “slope” to refer to the steepness of a line.

We also use this term when we discuss the steepness of such physical objects as the slope of a roof or a ski-slope.

In algebra, we define the slope of a line as the ratio of the change of Vertical distance (rise) to the change in Horizontal distance (run) between two points



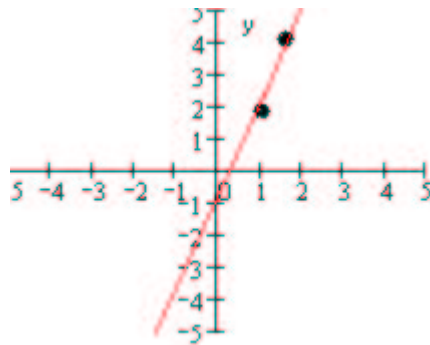
$$\text{slope} = m = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}, \text{ where } (x_1, y_1) \text{ and } (x_2, y_2)$$

are two points on the line.

Examples:

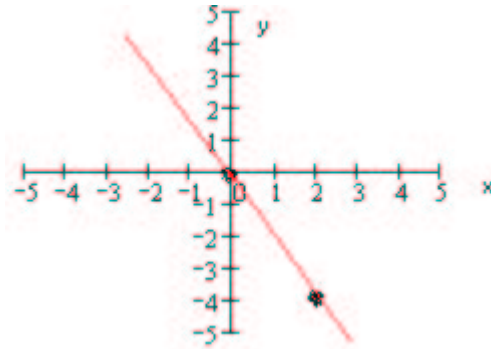
Find the slope of the line through the points (1,2) and (2,4)

$$m = \frac{4 - 2}{2 - 1} = \frac{2}{1} = 2$$



Find the slope of the line through (0,0) and (2,-4)

$$m = \frac{-4 - 0}{2 - 0} = \frac{-4}{2} = -2$$



Properties of Slope

