

# Slope Formula

The symbol for **slope** is **m**. **Slope** is the rate of change of the dependent variable “y” with respect to the independent variable “x”. To find the **slope** of a line pick two points from the line:

**point 1**  $(x_1, y_1)$  and **point 2**  $(x_2, y_2)$ .

Put these points into the formula for **slope**. **It does not matter which points you pick for point 1 and point 2** nor does it matter which formula you use. **What does matter is that you subtract the point 1 values from the point 2 values or that you subtract the point 2 values from the point 1 values** as shown below in the formula.

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

Example, find the slope of the line with points  $(2,3)$  and  $(-7,8)$ . Use both formulas to verify you get the same slope.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{8 - 3}{-7 - 2} = \frac{5}{-9} = -\frac{5}{9}$$

$$m = \frac{y_1 - y_2}{x_1 - x_2} = \frac{3 - 8}{2 - -7} = \frac{-5}{9} = -\frac{5}{9}$$