

## Day 3 - Slope from a Formula - Notes

In the above problems with the table, you had to calculate the difference in two y-values first before you calculated the difference in two x-values. This leads us to the slope formula which can be used to calculate the slope of any two points.

### Slope Formula

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

where  $(x_1, y_1)$  &  $(x_2, y_2)$  are coordinate points

Ex. Calculate the slope of two points using the slope formula.

A.  $\begin{matrix} x_1 & y_1 & x_2 & y_2 \\ (9, 3), & (19, -17) \end{matrix}$

$$\frac{-17 - 3}{19 - 9} = \frac{-20}{10} = -2$$

B.  $\begin{matrix} x_1 & y_1 & x_2 & y_2 \\ (1, -19), & (-2, -7) \end{matrix}$

$$\frac{-7 - (-19)}{-2 - 1} = \frac{12}{-3} = -4$$

## Day 3 - Slope from a Formula - Practice

Directions: Calculate the slope for each set of points.

a.  $\begin{matrix} x_1 & y_1 & x_2 & y_2 \\ (7, 1) & \text{and} & (21, 11) \end{matrix}$

$$\frac{11 - 1}{21 - 7} = \frac{10}{14} = \frac{5}{7}$$

b.  $\begin{matrix} x_1 & y_1 & x_2 & y_2 \\ (2, -7) & \text{and} & (4, -10) \end{matrix}$

$$\frac{-10 - (-7)}{4 - 2} = \frac{-3}{2}$$

c.  $\begin{matrix} x_1 & y_1 & x_2 & y_2 \\ (6, 1) & \text{and} & (18, -1) \end{matrix}$

$$\frac{-1 - 1}{18 - 6} = \frac{-2}{12} = -\frac{1}{6}$$

d.  $\begin{matrix} x_1 & y_1 & x_2 & y_2 \\ (2, -7) & \text{and} & (2, -10) \end{matrix}$

$$\frac{-10 - (-7)}{2 - 2} = \frac{-3}{0} = \text{undefined}$$