**Calculating & Interpreting Slope**

The **formula for the slope** between the two points A and B can be found by using the *x* and *y* coordinates of the two points. Call the ordered pair for point A (*x*1,*y*1) and the ordered pair for point B (*x*2,*y*2).

$$slope= \frac{rise}{run}=\frac{y\_{2}-y\_{1}}{x\_{2}-x\_{1}}$$

The slope of a line can always be represented as a fraction. For example, if the slope is 5, we can write 5 as the fraction $\frac{5}{1}$ . That means the rise is “up 5” and the run is “right 1”.

1. Plot the given point on the coordinate plane, and then use the slope to find a second point on the line. Connect the points with a straight line.
2. Point (2,0), slope = $\frac{3}{2}$ b. Point (-8,4), slope = $-\frac{1}{4}$

 

 Second point:\_\_\_\_\_\_\_\_\_\_\_ Second point:\_\_\_\_\_\_\_\_\_\_\_

1. Plot the given point on the coordinate plane, and then use the slope to find a second point on the line. Connect the points with a straight line
2. Point (-3, -5), slope =  b. Point (-2, 7), slope = 

 

 Second point:\_\_\_\_\_\_\_\_\_\_\_ Second point:\_\_\_\_\_\_\_\_\_\_\_

1. Use the **slope formula** to find the slope of the line passing through the given points.

 Show your work.

 a. (1, 5) & (2, 9) b. (2, 4) & (1, 1)

 c. (0, 4) & (-2, 8) d. (8, -8) & (6, 4)

 e. (3, -2) & (-7, -2) f. (7, -6) & (2, -3)

 g. (-3, -2) & (-1, -7) h. (2, -6) & (5, -1)

Sometimes it is useful to express slope as a **unit rate**. A unit rate has a denominator of 1. An example of a unit rate is $8 per hour: $\frac{8 dollars}{1 hour}$ that is the same as $\frac{16 dollars}{2 hours}$ . In a distance-time

function, the slope may be $\frac{3 meters}{2 seconds}$ , which is also $\frac{3}{2}$ meters per second. As a decimal, it is 1.5 meters per second or $ \frac{1.5 meters}{1 second}$.

1. Mr. Peel started 7 meters away from the motion detector, and 2 seconds later, he was 3 meters away from the motion detector. The graph below displays Mr. Peel’s motion. Find the **average rate of change** or **slope** in meters per second.



1. Sara started out with $50 in her piggy bank. Every week she deposited the same amount of money in the bank. After 7 weeks she had $67.50. Find the **average rate of change** or **slope in dollars per week.** (This is a unit rate.)
2. At 4 a.m. the temperature was 38 degrees F. By 11 a.m. the temperature had risen to 60 degrees F. Find the **average rate of change** or **slope in degrees per hour.**