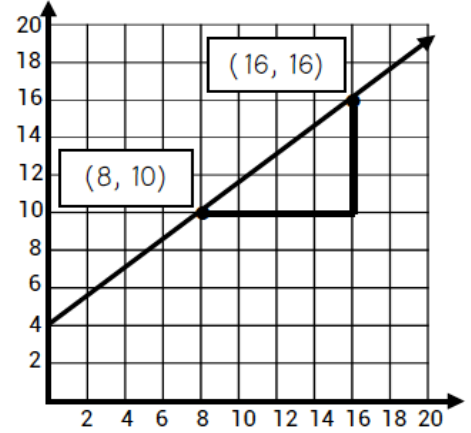


$$\begin{array}{c}
 (x_1, y_1) \quad (x_2, y_2) \\
 \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \\
 (8, 10) \quad (16, 16)
 \end{array}
 \Rightarrow m = \frac{y_2 - y_1}{x_2 - x_1} \Rightarrow \frac{16 - 10}{16 - 8} = \frac{6}{8} = \frac{3}{4}$$

THE SLOPE FORMULA

To find the slope of the graph, Aiden counted the rise to be 6 and the run to be 8 and set up the ratio $\frac{6}{8} = \frac{3}{4}$.

- a. Using the ordered pairs, how else could Aiden have found the rise to be 6?
- b. Using the ordered pairs, how else could Aiden have found the run to be 8?



THE SLOPE FORMULA

- We can describe slope as the following ratios:

$$\frac{\text{rise}}{\text{run}} \quad \text{or} \quad \frac{\text{change in } y}{\text{change in } x}$$

- Because of these ratios, the formula for slope is: _____

Use any two points (x,y) in a table below to calculate slope:

Use the slope formula to find the rate of change in each representation. Show all work.

1.

x	0	1	2	3
y	5	5.5	6	6.5

$\frac{y_2 - y_1}{x_2 - x_1}$
 Formula: _____ Slope: _____

2.

x	3	8	11	14
y	22	62	86	110

$\frac{y_2 - y_1}{x_2 - x_1}$
 Formula: _____ Slope: _____

3.

$\frac{y_2 - y_1}{x_2 - x_1}$
 Formula: _____ Slope: _____
 What two ordered pairs are given in the graph?
 (,) and (,)

A graphed line passes through each of the following pairs of points. Find the slope from the ordered pairs.

4. (2, 4) and (1, 7)

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

Formula: _____

Slope: _____

5. (-1, 0) and (3, -2)

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

Formula: _____

Slope: _____

6. (1, 3) and (5, 5)

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

Formula: _____

Slope: _____

7. (4.25, 0) and (3.5, 3)

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

Formula: _____

Slope: _____

8. $(2, \frac{3}{4})$ and $(5, \frac{3}{4})$

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

Formula: _____

Slope: _____

9. (7.5, 3) and (7.5, 2)

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

Formula: _____

Slope: _____

10. The table shows the relationship between the number of songs Alisha has purchased and the cost of her purchase. Find the rate of change, or slope.

NUMBER OF SONGS	COST OF PURCHASE
2	\$3.27
5	\$6.24
8	\$9.21
10	\$11.19

11. The table shows the distance that Andy and his friends have left on their road trip based on the number of hours they have driven. Find the rate of change, or slope.

HOURS DRIVEN	MILES REMAINING
1	360
3	240
5	120
7	0

12. The post office charges a flat rate, plus a cost for shipping based on the weight of an item. To ship a 2-pound item, it costs \$6.09. To ship a 7-pound item, it costs \$8.84. Find the rate of change.

Determine the slope of each line shown below:

