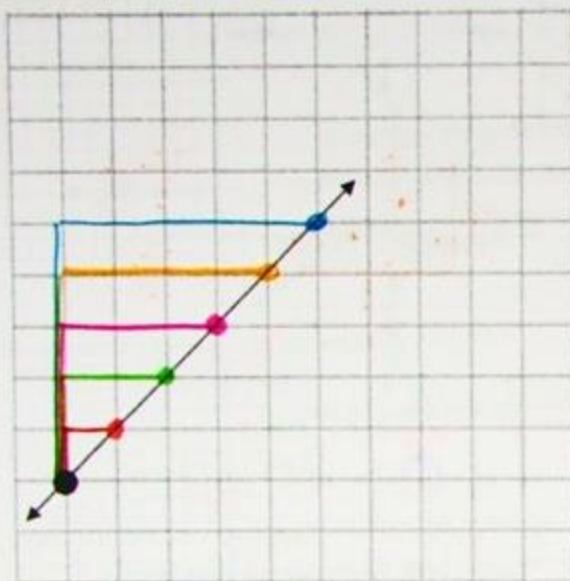




### Slope and Similar Triangles

1) Make 5 stair steps of different sizes that you can for the line with the point being at the bottom. Find the slope of each stair-step using the rise and run and then simplify.

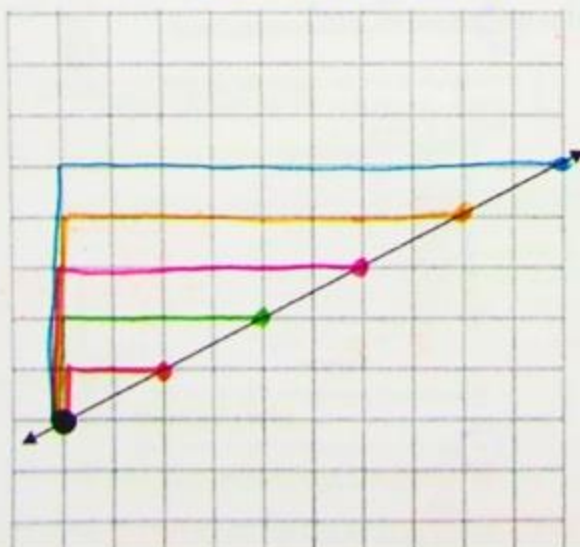


- 1)  $\frac{1}{1} = 1$
- 2)  $\frac{2}{2} = 1$
- 3)  $\frac{3}{3} = 1$
- 4)  $\frac{4}{4} = 1$
- 5)  $\frac{5}{5} = 1$

What is true about the ratios?

All slopes = 1  
(simplified)

2) Make 5 stair steps of different sizes that you can for the line with the point being at the bottom. Find the slope of each stair-step using the rise over run and then simplify.

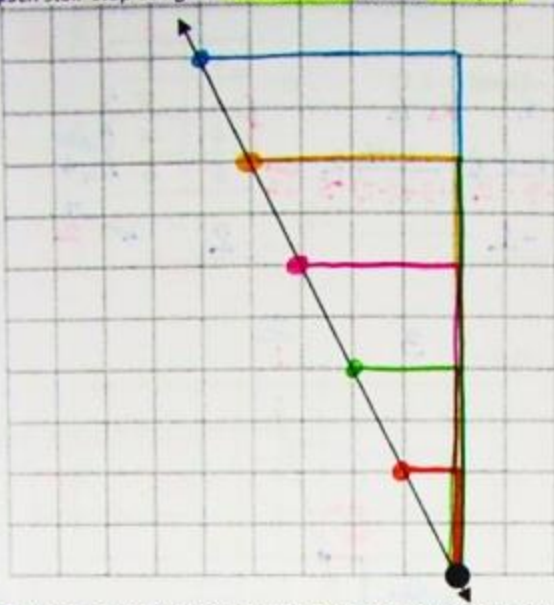


- 1)  $\frac{1}{2} = \frac{1}{2}$
- 2)  $\frac{2}{4} = \frac{1}{2}$
- 3)  $\frac{3}{6} = \frac{1}{2}$
- 4)  $\frac{4}{8} = \frac{1}{2}$
- 5)  $\frac{5}{10} = \frac{1}{2}$

What is true about the ratios?

All slopes =  $\frac{1}{2}$   
(simplified)

2) Make 5 stair steps of different sizes that you can for the line with the point being at the bottom. Find the slope of each stair-step using the rise over run and then simplify.

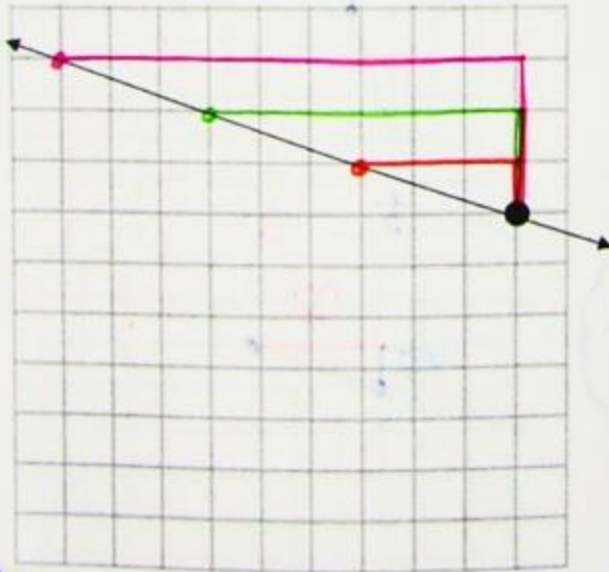


- 1)  $\frac{2}{-1} = -2$
- 2)  $\frac{4}{-2} = -2$
- 3)  $\frac{6}{-3} = -2$
- 4)  $\frac{8}{-4} = -2$
- 5)  $\frac{10}{-5} = -2$

What is true about the ratios?

All slopes =  $-2$   
(simplified)

3) Make 3 stair steps of different sizes that you can for the line with the point being at the bottom. Find the slope of each stair-step using the rise over run and then simplify.



- 1)  $\frac{1}{-3} = -\frac{1}{3}$
- 2)  $\frac{2}{-6} = -\frac{1}{3}$
- 3)  $\frac{3}{-9} = -\frac{1}{3}$

What is true about the ratios?

All slopes =  $-\frac{1}{3}$   
(simplified)

The slope is the same on any given line, no matter how far apart the points are. The stair-steps formed are all similar triangles, they have the same shape, but they are different in size.

Find the slope between the given points.

5)  $(7, -2)$  and  $(9, -1)$   $m = \underline{\hspace{2cm}}$   
 $x_1 \ y_1 \quad x_2 \ y_2$

6)  $(4, 2)$  and  $(-2, 4)$   $m = \underline{\hspace{2cm}}$   
 $x_1 \ y_1 \quad x_2 \ y_2$

$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1}$$

7)  $(-1, 10)$  and  $(-4, 8)$   $m = \underline{\hspace{2cm}}$   
 $x_1 \ y_1 \quad x_2 \ y_2$

8)  $(-1, 8)$  and  $(-7, 2)$   $m = \underline{\hspace{2cm}}$   
 $x_1 \ y_1 \quad x_2 \ y_2$

9)  $(-9, 4)$  and  $(-9, 1)$   $m = \underline{\hspace{2cm}}$   
 $x_1 \ y_1 \quad x_2 \ y_2$

10)  $(3, 3)$  and  $(-6, 6)$   $m = \underline{\hspace{2cm}}$   
 $x_1 \ y_1 \quad x_2 \ y_2$

Find the slope contained in the following T-tables.

11)  $m = \underline{\hspace{2cm}}$

x	y
-2	-6
0	-3
2	0

•  $\frac{\text{change in } y}{\text{change in } x} = \text{slope!}$   
 • change in x

12)  $m = \underline{\hspace{2cm}}$

x	y
0	4
4	-4
8	-12

13)  $m = \underline{\hspace{2cm}}$

x	y

14)  $m = \underline{\hspace{2cm}}$

x	y