**Horizontal and Vertical Lines**

*Warm Up:*Simplify: a. = b.  = c. =

*State a conclusion***:**

* If zero is in the numerator of a fraction, but not in the denominator, the fraction equals \_\_\_\_.
* If zero is in the denominator of a fraction, the fraction is \_\_\_\_\_\_

1. Tell whether or not the graphs below display a function. Calculate the slope (*m*) of each line. You may either find the rise and run directly from the graphs or use the slope formula to get your answers. Write your answers as a fraction and then simplify the fraction if possible. *Hint:* Pick 2 easy points from each line to work with.

A B

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Function: yes or no? Function: yes or no?

Slope of Line A Slope of Line B

*State a conclusion*: The slope of a **horizontal line** equals \_\_\_\_\_\_.

1. Complete a table for each function below and then plot the points from the table on the following coordinate plane. Using a ruler, connect the points on each coordinate plane.

a.  is the same as b.  is the same as

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *x* | -2 | -1 | 0 | 1 | 2 |
| *y* |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *x* | -5 | -2 | 0 | 2 | 5 |
| *y* |  |  |  |  |  |



*State a conclusion:*An equation of the form *y* = \_\_\_\_\_\_\_\_\_\_\_\_\_ will be a **horizontal line**.

1. Which of the following equations will give a graph that is a horizontal line? (Circle all that apply.)
2.  b.  c. 

d.  e.  f. 

1. The slope formula is:
2. Find the slope between the two points using the slope formula.

1. (1,-3) and (-5,-3) b. (-4,4) and (5,4)
2. Without using the slope formula, how can you tell if the slope of a line between two points will be zero just by looking at the two points?

1. Tell whether or not the graph displays a function. Calculate the slope (*m*) of each line. You may either find the rise and run directly from the graph or use the slope formula to get your answers. Write your answer as a fraction and then put the fraction in simplest form.

*Hint:* Pick 2 easy points from each line to work with.

A B



Function: yes or no? Function: yes or no?

Slope of Line A Slope of Line B

*State a conclusion*: The slope of a **vertical line** is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Complete a table for each equation below and plot the points from the table on the following coordinate plane. Using a ruler, connect the points on each coordinate plane.

a.  is the same as b. is the same as

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *x* |  |  |  |  |  |
| *y* | -2 | -1 | 0 | 1 | 2 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *x* |  |  |  |  |  |
| *y* | -5 | -2 | 0 | 2 | 5 |



*State a conclusion*: An equation of the form *x* = \_\_\_\_\_\_\_\_\_\_ will be a **vertical line**.

1. Which of the following equations will give a graph that is a vertical line?

(Circle all that apply.)

1.  b.  c. 

d.  e.  f. 

1. Find the slope between the two points using the slope formula.
2. (1,3) and (1,5) b. (–4,4) and (–4,7)
3. Without using the slope formula, how can you tell if the slope of a line between two points will be undefined just by looking at the two points?