

Exploring Functions and Graphing

Name: _____

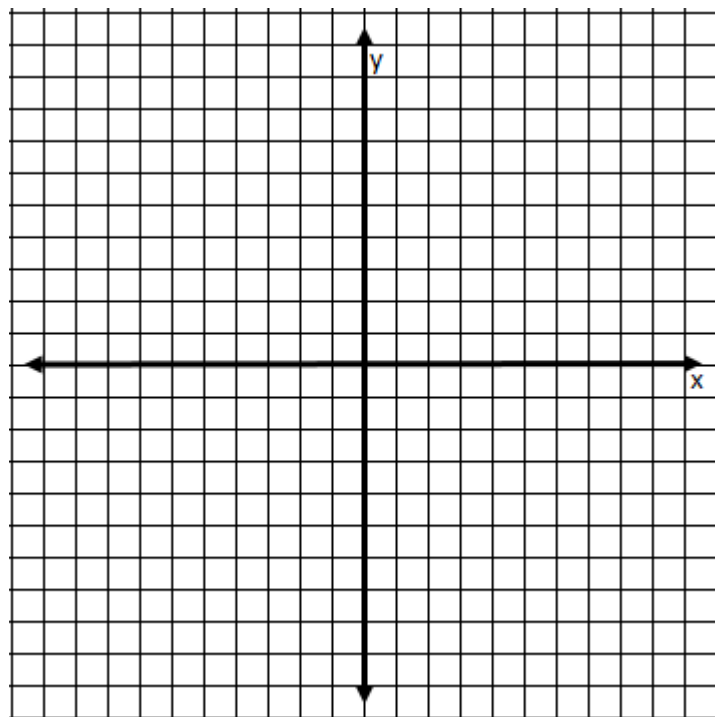
Work through the following questions and statements about a given scenario. You may want to skip some and come back to them because your answers will help you with other questions.

- Write the scenario in words.
- Which values make the relationship true?

Each pair that you find is a point on the line of the graph of the function.

<i>Conversational</i>	If I try _____	I get _____	Coordinate pair written in (x,y) format.
<i>Using algebraic language</i>	If I substitute _____ for x	The y value is _____	
<i>In/out table</i>	In	Out	
<i>Function notation</i>	x	f(x)	
<i>Components of a relation</i>	Domain	Range	
<i>Description of change</i>	Independent variable	Dependent variable	
Coordinate pair (define each if possible)	x	y	
Pair #1			
Pair #2			
Pair #3			
Pair #4			
Pair #5			

- Draw the line on the coordinate grid. Start by marking your scale.



- Is this a **function**? How do you know?

- Circle the **x intercept**. What are the coordinates of this point?

- Circle the **y intercept**. What are the coordinates of this point?

- Draw a **rise** right triangle **run** starting with 2 points on the line. What is the **slope** of the line?

<p>8. Formulas for the equation of a line</p> <p>a. Write the slope-intercept form of the equation of a line. Label what each variable represents.</p> <p>b. Write the point-slope form of the equation of a line. Label what each variable represents.</p>	<p>9. Use one of the formulas to write your function in slope-intercept form.</p> <p>a. What is the slope of your function?</p> <p>b. What is the y-intercept of your function?</p>
<p>10. When graphed on the coordinate grid, what is the shape of this line? How do you know?</p>	
<p>11. Find the x intercept by substituting y = 0 into the equation.</p>	<p>12. Find the y intercept by substituting x = 0 into the equation.</p>
<p>13. Use the slope of a line formula to find the slope.</p>	<p>14. What is the slope of a line that is parallel to this line?</p> <p>15. What is the slope of a line that is perpendicular to this line?</p>

Since all of these questions look at a function from various viewpoints, some of the questions will lead to the same answer. Check to make sure that the following answers match each other; make corrections if they do not match.

- Numbers 7, 9a, 13, and 14 are all about **slope**, and should match. Check the sign as well as the number. Why should 14 match this set of answers, but not 15?
- Numbers 5 and 11 ask for the **x intercept**, so should match.
- Numbers 6, 9b, and 12 ask for the **y intercept**, so should match.