

1. Determine which of the following relations are classified as functions.

a.

State	Number of Representatives
Alaska	7
Arizona	8
California	53
Colorado	7
Florida	25
North Dakota	1

b. The set of ordered pairs
 $\{(\text{eye color}, \text{students in this class})\}$.

c.

$\{(-4, 2), (-2, 3), (0, 14.2), (7, 25), (10, 3)\}$

d. $\{(-4, 2), (-2, 2), (0, 2), (7, 2), (10, 2)\}$

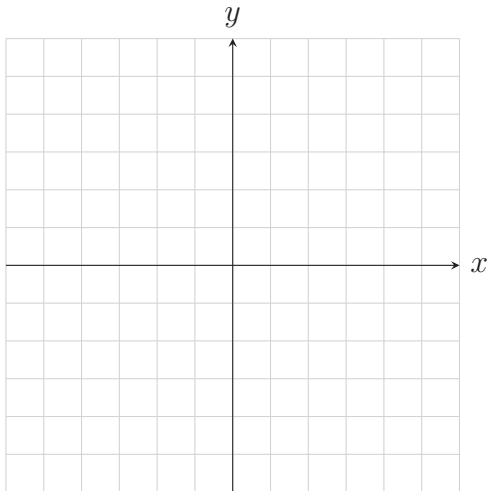
2. Write one or two sentences describing your understanding of what a relationship between inputs and outputs in mathematics is.

3. What is the one requirement necessary for a relationship between inputs and outputs to be considered a function?

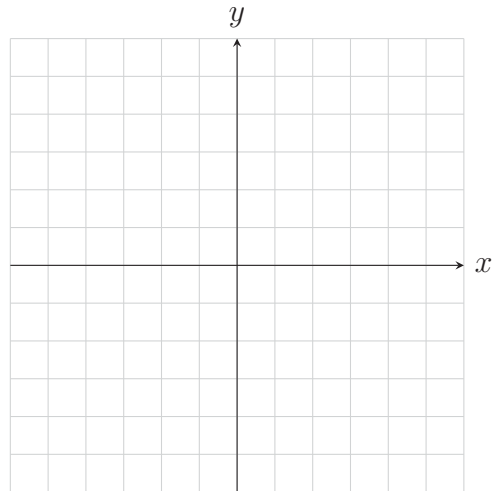
4. Give an example of an equation which you are certain is a function. Make sure to describe which variable is the input and which is the output. Try to use the language “[blank] is a function of [blank].”

5. Give an example of an equation which you are certain is not a function. Explain how you know this. Again, talk about which variable is the input and which is the output.

6. Sketch an example of a graph that you are certain is a function.



7. Sketch an example of a graph that you are certain is *not* a function.



8. Describe what it is, in context of the definition of a function, about the graphs you just drew that makes them a function or not a function.

9. Suppose you have a function f with the following points on its graph. Describe these points using function notation and state which value is the input and which is the output.

a. $(2, -3)$

b. $(0.5, 9)$

10. Suppose you have the following relationships between inputs and outputs described using function notation below. For each, describe the corresponding point on the graph of f and state which value is the input and which is the output.

a. $f(-5) = 6$

b. $f(0) = -11$

11. Match each word with the phrase that best describes it. You may use phrases more than once or not at all.

a. Dependent Variable	1. A set of ordered pairs. (A correspondence between 2 sets.)
b. Domain	2. the input variable (often x)
c. Independent Variable	3. the output variable (often y)
d. Horizontal Intercept	4. (x, y) coordinate. Also known as a point.
e. Range	5. The set of possible output values of the function.
f. Relation	6. $(0, y)$
g. Vertex	7. The set of all possible input values of the function.
h. Vertical Intercept	8. $(x, 0)$
i. x -intercept	9. $y = f(x)$
j. y -intercept	10. A set of ordered pairs in which each input is paired with exactly one and only one element of the output.
	11. The (x, y) that is the maximum or minimum of a parabola.

12. The functions f , g , and h are described below. Use them to answer the following questions.

•

x	$f(x)$
-1	-5
0	1
1	3
2	1
3	-5

• $g(x) = \sqrt{2x + 5}$

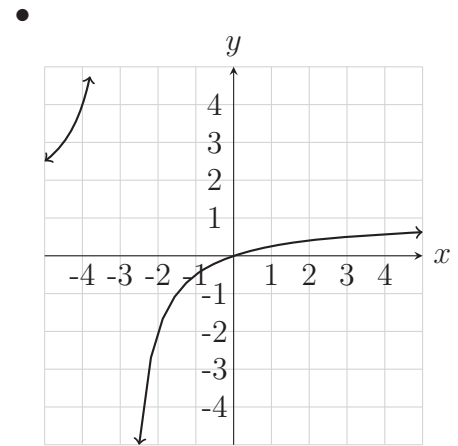


Figure 1: $y = h(x)$

a. Evaluate $f(2)$

g. Solve $f(x) = -5$.

b. Evaluate $g(-3)$

h. Solve $h(x) = 4$.

c. Evaluate $h(-3)$

i. For what values of x is $h(x) < -2$?

d. Describe the function f using a set of ordered pairs.

j. List any intercepts of h .

e. What is the domain and range of g ?

k. Solve $g(x) = 3$.

f. What is the domain and range of f ?

l. What is the domain and range of h ?

