Name: _____ Date: _____

Functions and Relations

Terms to Know:

- Relation: Any set of _____ that has an _____.
- Function: A _____ such that every single _____ has exactly _____ output.

How do I determine if a relation is a function?

- Each input must have _____ output.
- Look at the graph….The vertical line test: **No** vertical line can pass through _____ points on the graph.

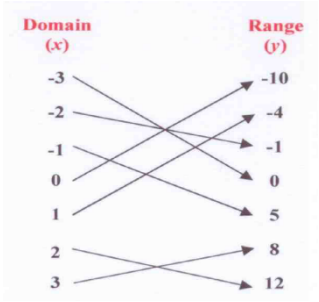
You try these: Are these relations functions?

1. $\{(3,2),(4,3),(5,4),(6,5)\}$

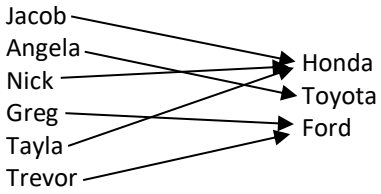
2.

input	8	2	0	2
output	-2	-1	0	1

3.



4.



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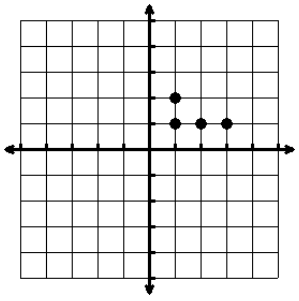
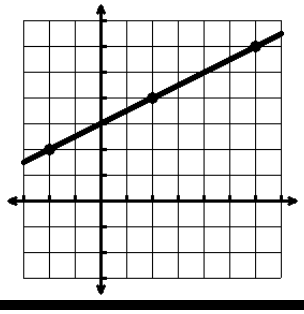
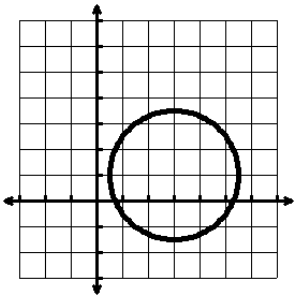


6.



7.



Function Notation:

- Function notation is _____. It is pronounced _____.
- f(x) is a fancy way of writing _____ in an _____.
  - Example: f(x) = 2x + 4 is the same as y = 2x + 4

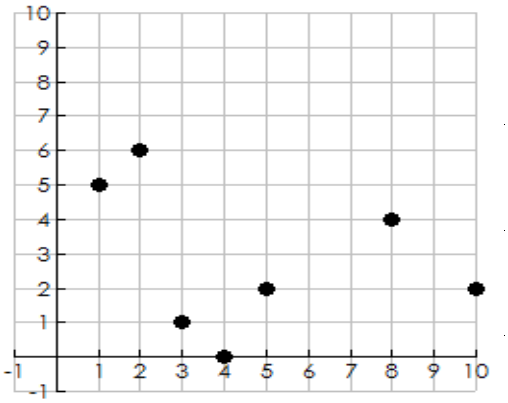
Function Notation	x-y Notation
$f(x)=5x+2$	
	$y=-3x-7$

Evaluating Functions:

8. Given $f(x) = 2x + 3$, find $f(-2)$	9. Given $f(x) = 32(2)^x$, find $f(3)$	10. Given $f(x) = x^2 - 2x + 3$, find $f(-3)$	11. Given $f(x) = 3^x + 1$, find $f(3)$
8. Given $f(x) = -5x + 1$, find $f(-3)$	9. Given $f(x) = 7(4)^x$, find $f(2)$	10. Given $f(x) = x^2 + 5x - 6$, find $f(-2)$	11. Given $f(x) = 3^{x-2}$, find $f(4)$

Find the indicated values by using the graph.

1. $h(2) =$ _____
2. $h(4) =$ _____
3. $h(1) =$ _____
4. $h(5) =$ _____
5. $h($_____$) = 4$
6. $h($_____$) = 1$
7. *What are the values for* $h($_____$) = 2$?



Find the indicated values by using the table.

8. $g(10) =$ _____
9. $g(6) =$ _____
10. $g(0) =$ _____
11. $g(22) =$ _____
12. $g($_____$) = 21$
13. $g($_____$) = 33$

x	g(x) = 2x + 1
0	
2	
4	
6	
8	
10	
12	
14	
16	
18	
20	