

1. Find  $f(1)$  if  $f(x) = -3x + 12$ .

$$f(1) = -3(1) + 12$$

$$= -3 + 12$$

$$f(1) = 9$$

3. Find  $f(-2)$  if  $f(x) = |4x - 1|$ .

$$f(-2) = |4(-2) - 1|$$

$$= |-8 - 1|$$

$$= |-9|$$

$$f(-2) = 9$$

Find  $x!$

2. Find the input if  $f(x) = -3x + 12$  when  $f(x) = 0$ .

$$0 = -3x + 12$$

$$\frac{-12}{-3} = \frac{-3x}{-3}$$

$$4 = x \quad x = 4$$

4. Find the input if  $f(x) = 2x + 5$  when  $f(x) = -11$

$$-11 = 2x + 5$$

$$\frac{-16}{2} = \frac{2x}{2}$$

$$-8 = x$$

$$x = -8$$

Determine if the following are functions or not. Explain why or why not.

5.

x	y
16	-2
1	-1
0	0
1	1

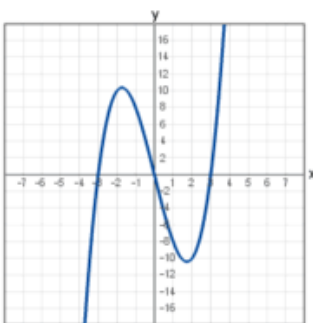
NOT a function!  
 $x=1$  has two outputs.

6.

x	y
-3	11
0	5
3	-1
6	-7

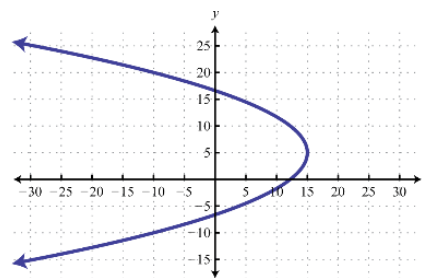
Yes!  
Every input has exactly one output

7.



Yes!  
Passes vertical line test

8.



NO! Does not pass vertical line test.

9-10: Write the equation that represents the verbal rule.

9. The output is 3 plus the input.

$$f(x) = x + 3$$

10. The output is one less than 5 times the input.

$$f(x) = 5x - 1$$

11-12: Fill in the table and graph.

11.  $f(x) = 2x + 1$

$$f(-2) = 2(-2) + 1$$

$$= -4 + 1 = -3$$

$$f(-1) = 2(-1) + 1$$

$$= -2 + 1 = -1$$

$$f(0) = 2(0) + 1$$

$$= 0 + 1 = 1$$

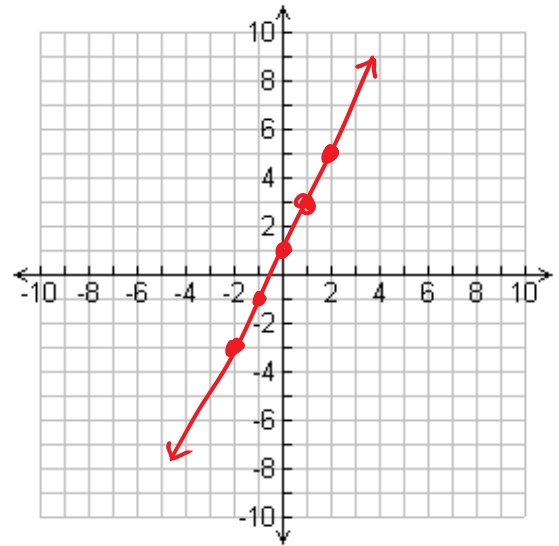
$$f(1) = 2(1) + 1$$

$$= 2 + 1 = 3$$

$$f(2) = 2(2) + 1$$

$$= 4 + 1 = 5$$

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



12.  $g(x) = x^2 - 1$

$$g(-2) = (-2)^2 - 1$$

$$= 4 - 1 = 3$$

$$g(-1) = (-1)^2 - 1$$

$$= 1 - 1 = 0$$

$$g(0) = 0^2 - 1$$

$$= 0 - 1 = -1$$

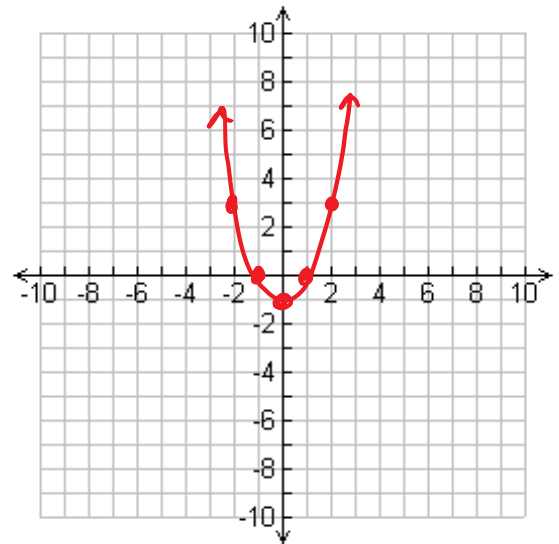
$$g(1) = (1)^2 - 1$$

$$= 1 - 1 = 0$$

$$g(2) = (2)^2 - 1$$

$$= 4 - 1 = 3$$

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



**SELF-REFLECT:** On a scale of 1 - 5 (1 = I need more practice.... 5 = I can teach this stuff!)... how do you feel about functions? Explain ☺

