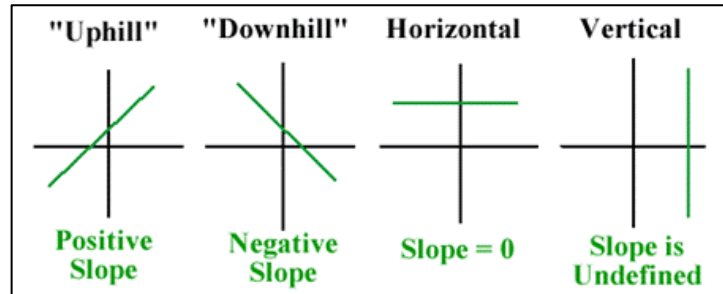
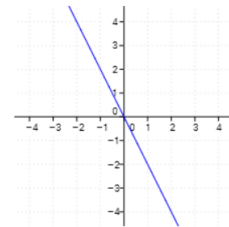
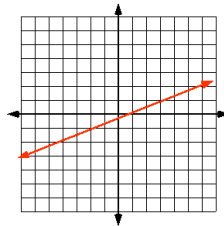
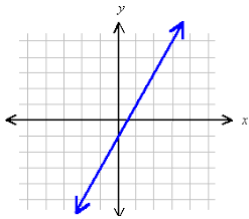


## Positive and Negative Slope:

When given the graph of a line, you can tell whether or not it's slope is positive or negative without knowing what the slope actually is. You can tell by simply looking at the line! Here's how:



Examples: Decide whether or not each line has a positive or negative slope.



## 4.7 Linear Functions

### Function Notation

When an equation is used to represent a function, it is convenient to name the function so that it can be referred to easily.  $f(x)$  and  $y$  are the same thing!  $f(x)$  is another name for  $y$  and is read "f of x"

It DOES NOT mean f times x!!

$$y = 3x - 1$$

$$f(x) = 3x - 1 \quad \leftarrow \text{Function notation}$$

These 2 things are EXACTLY the same:

$$\text{Evaluate } 2x^2 - 1 \text{ when } x = -1$$

$$\text{Evaluate } f(-1) \text{ if } f(x) = 2x^2 - 1$$

### Finding the x value of a function:

Steps:	Example: Find the value of x for the function $f(x) = 2x - 10$ so that $f(x) = 6$
1.	1.
2.	2.
3.	3.

Examples:

a. For the function  $f(x) = 2x - 10$ , find the value of  $x$  so that  $f(x) = 6$ .

b. For the function  $g(x) = 3x^2 + 1$ , find the value of  $x$  so that  $g(x) = -2$

### Evaluating a Function given an $x$ value:

Steps:	Example: Evaluate $f(3)$ for the function $f(x) = 5x + 17$
1.	1.
2.	2.
3.	3.

Examples: Let  $g(x) = -x^2 + 4x + 1$ . Find each function value.

d.  $g(2)$

e.  $g(-1)$