Functions

Type #1 - Linear Functions (y=mx+b)

- **<u>Shape</u>** -   Straight line

- **<u>m</u>** -   Slope

- **<u>b</u>** -   y – intercept

Don't forget! You need to determine if the slope is positive or negative!!

**Always Look Left and Right **
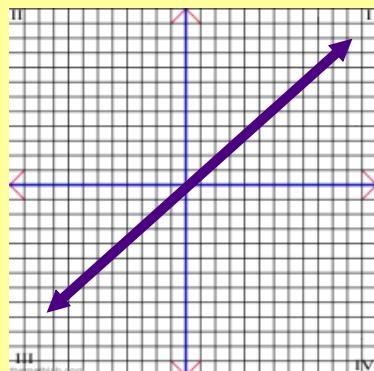
Uphill (+)
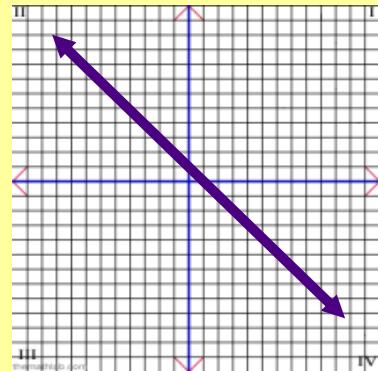
Down Hill (-)

How to Graph Linear Graphs

** There are <u>two ways</u> to graph linear functions**

Type #1 - Tables of Values

- When making a table of values, you set up what we call a t-chart.

Y=2X+1

X	Y
-1	-1
0	1
1	3

When x = -1

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

When x = 0

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

When x = 1

$y = 2(1) + 1$
$y = 2 + 1$
$y = 3$

X	Y
-1	-1
0	1
1	3

y = 3x-2

X	Y
1	1
0	-2
-1	-5
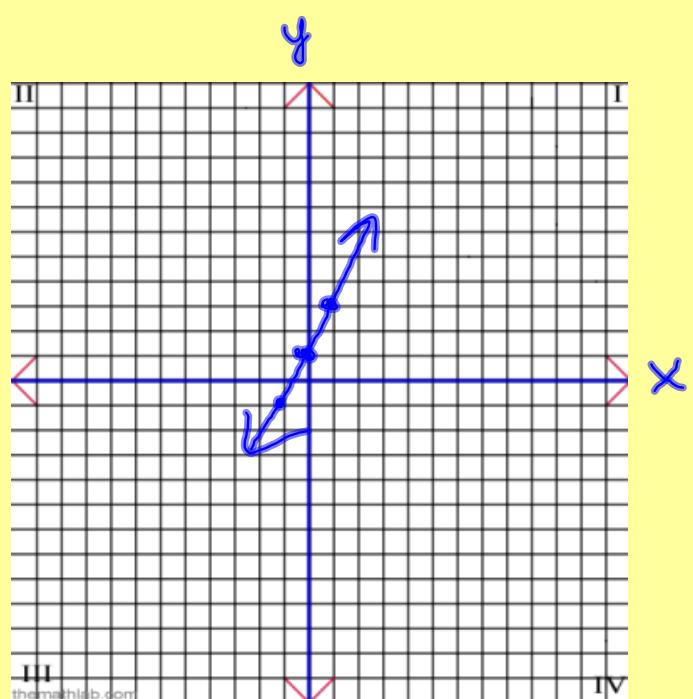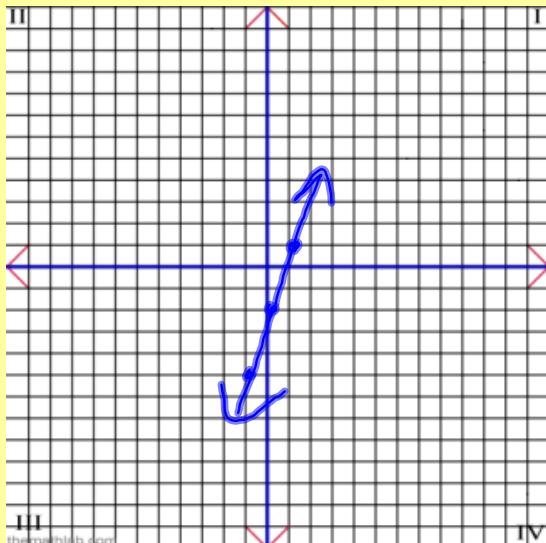
y = 2/3 x - 4
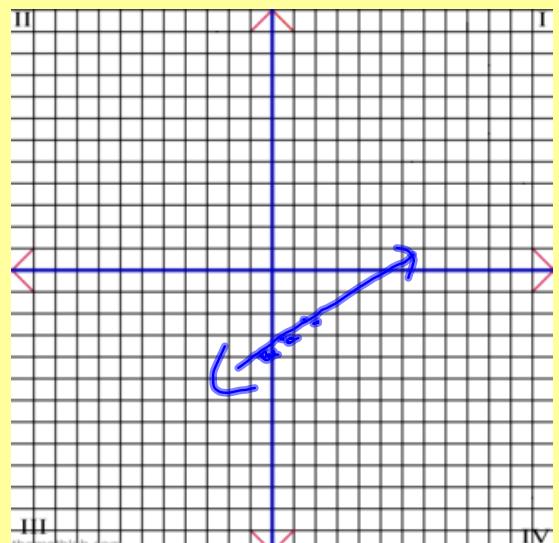
X	Y
1	-3.3
2	-2.6
3	-4

Type #2 - Using the y-intercept form (y=mx+b)

$$y = mx + b$$
$$y = 2x + 1$$

Y –intercept (b):   1

Slope (m) : $\dfrac{\text{Rise}}{\text{Run}} = \dfrac{2}{1}$

Start on the y-axis at 1

Over One, Up Two!

up 2, over 1
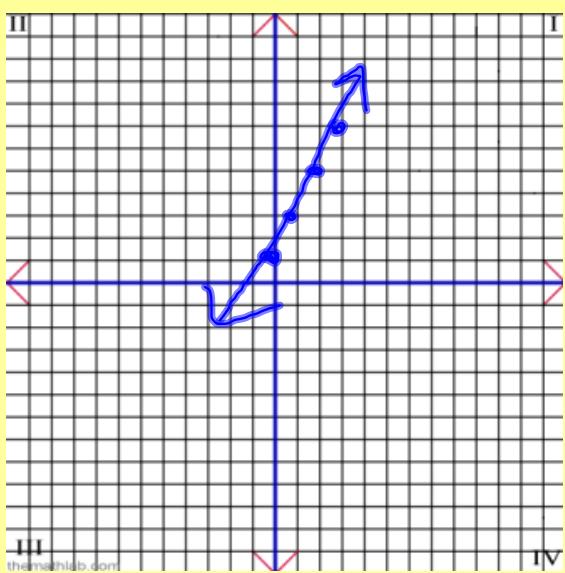
Equation = $y = mx + b$
$y = 1x + 3$

b = 3

m = $\frac{1}{1}$ = 1
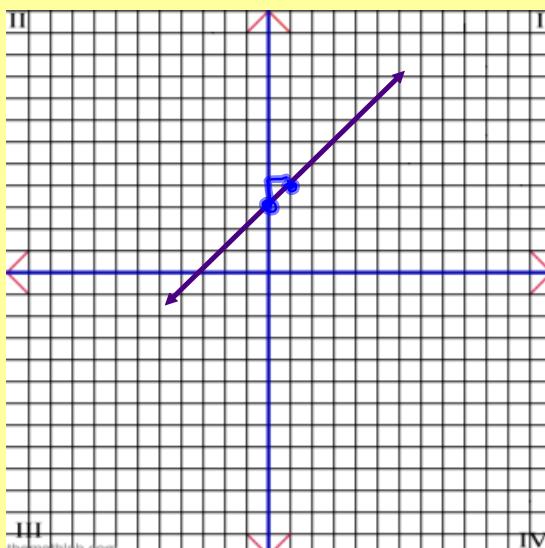
Equation = $y = -2x + 0$

b = 0

m = $\frac{-2}{1}$ = -2
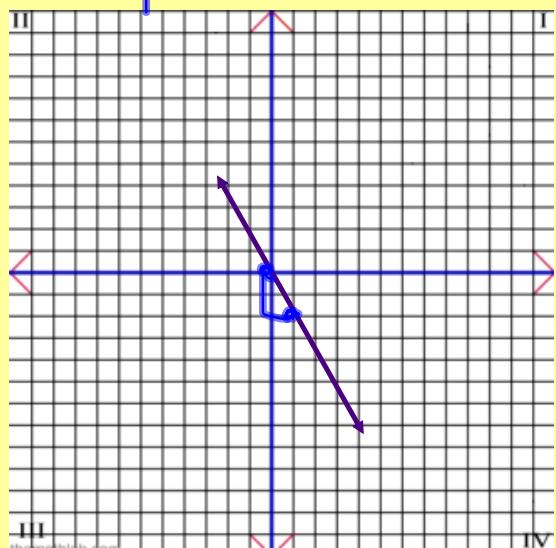
$$y = mx + b$$

$$\frac{3y}{3} = \frac{6x}{3} + \frac{9}{3}$$

$$y = 2x + 3$$

$$m = 2$$

$$b = 3$$

$$3(y - 1) = 6x - 9$$

$$3y - 3 = 6x - 9 + 3$$

$$\frac{3y}{3} = \frac{6x}{3} - \frac{6}{3}$$

$$y = 2x - 2$$

$$m = 2$$

$$b = -2$$

$$\frac{2}{3}\overset{\cdot 3}{y} - 4\overset{3}{} = \overset{\cdot 3}{8x} - 4\overset{\cdot 3}{}$$

$$2y \boxed{-12} = 24x - 12 + 12$$

$$\frac{2y}{2} = \frac{24x}{2}$$

$$y = 12x + 0$$

$$b = 0$$

$$m = \frac{12}{1}$$