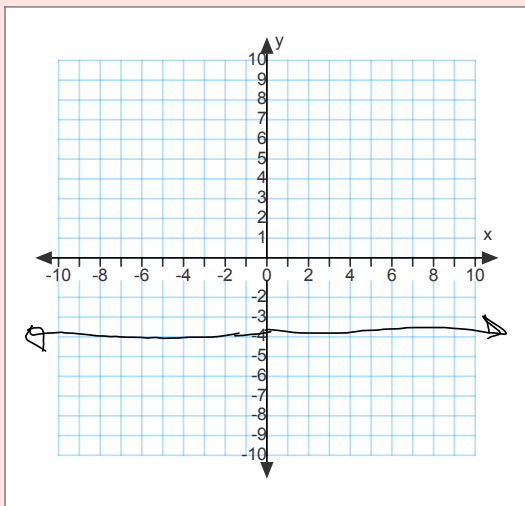


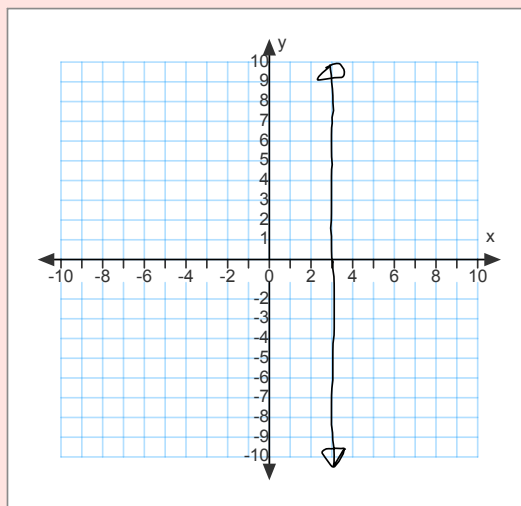
Warm up-

1. Graph $y = -4$



Slope = 0

2. Graph $x = 3$



Slope = und

3. The Rate of Change describes the slope of a line. What did we define Rate of Change to be?

How much a line is increasing or decreasing by.

- a. A horizontal line has slope equal to 0.
- b. A vertical line has slope equal to und.

Can lines have slope of anything other than zero or undefined?

When we add another **variable** to an equation, we will get a line with a **slope** other than **zero** or **undefined**.

Examples:

1. $y = 3x$

2. $y = 4x$

3. $y = 5x$

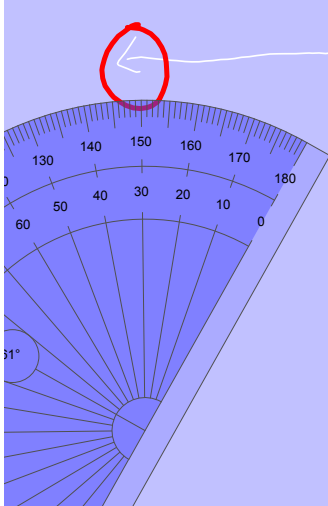
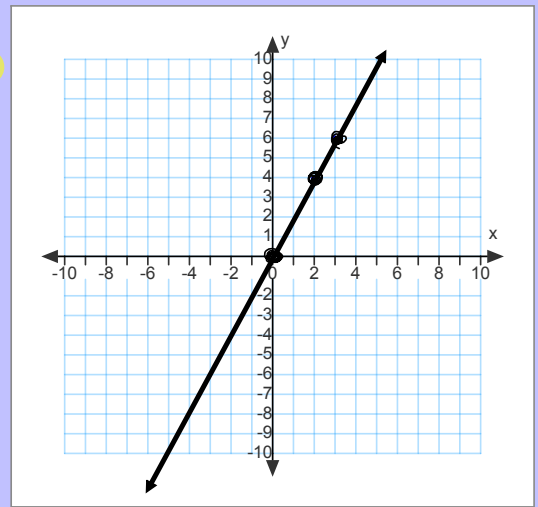
$$y = -2x$$

Steps to Graphing Lines

1. Make a table w/ atleast 3 points
2. Plot points on the coordinate plane
3. Connect points

Ex 1: Graph $y = 2x$

x	y
5	10
6	12
7	14
3	6
4	8
2	4



Steps to Graphing Lines

1.

Ex 1: Graph $y = -x$

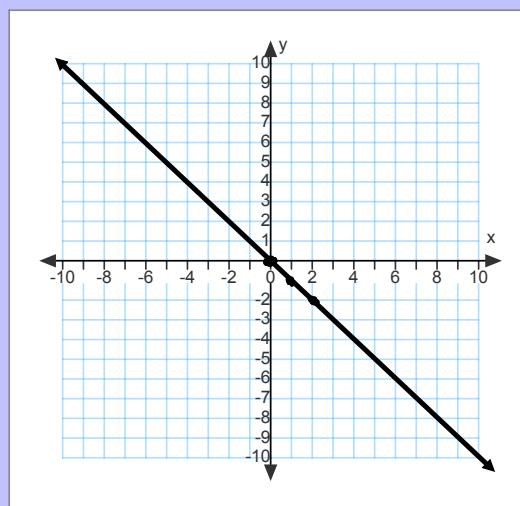
x	y
0	0
1	-1
2	-2

2.

3.

$$y = -1x$$

$$y = -1(1)$$



The number in front of the x in the equation is represented by the variable m.

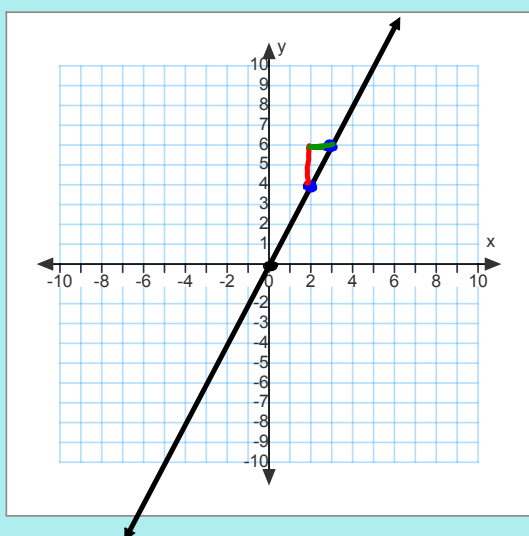
$$\underline{m} = \underline{\text{slope}}$$

We have talked about slope being the rate of change.

Another way we define slope is:

$$\underline{\text{slope}} = \frac{\text{Rise}}{\text{Run}}$$

The line $y=2$ looks like:



The **rise** is the vertical change from point to point.

The **run** is the horizontal change from point to point.

If the rise is 2 and the run is 1 then the slope is 2.

$$\text{Slope} = m = \frac{\text{rise}}{\text{run}} = \frac{2}{1}$$

Examples to try on your own.

For each equation, please

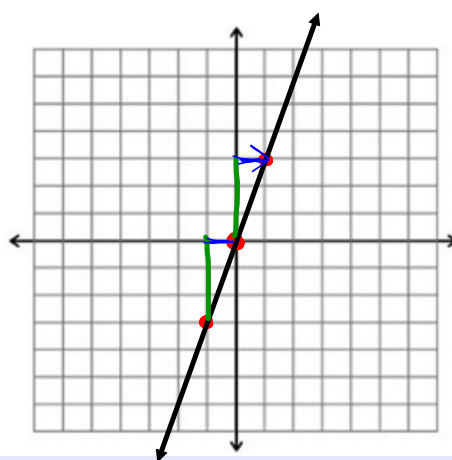
1. Make a **table**
2. Plot the **points**
3. **Graph** the line
4. Find the **rise** and the **run**
5. Tell me the **slope**

1. $y = 3x$

x	y
-1	-3
0	0
1	3

rise = 3
run = 1
slope = 3

$\frac{\text{rise}}{\text{run}} = \frac{3}{1}$



2. $y = -2x$

x	y
-1	
0	
1	

rise = 4 2 $\frac{4}{-2}$
run = -2 -1 $\frac{-4}{2}$
slope = -2

Homework!