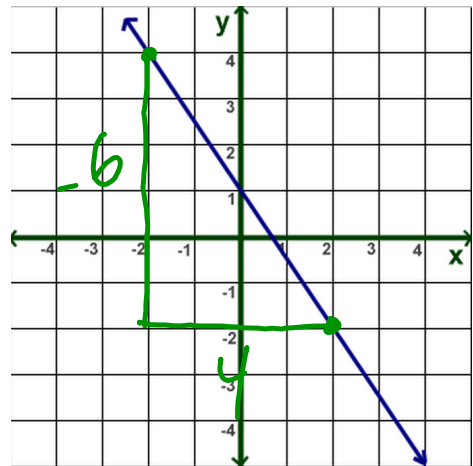# Review of Slope:

March 1/16

To find the slope of a line by looking at a graph :

1. Find the **Rise**(up or down)

2. Find the **Run**(right)

3. Find Slope **m** = $\dfrac{-6}{4} = \dfrac{-3}{2}$

-6

4

➡ Always put in LOWEST TERMS!

4. Lines with positive slopes go ___*up to*___
___*the right*___

Lines with negative slopes go ___*down*___
___*to the right*___

Finding the Equation of a Line

*Just like how each person has a unique name, so do lines!

*Lines have special names called "equations"

$$y = 2x + 0$$

*Each equation has two important parts:
1. **Slope (m)**
2. **y-intercept/starting point (b)**

$$y = mx + b$$

slope

y-intercept or starting point

Ex. 1. For each equation state:

    * the slope $y = mx + b$

    * y-intercept(starting point)

                       ← slope

                    $m = \frac{4}{5}$

a) $y = \dfrac{4}{5}x + 1$ ←y-int

                    $b = 1$

b) $y = -9x$ $m = -9$

                  $b = 0$

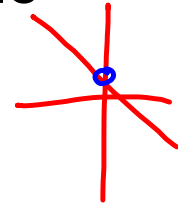c) $y = \dfrac{-2}{7}x - 3$ $m = \dfrac{-2}{7}$ $b = -3$
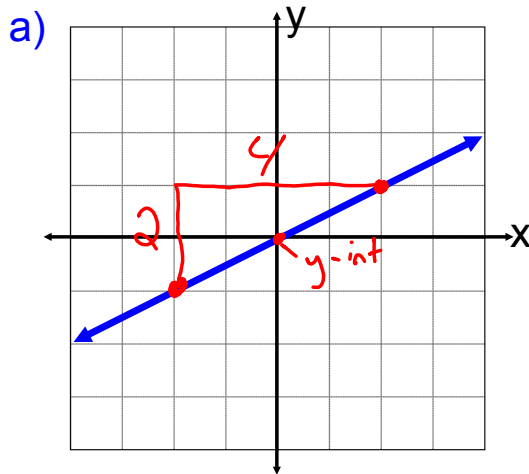
d) $y = 6x$ $m = 6$ $b = 0$

Steps to find the equation of a line:

1. Find the slope(m)   3

2. Find the y-intercept(b) -2

3. Plug the values for **m** and **b** into the equation, y = mx + b
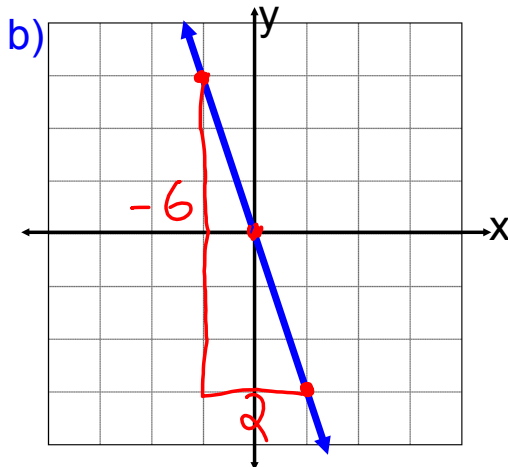
$$y = 3x - 2$$

Ex. 2. Find the equation of the lines:

a)

$m = \dfrac{2 \div 2}{4 \div 2}$

$m = \dfrac{1}{2}$ $b = 0$

$y = \dfrac{1}{2}x + 0$

or

$y = \dfrac{1}{2}x$

b)

-6

2

$m = \dfrac{-6}{2}$

$m = \dfrac{-3}{1}$ or -3

$b = 0$

$\boxed{y = -3x}$ or

$\boxed{y = \dfrac{-3x}{1}}$

c) Line passes through $(-1, 0)$ and $(2, 3)$

x, y x, y

$y = \mathbf{m}\,x + \quad \mathbf{b}$

slope   **y-intercept**

$m = \dfrac{3}{3}$ $b = 1$

$= 1$

$y = 1x + 1$

or

$\boxed{y = x + 1}$

$(2, 3)$

3

3

$(-1, 0)$
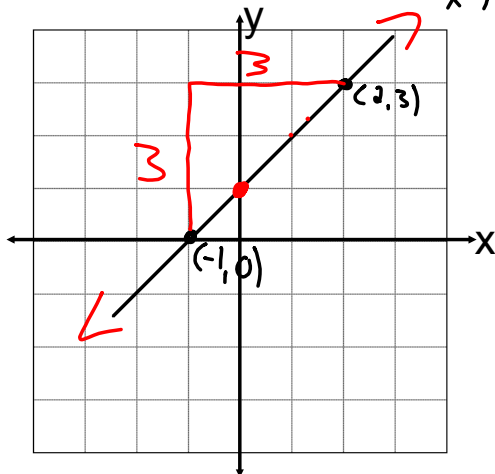
Homework:

Handout: 1. Investigate Slope and y-intercept

2. Finding Slope from a Graph

-you need to find the **equations**
of lines #1, 2, 3, 4, 9, 14