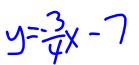
FINDING THE EQUATION OF A LINE March 7/16

The general equation of a line is...

y=mx+b slope y-int

To write the equation of a line, we need:

1. Slope 2. y-int



Ex. 1. Write the equation of the line that has a slope of $-\frac{3}{4}$ and a y-intercept of -7.

Now, we are not always given the **slope** and the **y-intercept**!

*When given the **Slope** and a **Point**: (X, y)

- 1. Plug the slope(m) into the equation
- 2. Plug the x and y values into the equation
- **3.** Solve the equation for b $\mathcal{Y}=\mathcal{M}X+\mathcal{D}$
- 4. Write the equation with values for m and b
- **Ex. 1.** Find the equation of the line that has:

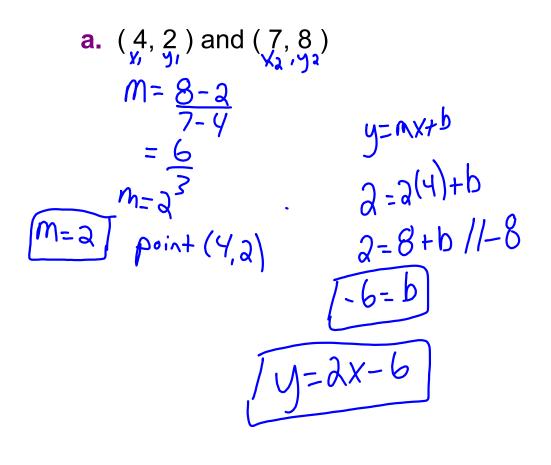
a. slope -2, point (-4, 1)

$$Y = -2x + b$$

 $I = -2(-4) + b$
 $I = 8 + b // -8$
 $-7 = b$

b.
$$m = \frac{1}{2}$$
, point (0, -5)
 $y = mx + b$
 $-5 = \frac{1}{2}(0) + b$
 $-5 = 0 + b$
 $-5 = b$

- *When given 2 Points: (1, 2) (4, 5)**1.** Use the points to find the slope $M = \frac{1}{2}$
 - 2. Plug the slope and one point into the equation
 - 3. Solve the equation for b
 - 4. Plug values for m and b into the equation of a line
- **Ex. 3.** Write the equation of the line passing through the points:



b. (6, -10) and (-9, 15)

$$M = \frac{y_{2} - y_{1}}{x_{2} - x_{1}} = -\frac{25}{15} \text{ or } = \frac{-25}{15}$$

$$= \frac{19}{15} \frac{+}{10} = -\frac{5}{3} - \frac{5}{3} \times \frac{6}{15}$$

$$= \frac{35}{-15} - \frac{5}{3} \times \frac{6}{10} = -\frac{5}{3} \times \frac{6}{10} + \frac{5}{3} \times \frac{6}{10} + \frac{10}{5} = -\frac{5}{3} \times \frac{6}{10} + \frac{10}{5} = -\frac{10}{5} \times \frac{6}{5} + \frac{10}{5} = -\frac{10}{5} \times \frac{10}{5} + \frac{10}$$

March 07, 2016

Homework:

Handout: Writing Equations of Lines

#2

#5acde

#7abcde