# WARMUP 10/(SLOPE OF y = 2x + 3)

It would be

less steep.

Same slope,

but higher

up (bigger

- 1. How would the graph of y = 2x + 1 look different than the graph of y = 5x + 1?
- 2. How would the graph of y = 3x + 8 look different than the graph of y = 3x + 2?
- 3. How would the graph of  $\mathbf{y} = -\frac{2}{3}\mathbf{x} 4 \operatorname{look}_{\text{It would be}}_{\text{It would be}}$ different than the graph of  $\mathbf{y} = \frac{2}{3}\mathbf{x} - 4$ ?
- 4. How would the graph of y = 5x look different than the graph of  $y = \frac{1}{5}x$ ? It would be much steeper.
- 5. How would the graph of y = 2x 10 look Trick different than the graph of y = -10 + 2x? they would be the same



# GRAPHING Y = MX + B

Before, all you knew was that "something times x plus something" makes a straight line. Now you now WAY more...

# y = mx +

This number controls how steep the graph is

From your yintercept, count up or down this much, and right 1

If it's a fraction, you can do numerator = up or down and denominator = right

If you plugged in "0", you would get this number for y

#### So START AT THIS NUMBER on the y-axis

# **REMEMBER:**

- This is just a shortcut!!!
- You can <u>always</u> fill out a table to graph an equation.
- BUT, you don't need the table anymore.
  You already know that y = 3x + 8 is going to start at the 8 and increase by 3 for each x.
- You already know that  $y = \frac{1}{2}x 4$  is going to start at the -4 and increase by 1 for every 2 x.

# **DURING THIS LESSON...**

• You <u>may not</u> be working on your homework.

 However, if we get done with our lesson early, we will have time in class to work on it!

#### • Graph: y = x - 2





#### • Graph: y = 3x

#### Y-intercept is 0!















y=2x-4



y = -x + 6





y = 3x + 1

# NON-EXACT GRAPH...

• Which could be the equation?



R

# 8 CHOICE MULTIPLE CHOICE!!!

• Which could be the equation?



# STORY PROBLEM

- A taxi fare y can be determined by the equation y = 0.50x
  + 3.50, where x is the number of miles traveled.
- What is the graph going to look like? Describe it.
  Y-intercept at 3.5; will increase 0.5 for each x
- Draw the graph.
- What is the slope of the line? What does this mean in terms of the situation?

Slope = 0.5; each mile costs 0.5 dollars (50 cents)

 What is the y-intercept of the line? What does this mean in terms of the situation? y-intercept = 3.5; going 0 miles costs \$3.50 ("flat fee" of \$3.50)

## IN ANY REAL-WORLD SITUATION:

- The slope is the <u>RATE</u> of increase or decrease.
  - (dollars per day, inches per year, etc.)
- The y-intercept is the starting amount.

# EQUATION FOR THIS SITUATION?

 You already have 60 pineapples. You then buy 8 more pineapples per day.

 Write an equation in the form y = mx + b to represent the situation.

# y = 8x + 60

# HOMEWORK: SLOPE-INTERCEPT FORM 4-SECTION WORKSHEET

- Work <u>individually</u>
- Help each other if they ask
- If you feel fuzzy on this, please try a few from each section so that you don't get stuck later!