## WARMUP 10/(SLOPE OF $\boldsymbol{y}=\mathbf{2 x}+\mathbf{3})$

1. How would the graph of $y=2 x+1$ look It would be different than the graph of $y=5 x+1$ ? less steep.
2. How would the graph of $y=3 x+8$ look Same slope, different than the graph of $y=3 x+2$ ? $\quad \begin{aligned} & \text { but higher } \\ & \text { up (bigger }\end{aligned}$
3. How would the graph of $y=-\frac{2}{3} x-4$ look $_{\mathrm{lt}}^{\mathrm{y} \text {-intercept) }}$ we different than the graph of $y=\frac{2}{3} x-4 ? \quad \begin{aligned} & \text { decreasing } \\ & \text { instead of }\end{aligned}$
4. How would the graph of $y=5 x$ look different than the graph of $\mathrm{y}=\frac{1}{5} x$ ? $\quad \begin{aligned} & \text { It would be } \\ & \text { much steeper. }\end{aligned}$
5. How would the graph of $y=2 x-10$ look different than the graph of $\mathrm{y}=-10+2 x$ ? they would be the same

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## - 609K

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.. raeee92 David, I love you!!!!
$\odot$ pfloss KEVIN!!!!
$\square$

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

# $y=m x+b$ 

This number
controls how steep
the graph is
So START AT THIS
NUMBER on the $y$-axis
From your y-
intercept, count up
or down this much,
and right 1
If it's a fraction, you can do
numerator = up or down
and denominator $=$ right

REMEMBER:

- This is just a shortcut!!!
- You can always fill out a table to graph an equation.
- BUT, you don't need the table anymore. You already know that $y=3 x+8$ is going to start at the 8 and increase by 3 for each $x$.
$\bigcirc$ 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 may not be working on your homework.
- However, if we get done with our lesson early, we will have time in class to work on it!

๑ Graph: $y=x-2$
Slope is 1 !


- Graph: $y=3 x$


## Y-intercept is 0 !



- Graph: $y=\frac{5}{2} x$




## WRITE AN EQUATION OF THE LINE:



## WRITE AN EQUATION OF THE LINE:

$$
y=\frac{3}{4} x+2
$$



## WRITE AN EQUATION OF THE LINE:

$y=2 x-4$


## WRITE AN EQUATION OF THE LINE:

$y=-x+6$


## WRITE AN EQUATION OF THE LINE:

## WRITE AN EQUATION OF THE LINE:

$y=3 x+1$


## NON-EXACT GRAPH...

$\bigcirc$ Which could be the equation?
A. $y=x+4$


## 8 CHOICE MULTIIPLE <br> CHOICE!!

- Which could be the equation?

$$
\begin{aligned}
& \text { A. } y=\frac{1}{3} x+4 \\
& \text { B. } y=\frac{1}{3} x-4 \\
& \text { C. } y=3 x+4 \\
& \text { D. } y=3 x-4
\end{aligned}
$$

E. $y=-\frac{1}{3} x+4$
F. $y=-\frac{1}{3} x-4$
G. $y=-3 x+4$
H. $y=-3 x-4$

## STORY PROBLEM

- A taxi fare $y$ can be determined by the equation $y=0.50 x$ +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?

$$
\text { Slope }=0.5 \text {; each mile costs } 0.5 \text { dollars ( } 50 \text { cents) }
$$

- 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 RATE of increase or decrease.
- (dollars per day, inches per year, etc.)
$\odot$ The $y$-intercept is the starting amount.


## EOUATION FOR THIS SITUATION?

- You already have 60 pineapples. You then buy 8 more pineapples per day.
$\bigcirc$ Write an equation in the form $y=m x+b$ to represent the situation.

$$
y=8 x+60
$$

## HOMEWORK: SLOPE=\|NTERCEPT FORM 4-SECTION WORKSHEET

- Work individually
- 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!

