# Welcome to Class!!

## You will need:

~ Pencil

~ Highlighter

~ Ruler

~ Binder

~ Vocabulary Sheet

## Homework:
ndout 1.2 Linear Functions & Slope Intercept

**Stick Quiz**     8/27/18
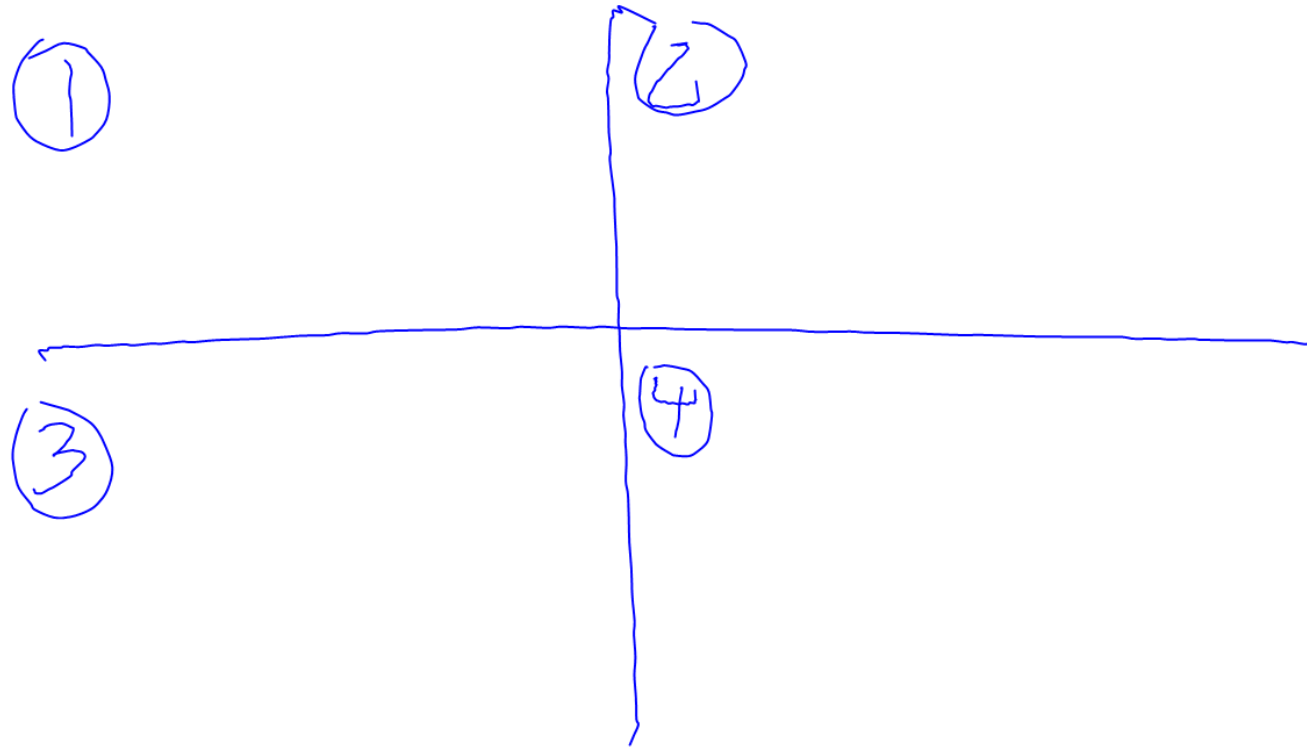
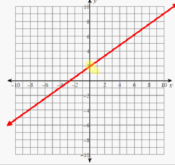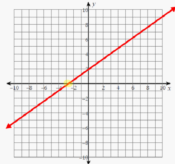**Solve the equation for the**

1)  $-12 + 6y = 24$, **for y**   $y = 6$

2)  $ax + bmy = 2T$, **for m**
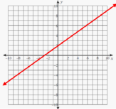
$$m = \frac{2T - ax}{by}$$

①

②

③

④

## Unit 1.2: Linear Functions and Slope-Intercept Form

### Vocabulary:

| Unit 1 Supplement on Linear Equations: | |
|---|---|
| **Word** | **Definition** |
| Slope | How steep a straight line is. $-5$ Steeper $\frac{1}{2}$ |
| Linear Function | A function that makes a straight line when it is graphed. $f(x) = -2x$ |
| Linear Equation | An equation that makes a straight line when it is graphed. $y = 2x$ |
| y-intercept | Where a line or curve crosses the y-axis of a graph. The y value when x equals 0. |
| x-intercept | Where a line or curve crosses the x-axis of a graph. The x value when y equals 0. |
| Slope-Intercept Form | $y = mx + b$ Slope y-int |

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| Slope-Intercept Form | $y = mx + b$ |
| Parallel Lines | Lines on a plane that never meet. They are always the same distance apart. They have the same _Slope_ |
| Perpendicular Lines | Lines that are at right angles (90°) to each other. Their slopes are _Opposite reciprocals._ |

# Put on same page below today's Stick Quiz

## Unit 1.2: Linear Functions and Slope-Intercept Form

### Example – Finding Slope Given two Points:

**1)**  $(\overset{x_1 \ y_1}{-3, 7})$ and $(\overset{x_2 \ y_2}{-2, 4})$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{4 - 7}{-2 + 3} = \frac{-3}{1} = \boxed{-3}$$
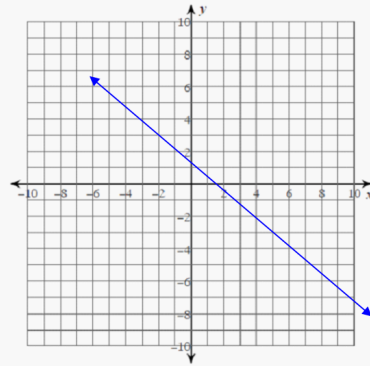
**2)**  $(3, 1)$ and $(-2, 4)$

$$m = -\frac{3}{5}$$

## Slope of a Line NOTES

Date: _8/27/18_

### Positive Slope
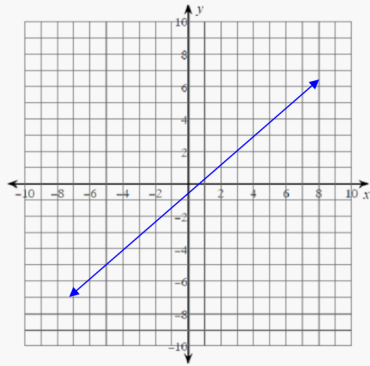
### Negative Slope

### Zero Slope

Horizontal Lines y=3
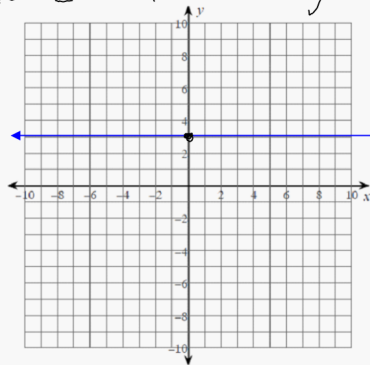
### Undefined Slope

x=3

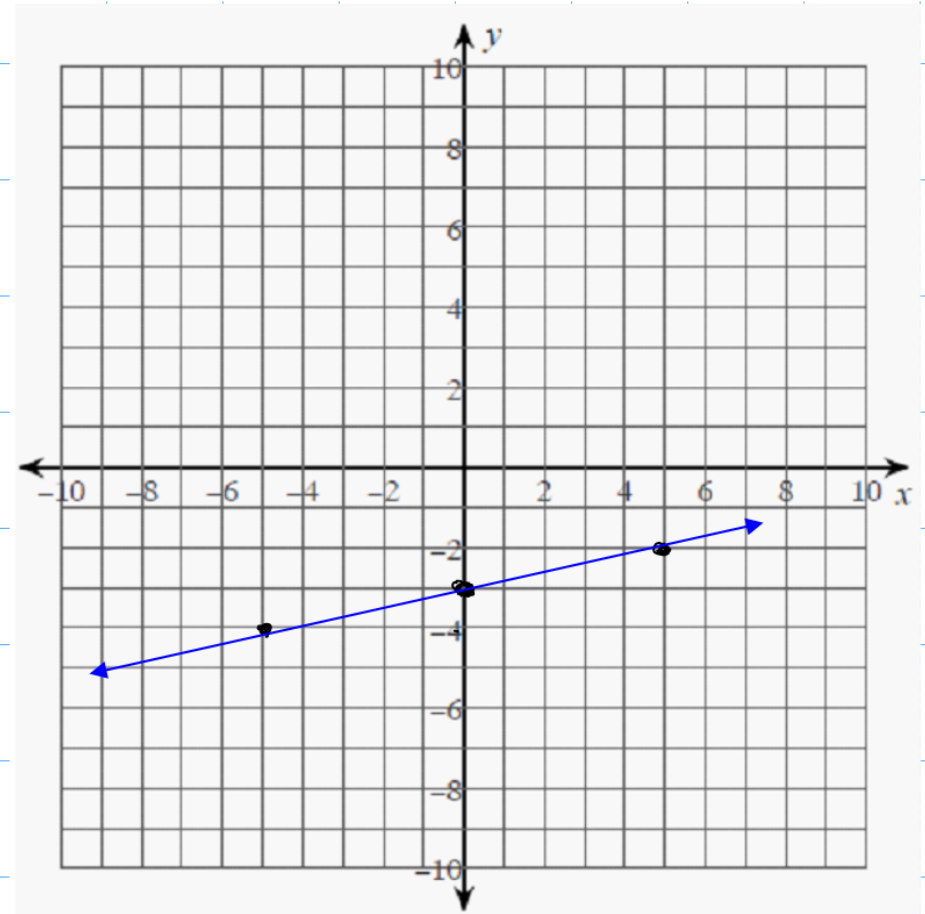Vertical
Undefined
X=#

HOY

Horizontal
slope = #
slope = 0
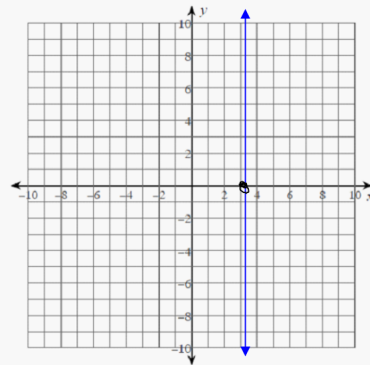
**Put behind**

# Example - Writing Linear Equations in

**3)** $m = \dfrac{1}{5}$ and $y$-intercept is $(0, -3)$.
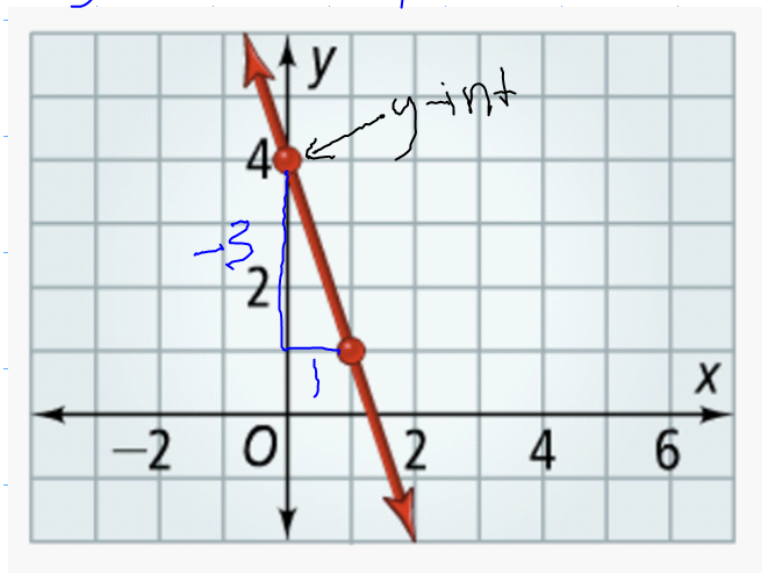
$$y = \dfrac{1}{5}x - 3$$
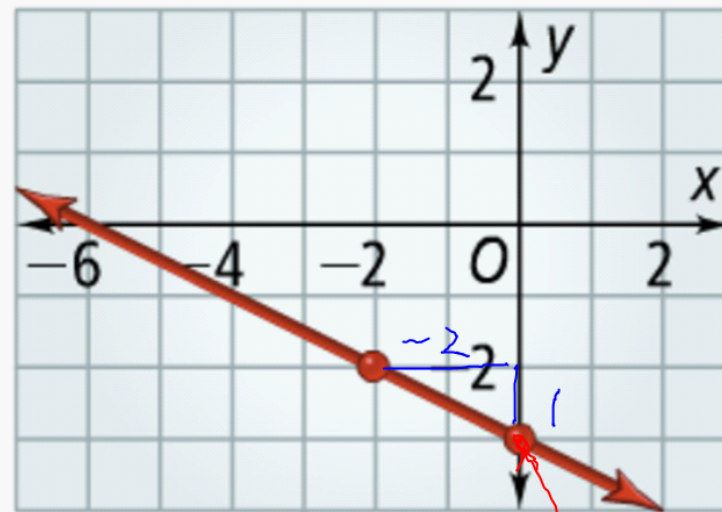
graph 1$^{st}$

# Example - Writing Linear Equations in

$y = -3x + 4$

$y = -\frac{1}{2}x - 3$

**4)**

y-int

4

$\frac{-3}{2}$

2

1

**5)**

$m = \frac{1}{-2}$

$-3 = b$

$-2$

1

# Example - Writing Linear Equations in

**6)** $5x - 4y = 16$

$-5x \qquad\qquad -5x$

$\dfrac{-4y}{-4} = \dfrac{-5x + 16}{-4}$

$y = \dfrac{5}{4}x - 4$

**7)** $4\left(-\dfrac{3}{4}x + \dfrac{1}{2}y\right) = (-1)4$
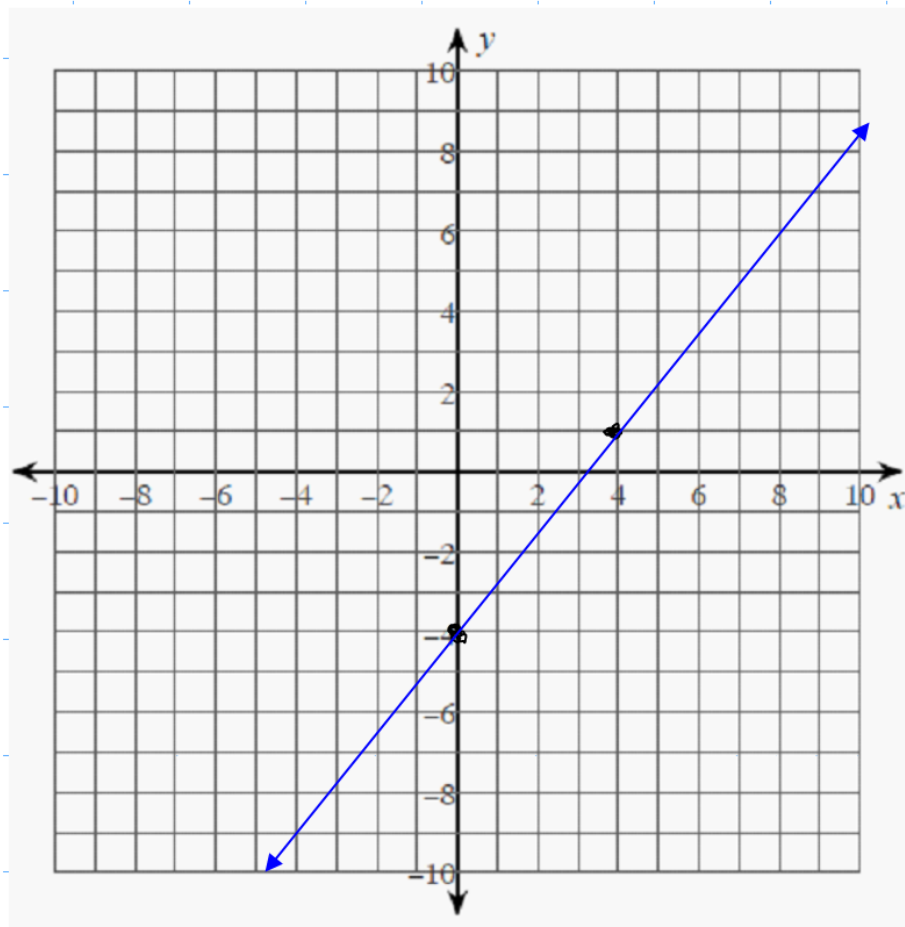
$-3x + 2y = -4$
$+3x \qquad\qquad +3x$

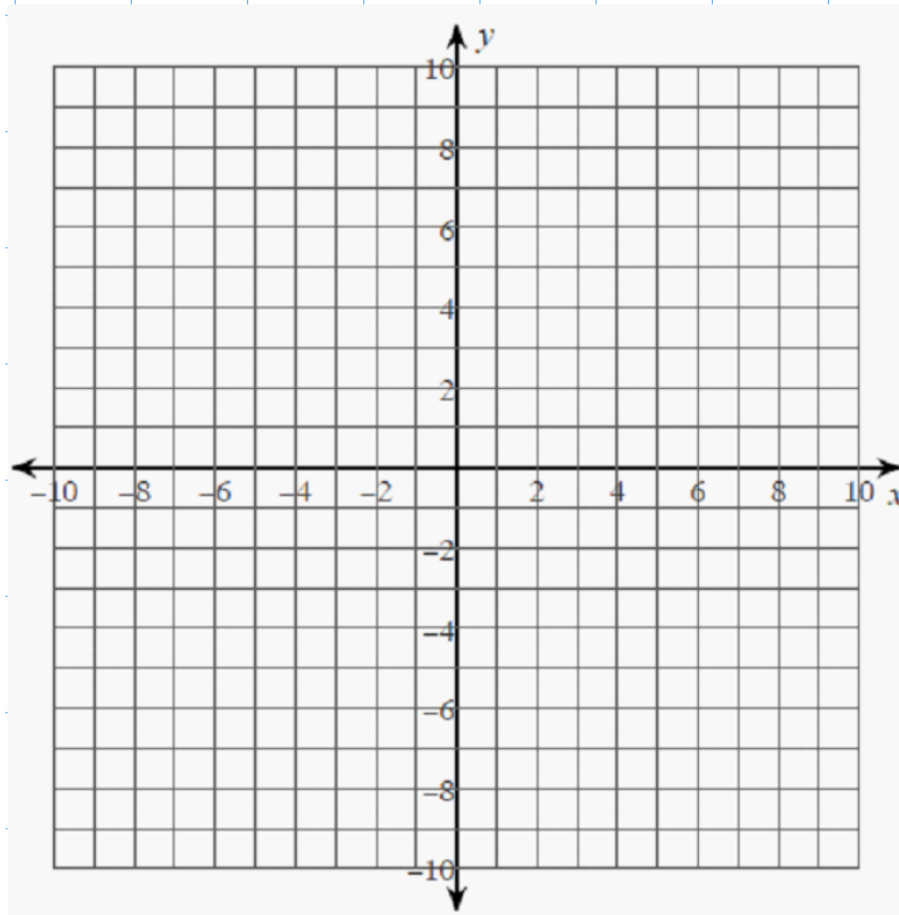$\dfrac{2y}{2} = \dfrac{3x - 4}{2}$

$y = \dfrac{3}{2}x - 2$
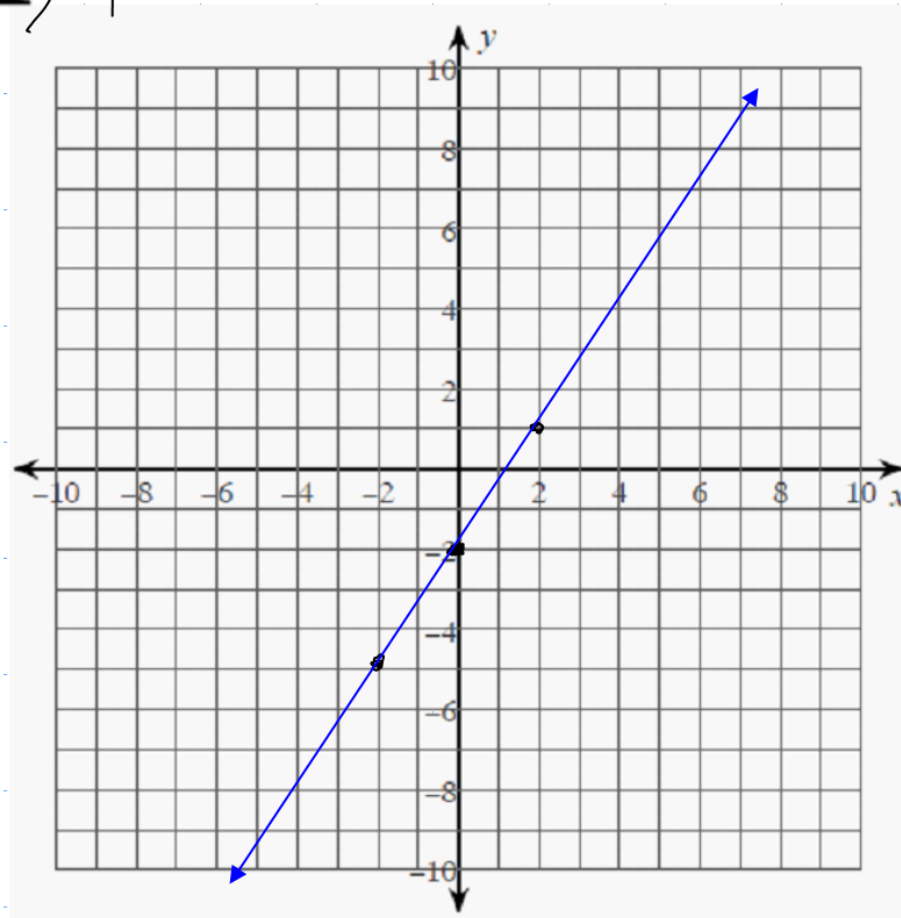
# Example - Writing Linear Equations

**8)** $\dfrac{5}{4}x - \dfrac{3}{2}y = 2$

# Example - Writing Linear

9) Through $(\overset{x}{2}, \overset{y}{1})$ parallel to $y = -2x + 7$

$$y = -2x + b$$

$$1 = 2(2) + b$$

$$1 = -4 + b$$

$$+4 \quad +4$$

$$b = 5$$

$$\boxed{y = -2x + 5}$$

# Example - Writing Linear

10) Through $(0,6)$ perpedicular to

$$5x - 2y = 8$$
$$-5x \qquad -5x$$

$$\frac{-2y}{-2} = \frac{-5x+8}{-2}$$

$$y = \frac{5}{2}x - 4$$

$$y = -\frac{2}{5}x + b$$

# Now what?

## Work on:

- **Handout 1.2 Linear Functions and Slope Intercept**

## Must be completed by:

- **Tuesday 8/28**

## If you finish early:

- **Create and graph your own linear equations.**
- **Create a real life example of a linear function.**

I can:
1) Identify the slope and y-intercept of an equation or graph.

2) Graph a line from slope-intercept a point

3) Write the equation of a line.