

## Today's Plan:

**Learning Target (standard):** I will graph lines using the slope-intercept method. I will write the equations for lines.

**Students will:** Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, take notes over new material and complete practice problems over new concepts.

**Teacher will:** Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of new concepts and assign students assessment problems over new concepts.

**Assessment:** Board work, homework check and homework assignment

**Differentiation:** Students will work at the board, go over and correct homework at their seats, actively engage in lecture over new concepts, practice new concepts with the aid of other students and the teacher and complete homework assignment.

Sign into your Google Classroom and complete the 5-question pre-assessment on equations for lines in Edulastic.

\* No need to turn anything in for this one \*

\* Have homework out so I can check it while you are working \*

\* When you are finished, please put your chromebook back up and be ready for your bell ringer \*



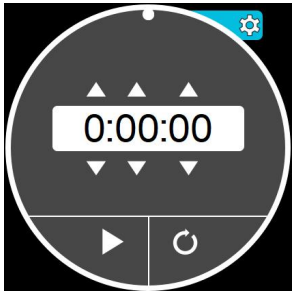
NAME \_\_\_\_\_ #41

**BELL RINGER**  $y = 3x - 7$

1.) Write an equation in slope-intercept form of the line with slope of 3 and point (2, -1).  $m = 3$   $-1 = 6 + b$   
 $-1 = 3(2) + b$   $b = -7$   
 $m \neq 0$

2.) Solve  $\frac{x}{16} = \frac{3}{4}$   $\frac{12}{16} = \frac{3}{4}$   
 $x = 12$

3.) Simplify the expression  $3(a - 2) + 8$ .  
 $3a - 6 + 8$   
 $3a + 2$



Graph using the slope-intercept method.

4)  $x + 5y = 10$   
 $-x$   $-x$   
 $\frac{5y}{5} = \frac{-x + 10}{5}$   
 $y = -\frac{1}{5}x + 2$

$m = -\frac{1}{5}$

$Iy: (0, 2)$

Graph using the slope-intercept method.

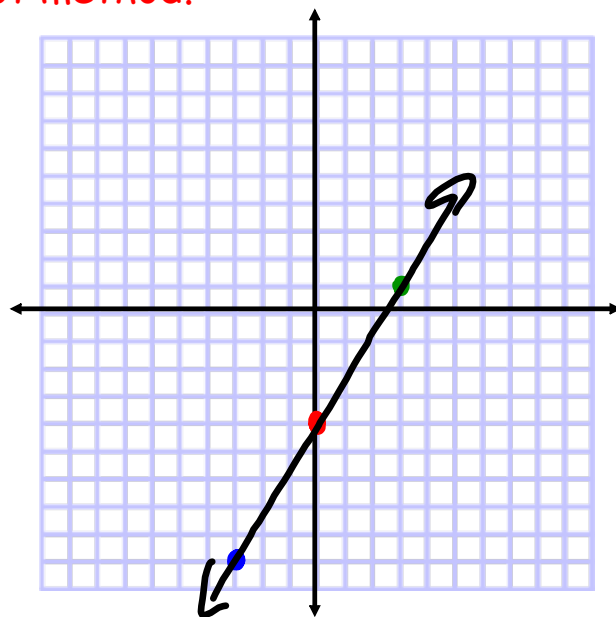
$$\begin{array}{r} -5x + 3y = -12 \\ +5x \quad +5x \end{array}$$

$$\frac{3y}{3} = \frac{5x}{3} - \frac{12}{3}$$

$$y = \frac{5}{3}x - 4$$

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

$$Iy: (0, -4)$$



Graph using the slope-intercept method.

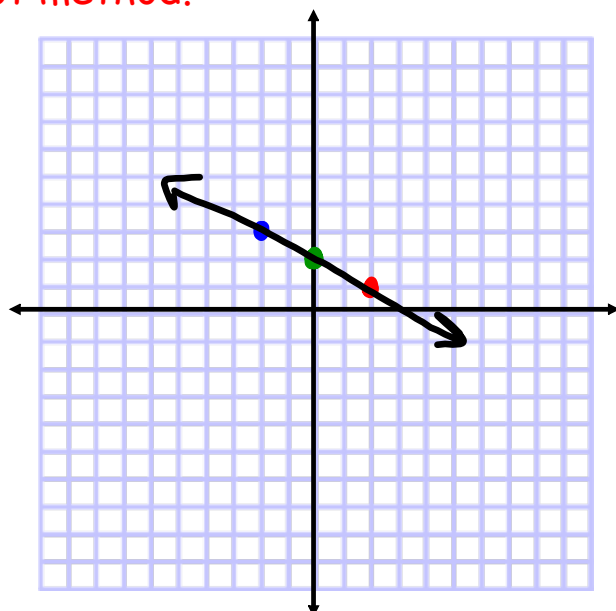
$$\begin{array}{r} -2x - 4y = -8 \\ +2x \quad +2x \end{array}$$

$$\frac{-4y}{-4} = \frac{2x}{-4} - \frac{8}{-4}$$

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

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

$$Iy: (0, 2)$$



Graph using the slope-intercept method.

$$-2x + 6 = 8$$

-6   -6

$$\frac{-2x}{-2} = \frac{2}{-2}$$

$$x = -1$$

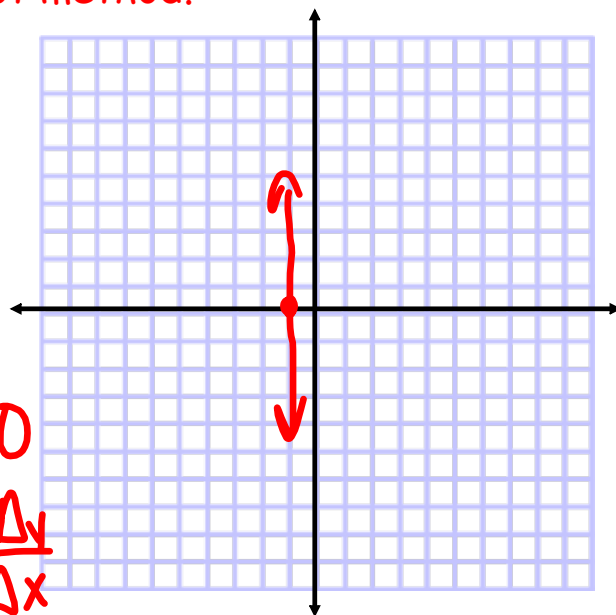
$$m = \text{und}$$

$$I_x: (-1, 0)$$

$$\Delta x = 0$$

$$m = \frac{\Delta y}{\Delta x}$$

$$m = \frac{\#}{0}$$



Graph using the slope-intercept method.

$$4x + 6y = 18$$

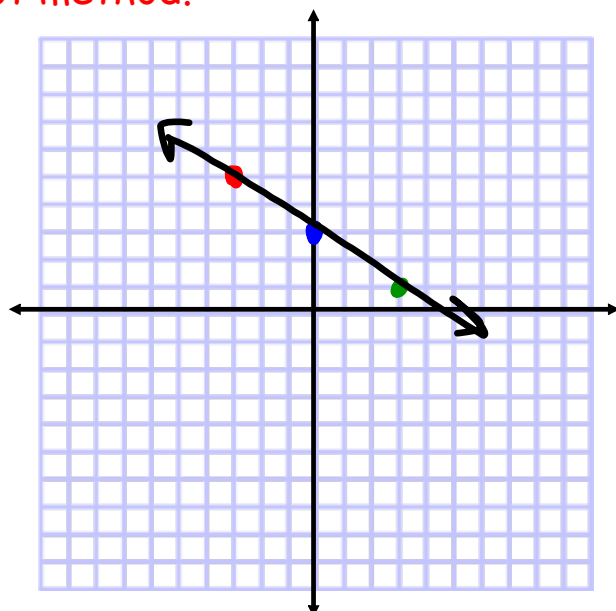
-4x       -4x

$$\frac{6y}{6} = \frac{-4x + 18}{6}$$

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

$$m = -\frac{2}{3}$$

$$I_y: (0, 3)$$



Graph using the slope-intercept method.

$$3y + 7 = 16$$

$$-7 \quad -7$$

$$3y = 9$$

$$\frac{3y}{3} = \frac{9}{3}$$

$$y = 3$$

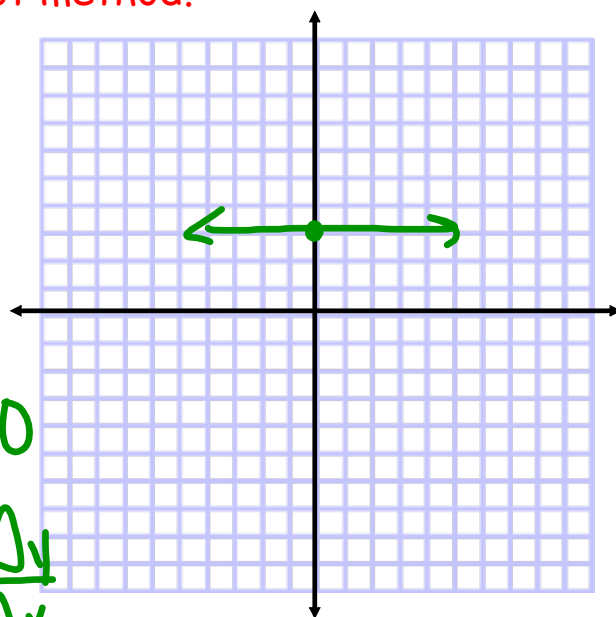
$$m = 0$$

$$I_y: (0, 3)$$

$$\Delta y = 0$$

$$m = \frac{\Delta y}{\Delta x}$$

$$m = \frac{0}{\#}$$



Writing the Equations for Lines:

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$y = mx + b$$

- 1) need the slope or two points to find the slope
- 2) pick a point and use the slope to plug into  $y = mx + b$

## 1) Slope-Intercept Form

$$y = mx + b$$

## 2) Standard Form

$$Ax + By = C$$

\* NO fractions \*

\* A must be positive \*

Find the equation for the line. Write in slope-intercept form and standard form.

passes through: (-3, -5)

$$m = -\frac{4}{3}$$

① slope-intercept

$$y = mx + b$$

$$-5 = -\frac{4}{3}(-3) + b$$

$$-5 = 4 + b$$

$$b = -9$$

$$y = -\frac{4}{3}x - 9$$

② standard

$$y = -\frac{4}{3}x - 9$$

$$+\frac{4}{3}x \quad +\frac{4}{3}x$$

$$3 \left[ \frac{4}{3}x + y = -9 \right]$$

$$4x + 3y = -27$$

Find the equation for the line. Write in slope-intercept form and standard form.

passes through: (5,3) & (10,5)

$$\textcircled{1} m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{5 - 3}{10 - 5}$$

$$m = \frac{2}{5}$$

$\textcircled{2}$  Slope-intercept

$$y = mx + b$$

$$3 = \frac{2}{5}(5) + b$$

$$3 = 2 + b$$

$$b = 1$$

$$y = \frac{2}{5}x + 1$$

$\textcircled{2}$  Standard

$$y = \frac{2}{5}x + 1$$

$$-\frac{2}{5}x \quad -\frac{2}{5}x$$

$$5 \left[ -\frac{2}{5}x + y = 1 \right]$$

$$2x - 5y = -5$$

Find the equation for the line. Write in slope-intercept form and standard form.

passes through: (-3,-1) & (6,-4)

$$\textcircled{1} m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-4 + 1}{6 + 3} = \frac{-3}{9}$$

$$m = -\frac{1}{3}$$

$\textcircled{2}$  Slope-intercept

$$y = mx + b$$

$$-1 = -\frac{1}{3}(-3) + b$$

$$-1 = 1 + b$$

$$b = -2$$

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

$\textcircled{2}$  Standard

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

$$+\frac{1}{3}x \quad +\frac{1}{3}x$$

$$3 \left[ \frac{1}{3}x + y = -2 \right]$$

$$x + 3y = -6$$

# Assignment:

## Equations for Lines

#1-12

\* Write the formula & Show ALL work \*

\* Write in slope-intercept AND standard form \*