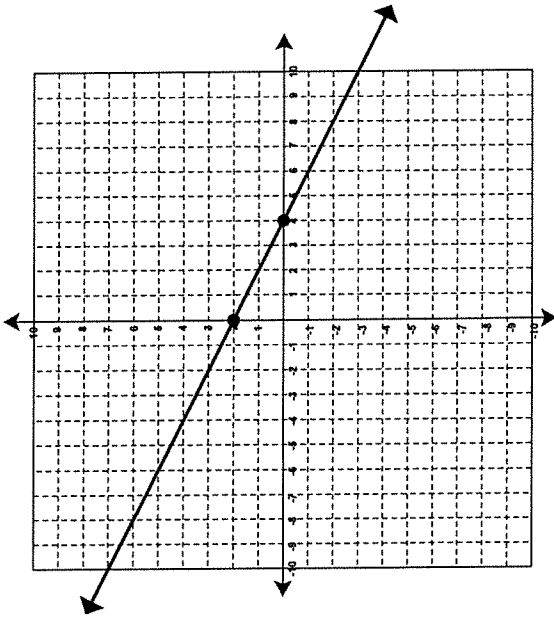


NAME: Key

FINDING THE X-INTERCEPT AND Y-INTERCEPT OF THE LINE PRACTICE #2

- 1.) Use the graph to find the x-intercept and y-intercept of the line.



x-intercept: (-2, 0) y-intercept: (0, 2)

- 2.) Find the x-intercept and the y-intercept of the graph of the equation: $3x - 4y = 24$

Step 1: To find the x-intercept of $3x - 4y = 24$, let $y =$ 0

$$3x - 4(0) = 24$$

$$\frac{3x}{3} = \frac{24}{3}$$

$$x = 8; (8, 0)$$

Step 2: To find the y-intercept of $3x - 4y = 24$, let $x =$ 0

$$3(0) - 4y = 24$$

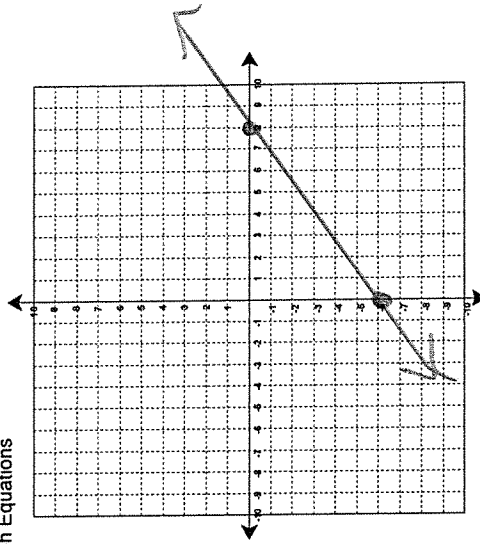
$$\frac{-4y}{-4} = \frac{24}{-4}$$

$$y = -6; (0, -6)$$

Step 3: Using the Intercepts to Graph Equations

x-intercept: (8, 0)

y-intercept: (0, -6)



3.) Find the x-intercept and the y-intercept of the graph of the equation: $-4x + 3y = 12$

Step 1: To find the x-intercept of $-4x + 3y = 12$, let $y = 0$

-ANW $-4x + 3(0) = 12$

$$\frac{-4x}{-4} = \frac{12}{-4}$$

$$x = -3; (-3, 0)$$

Step 2: To find the y-intercept of $-4x + 3y = 12$, let $x = 0$

$$-4(0) + \frac{3y}{3} = \frac{12}{3}$$

$$y = 4; (0, 4)$$

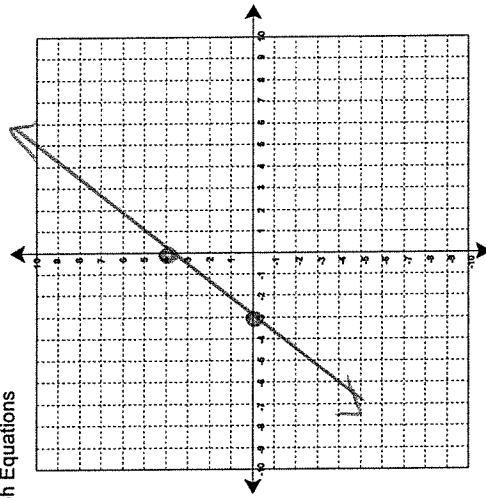
Step 3: Using the Intercepts to Graph Equations

x-intercept:

$$(-3, 0)$$

y-intercept:

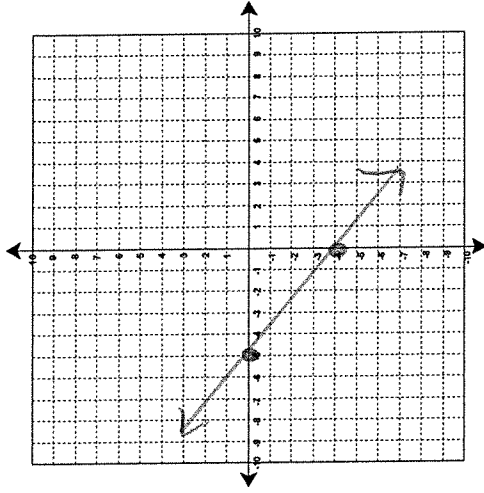
$$(0, 4)$$



4.) Graph the line that has the given intercepts:

x-intercept: -5

y-intercept: -4



WRITING AND GRAPHING EQUATIONS GIVEN TWO POINTS

PRACTICE #2

- 1.) Write an equation of the line in slope-intercept form that passes through the points $(-5, -2)$ and $(3, 6)$.

Step 1: Find the slope of the line.

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

Slope: $\frac{1}{2}$

Step 2: Find the y-intercept of the line by solving for b.

$$y = mx + b$$

$$y = 1x + b$$

y-intercept: $\frac{3}{2}$

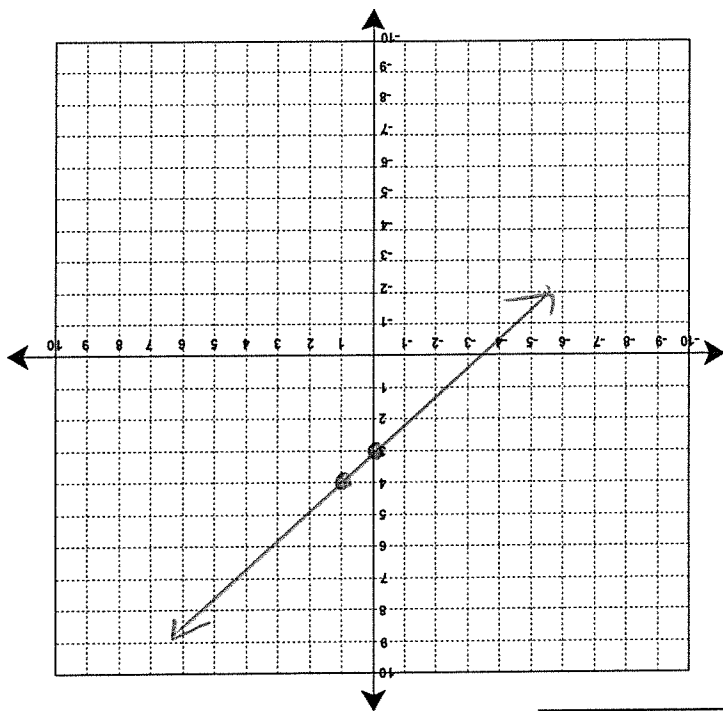
$$b = \frac{1(3)}{2} + b$$

Step 3: Write an equation of the line in slope-intercept form.

$$b = 3$$

Step 4: Graph the equation to check.

Equation of the line: $y = x + 3$



2.) Write an equation of the line in slope-intercept form that passes through the points $(-3, 5)$ and $(2, -10)$.

Step 1: Find the slope of the line.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-10 - 5}{2 - (-3)} = \frac{-15}{5} = -3$$

Slope: -3

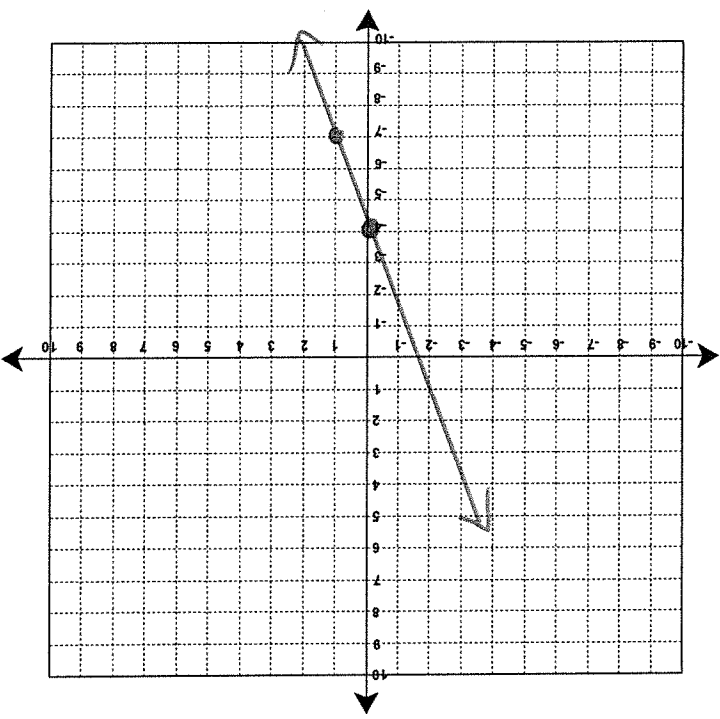
Step 2: Find the y-intercept of the line by solving for b.

$$\begin{aligned} y &= mx + b \\ y &= -3x + b \\ 5 &= -3(-3) + b \\ -9 &= -9 \end{aligned}$$

Step 3: Write an equation of the line in slope-intercept form.

Equation of the line: $y = -3x - 4$

Step 4: Graph the equation to check.



WRITING AN EQUATION OF A LINE GIVEN THE SLOPE AND A POINT

PRACTICE #2

- 1.) Write an equation of the line in slope-intercept form that passes through the point (1, 3) and has a slope of 4.

Step 1: Find the y-intercept by solving for b.

$$y = 4x + b$$

$$3 = 4(1) + b$$

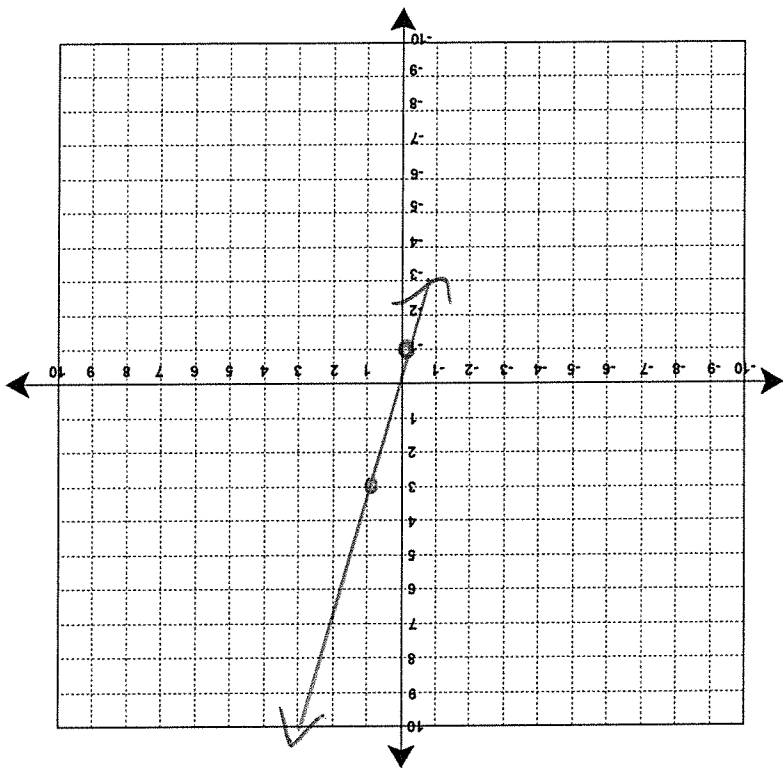
$$-4 - 4$$

$$b = -1$$

Step 2: Write the equation of the line that passes through the point (1, 3) and has a slope of 4.

Equation of the line: $y = 4x - 1$

Step 3: Graph the function. Does the function go through the point, (1, 3) and have a slope of 4?



2.) Write an equation of the line in slope-intercept form that passes through the point (2, 5) and has a slope of $\frac{1}{2}$.

Step 1: Find the y-intercept by solving for b.

$$y = mx + b$$

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

$$5 = 2\left(\frac{1}{2}\right) + b$$

$$5 = 1 + b$$

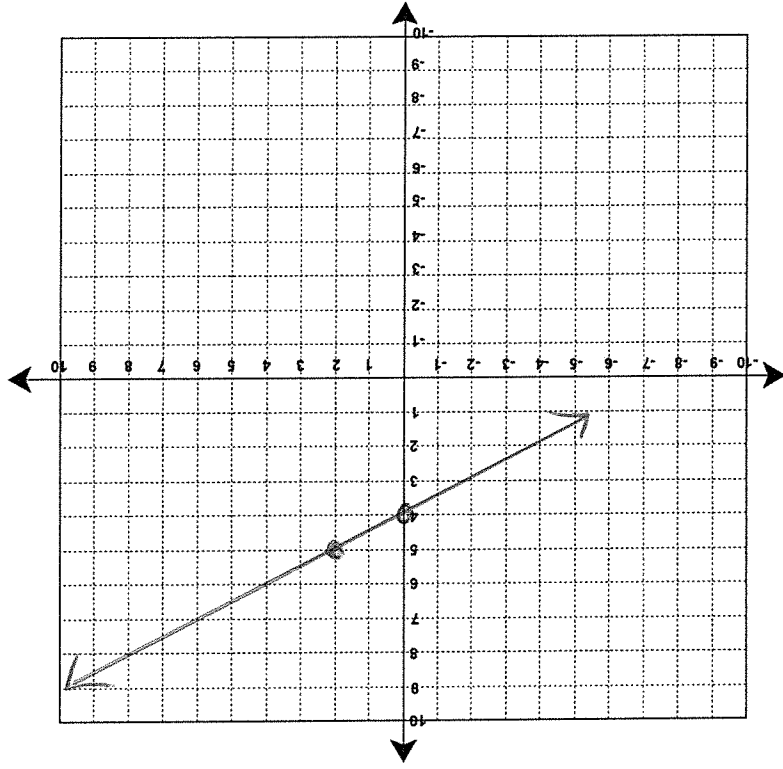
$$5 - 1 = b$$

y-intercept: $b = 4$

Step 2: Write the equation of the line in slope-intercept form that passes through the point (2, 5) and has a slope of $\frac{1}{2}$.

Equation of the line: $y = \frac{1}{2}x + 4$

Step 3: Graph the function. Does the function go through the point, (2, 5) and have a slope of $\frac{1}{2}$?



Rewrite the equations so that y is a function of x . Check them on the TI Nspire.

1.)

$$2x + y = 5$$

$$y = -2x + 5$$

2.)

$$13 = 12x - 2y$$

$$-12x + 13 = -2y$$

$$\frac{-12x + 13}{-2} = \frac{-2y}{-2}$$

$$6x + -\frac{13}{2} = y$$

3.)

$$1 + 7y = 5x - 2$$

$$7y = 5x - 3$$

$$y = \frac{5x - 3}{7}$$

4.)

$$6 + 8x = 4y - 2$$

$$10 + 8x = 4y$$

$$\frac{10 + 8x}{4} = \frac{4y}{4}$$

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

8.)

$$y = -20x - 12$$

$$4 \cdot \left(\frac{1}{4} y \right) = (-5x - 3) \cdot 4$$

$$\frac{1}{4} y + 3 = -5x - 3$$

7.)

$$y = -10x + 25$$

$$5 \cdot \left(\frac{1}{5} y \right) = (2x + 5) \cdot 5$$

$$\frac{5}{y} - 7 = -2x$$

6.)

$$y = -\frac{5}{2}x + \frac{7}{2}$$

$$\frac{2}{2} y \mid -\frac{5}{2}x + \frac{7}{2}$$

$$-5x \mid -5x$$

$$5x + 2y = 7$$

5.)

$$\frac{-3x + 24}{4} = \frac{4y}{4}$$

$$-3x \mid -3x$$

$$24 = 3x + 4y$$

$$-\frac{3}{4}x + 6 = y$$