Given two points, write an equation in slope-intercept form.

Example 1:

(0, 3) and (-4, -1)

x_1, y_1 x_2, y_2

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

Step 1: Find the slope.

$$\frac{-1-3}{-4-0} = \frac{-4}{-4} = 1$$

Step 2: Find the y-intercept by using the slope and either one of the points.

$y = mx + b$

$3 = 1(0) + b$

$3 = b$

Step 3: Write the equation by substituting the slope and the y-intercept into y = mx + b.

$y = 1x + 3$

Given two points, write an equation in slope-intercept form.

Example 2:

(-2, 2) and (-5, -4)

Step 1: Find the slope.

$$\frac{-4-2}{-5+2} \rightarrow \frac{-6}{-3} \rightarrow 2$$

Step 2: Find the y-intercept.

$2 = 2(-2) + b$

$+4 \quad -4 \quad +4 \quad +b$

$6 = b$

Step 3: Write the equation.

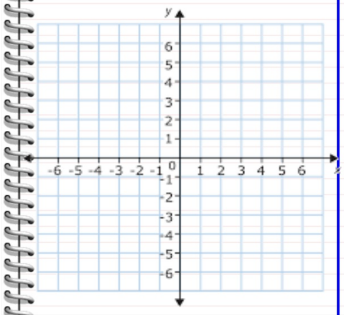
$y = 2x + 6$

Given two points, write an equation in slope-intercept form.

Example 3:

(1, -3) and (6, -3)

x_1, y_1 x_2, y_2



Step 1: Find the slope.

$$\frac{-3+3}{6-1} = \frac{0}{5} = 0$$

Step 2: Find the y-intercept.

$y = mx + b$

$-3 = 0(1) + b$

$-3 = b$

Step 3: Write the equation.

$y = 0x - 3$

$y = -3$

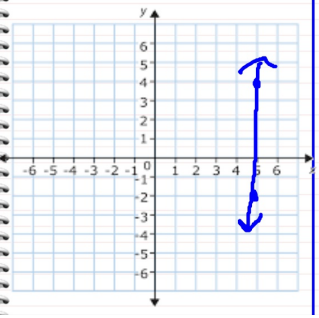
horizontal line

Given two points, write an equation in slope-intercept form.

Example 4:

(5, -2) and (5, 4)

x_1, y_1 x_2, y_2



Step 1: Find the slope.

$$\frac{4+2}{5-5} = \frac{6}{0}$$

undefined

vertical line

Step 2: Find the y-intercept.

NONE

Step 3: Write the equation.

$x = 5$