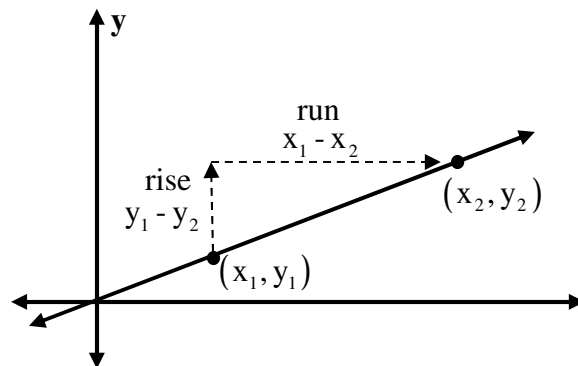


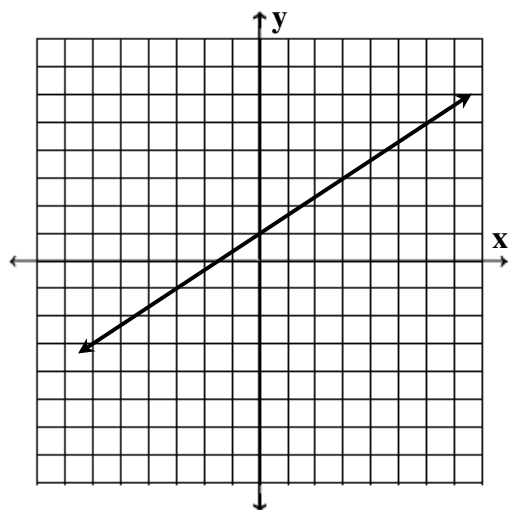
Section 3.3 – Finding the Slope of Lines and Constructing Linear Equations

Slope Formula: $m = \frac{y_1 - y_2}{x_1 - x_2} = \frac{\text{rise}}{\text{run}} = \frac{(\text{up } +) \text{ or } (\text{down } -)}{(\text{right } +) \text{ or } (\text{left } -)}$



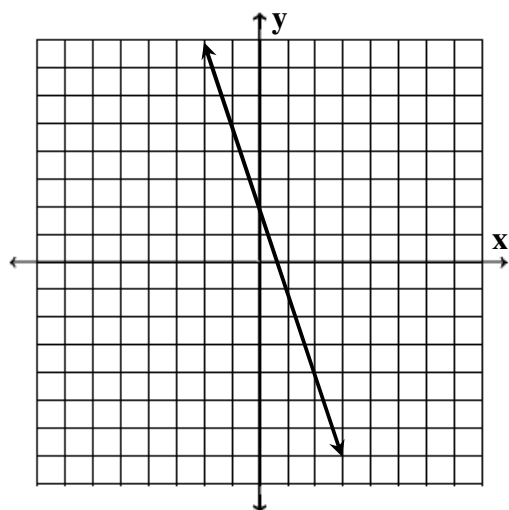
Ex 1:

- a) Find the slope of the line using the coordinate plane. b) Find the slope of the line using two points.



Ex 2:

- a) Find the slope of the line using the coordinate plane. b) Find the slope of the line using two points.



Important: Linear equations are most commonly written in slope-intercept form, _____.

When constructing a linear equation you need to find the slope, _____, and the y-intercept, _____.

Here are a couple examples of what the equation should look like.

Ex: $y = 2x + 3$ $y = -\frac{3}{4}x - 2$ $y = x + 1$ $y = \frac{1}{2}x$

Notice that there is a number in the place of m and b.

Strategy for Constructing a Linear Equation:

1. Given the slope, replace m with the given value in your equation.
2. Plug the x- and y-coordinates of your point into the equation to solve for the y-intercept, b.
3. Write the slope-intercept equation $y = mx + b$ and plug in the values for m and b.

Ex 3:

Write an equation of the line that passes through the given point and has the given slope.

a) $P(0, 2)$, slope = 5 **b)** $P(-3, 4)$, slope = $\frac{2}{3}$

c) $P(-3, 1)$, slope = -3 **d)** $P(-2, 4)$, slope = 0