


Algebra I

Lesson 5.6 –Slope-Intercept Form

Mrs. Snow, Instructor

Slope, rate of change, rise over run..... Where does this all take us?  No fear, it gives us a new and easier way to describe a linear function and to graph it! Given a slope and a point, we can graph a line. More specifically given a slope and the y-intercept, we can graph the line modeling the equation. AND!!! The equation of a line may be written in what is known as **SLOPE-INTERCEPT FORM**

Vocabulary

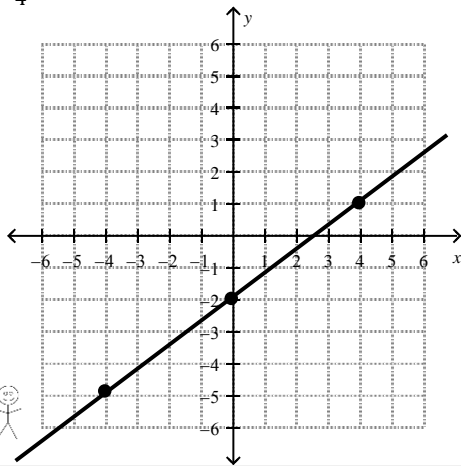
Slope-intercept form – the equation of a line that has the dependent variable written in terms of the independent variable (*solve the equation of a line for y*):

$$y = mx + b,$$

where **m** is the slope and **b** is the y – intercept, AKA your starting point.
or function notation: $f(x) = mx + b$

Graph using a slope and the y-intercept:

$$m = \frac{3}{4}, \quad y - \text{intercept} = -2$$



Process

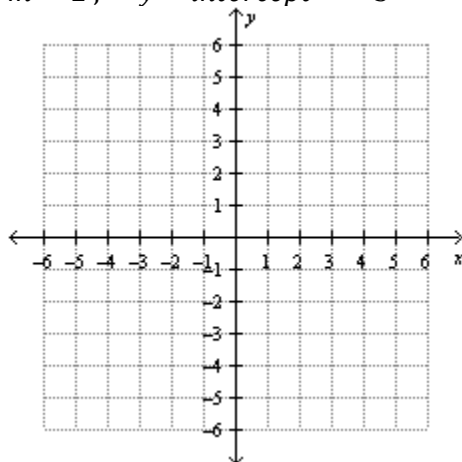
Given a y-intercept and a slope, you may consider the y-intercept as a starting point for graphing a line. Then using the slope, plot several more points to construct the linear model of the linear equation! Don't forget to let Mr. Stickman help you with the sign of the slope!



You Try:

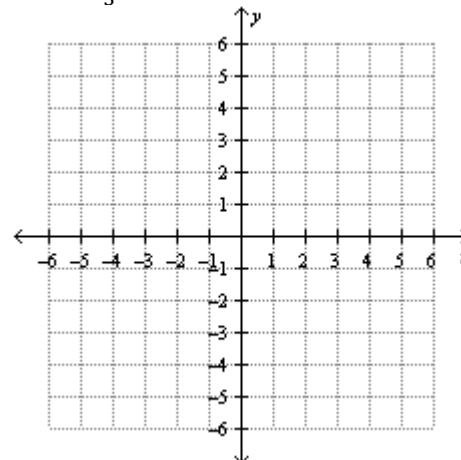
Graph using a slope and the y-intercept:

$$m = 2, \quad y - \text{intercept} = -3$$



Graph using a slope and the y-intercept:

$$m = -\frac{2}{3}, \quad y - \text{intercept} = 1$$



SLOPE INTERCEPT FORM OF A LINE, $y = mx + b$:

Given the equation of a line in Standard Form, solve for y (isolate y).

$$Ax + By = C$$

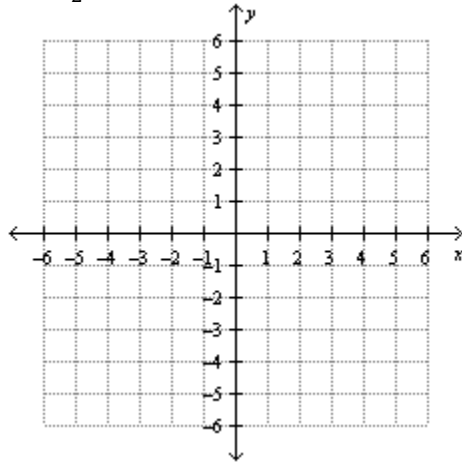
1. Get the “ y ” term alone by _____

2. Remove the coefficient **B** by multiplying the

If the line has a **slope – m** and the **y-intercept – b**. then the line is described by the **Slope Intercept Form: $y = mx + b$** . We just solved standard form equation for “ y ” The ratio you see as the coefficient of “ x ” is the slope, $m =$ _____ and the y-intercept, b , is the ratio $b =$ _____ .

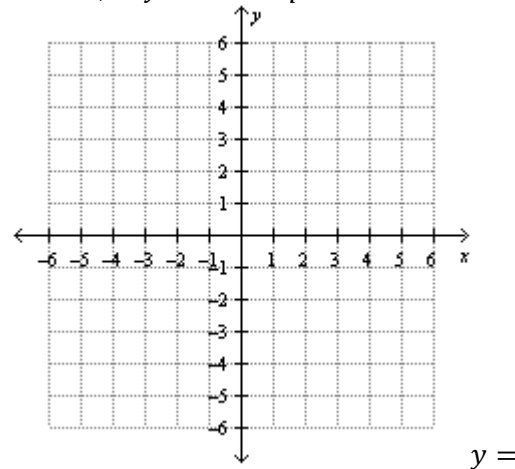
Write an equation of a line and graph using the slope and the y-intercept:

$$m = \frac{3}{2}, \quad y\text{-intercept} = 1$$



Write an equation of a line and graph using the slope and the y-intercept:

$$m = 4, \quad y\text{-intercept} = -6$$



Write an equation of a line using the slope and the y-intercept. Describe the line.

$$m = 0 \quad b = 4$$

Write an equation of a line using the slope and the y-intercept. Describe the line.

$$m = -2 \quad b = 0$$

Write the equation in slope intercept form by solving for y . State the slope and y-intercept:

$$3x + 2y = 8$$

Using the ratios from solving $Ax + By = C$, write the equation in slope intercept form. List the slope and y-intercept.

$$6x + 2y = 10$$