Slope-Intercept Form: Graphing Lines

An equation is in **slope-intercept form** if it is written like this:
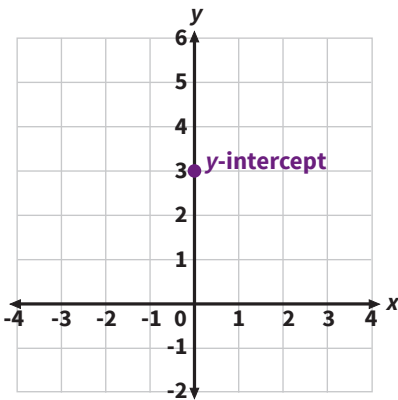
$$y = mx + b$$

slope y-intercept

If you have an equation in slope-intercept form, you can use the slope and y-intercept to graph the line.

Let's try an example! Graph $y = 2x + 3$.

First, plot the y-intercept. The y-intercept is **3**, so that's where the line will cross the y-axis. Place a point at (0, **3**).

Next, use the slope to plot more points on the line. Remember:

$$slope = \frac{rise}{run}$$

The slope is **2**, or $\frac{2}{1}$. So, the rise is 2 and the run is 1.

From the y-intercept, go up 2 and right 1 to plot another point on the line. You can also go in the opposite direction. From the y-intercept, go down 2 and left 1 to plot a third point on the line.
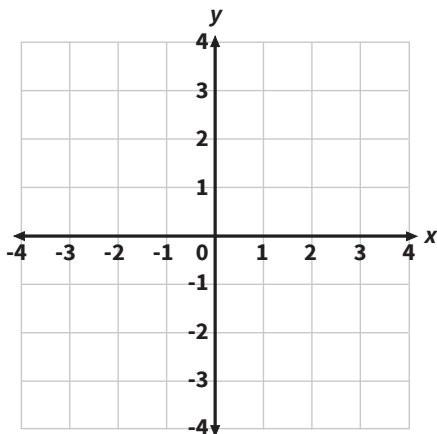
Once you have a few points, draw a straight line connecting them.
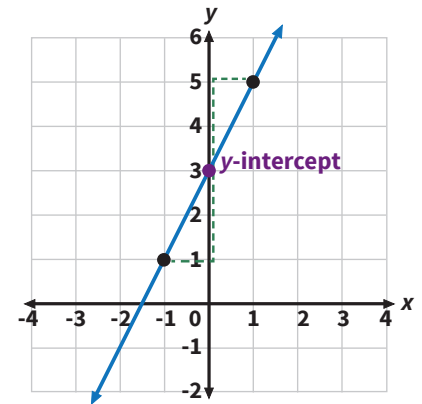
Try it yourself! **For each equation, write the slope and y-intercept. Then, graph the line.**
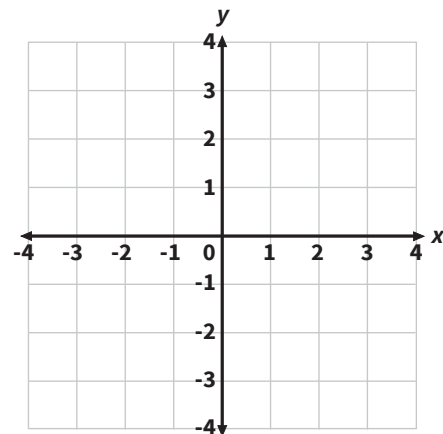
$y = 3x + 1$

slope = _____ y-intercept = _____

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

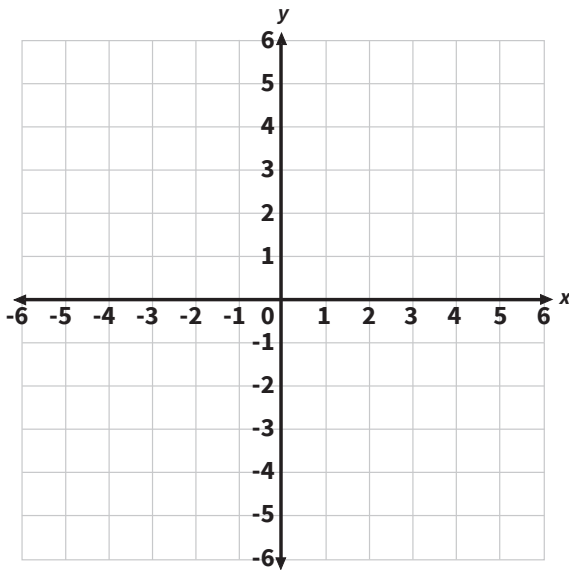slope = _____ y-intercept = _____

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Keep going! **For each equation, write the slope and *y*-intercept. Then, graph the line.**
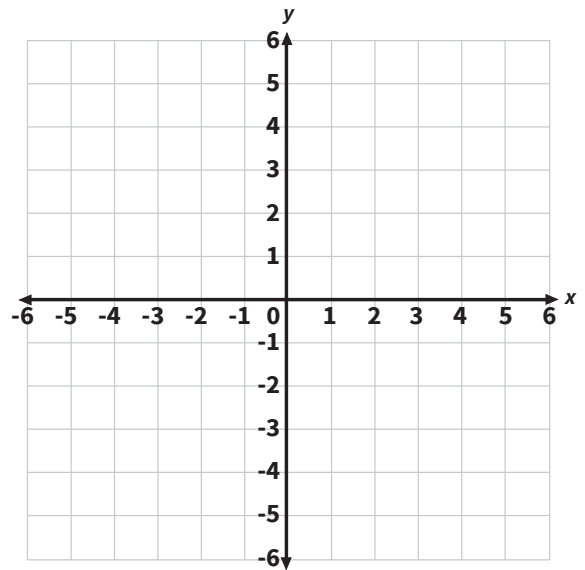
$y = -\dfrac{1}{3}x + 2$

slope = _____   *y*-intercept = _____
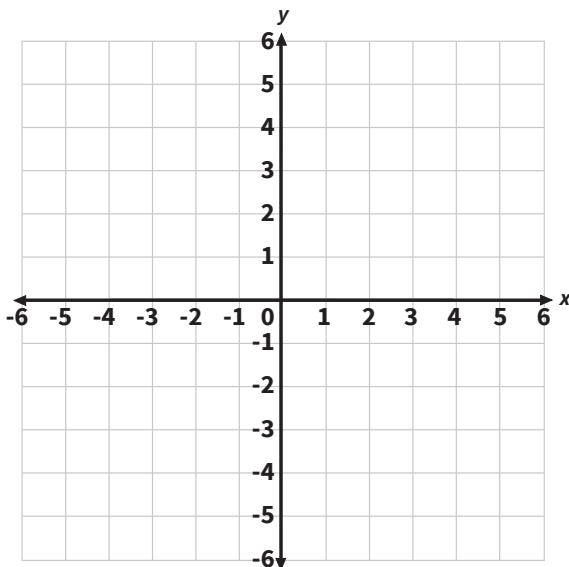

$y = \dfrac{3}{4}x - 2$

slope = _____   *y*-intercept = _____

$y = 4x - 1$

slope = _____   *y*-intercept = _____

$y = -\dfrac{3}{2}x - 3$

slope = _____   *y*-intercept = _____