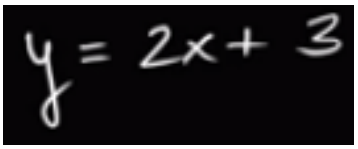
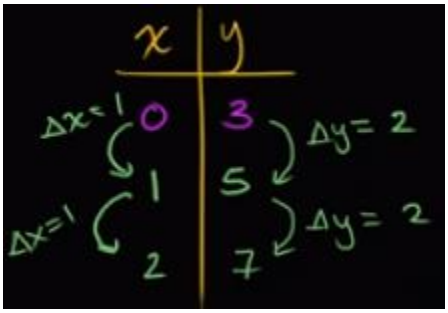
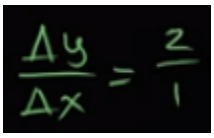
The Slope-Intercept Form:

Let's graph this form:

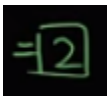


…it appears that for every change by 1 unit in X, the change in Y is by 2 units:

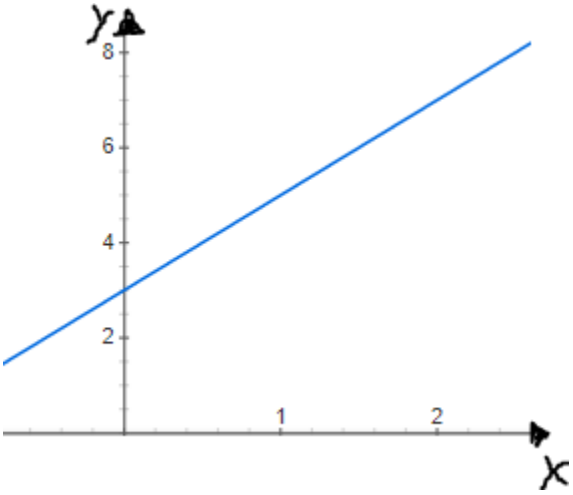




…or simply put, our slope is 2:



The graph looks like this:



Likewise, if the change in X was negative 1, the change in Y would be negative 2.

What is slope-intercept form?

Slope-intercept is a specific form of linear equations. It has the following general structure. Drum roll ...

$$y = mx + b$$

Here, m and b can be any two real numbers. For example, these are linear equations in slope-intercept form:

- $y = 2x + 1$
- $y = -3x + 2.7$
- $y = 10 - 100x$ *[But this equation has x in the last term!]*

On the other hand, these linear equations are *not* in slope-intercept form:

- $2x + 3y = 5$
- $y - 3 = 2(x - 1)$
- $x = 4y - 7$

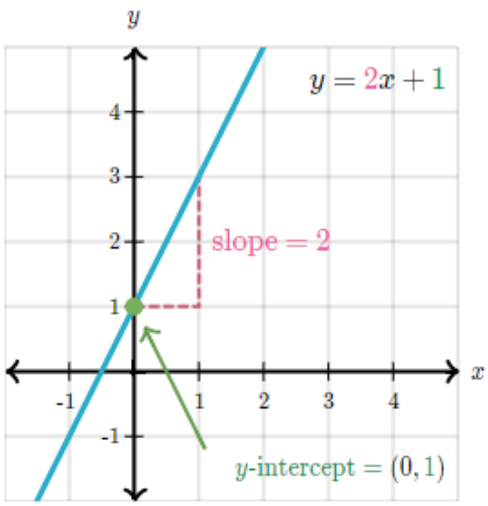
Slope-intercept is the most prominent form of linear equations. Let's dig deeper to learn why this is so.

The coefficients in slope-intercept form

Besides being neat and simplified, slope-intercept form's advantage is that it gives two main features of the line it represents:

- The slope is m.
- The y-coordinate of the y-intercept is b. In other words, the line's y-intercept is at $(0, b)$.

For example, the line $y = 2x + 1$ has a slope of 2 and a y-intercept at $(0, 1)$:



The fact that this form gives the slope and the y-intercept is the reason why it is called *slope-intercept* in the first place!