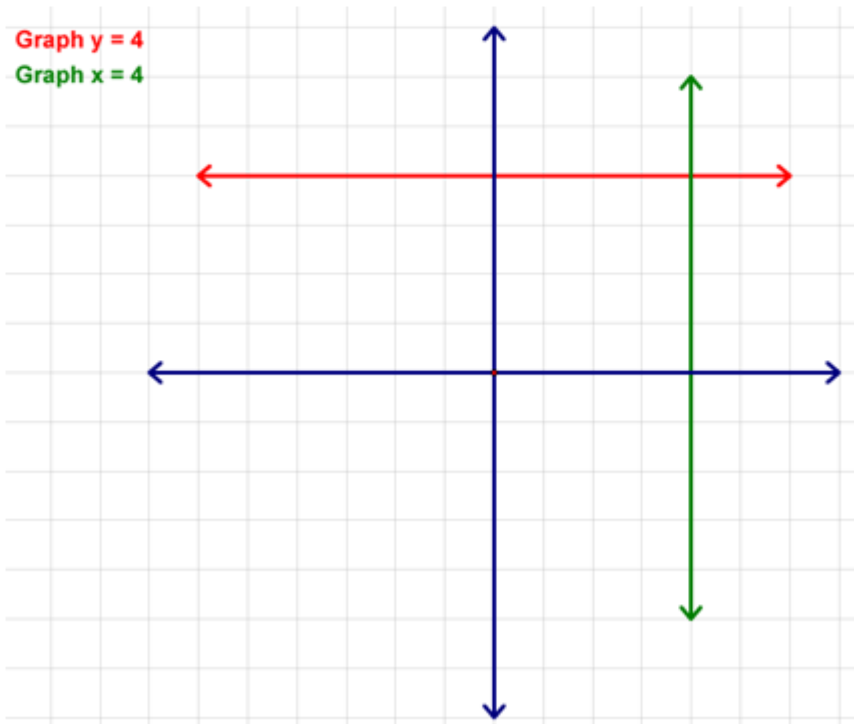
Equations of Lines - Lesson 13-2

We next recalled how to graph horizontal and vertical lines:



Which is summarized as follows:

Theorem 119

The formula for an equation of a horizontal line is

$$y = b$$

where *b* is the *y*-coordinate of every point on the line.

Theorem 120

The formula for an equation of a vertical line is

$$x = a$$

where *a* is the *x*-coordinate of every point on the line.

We also learned today how to determine the equation of a line in y = mx + b format. This is a two-step process:

1. Determine the slope (m). This is often accomplished by finding the slope of a line that we know to be parallel or perpendicular to the line we're trying to define. It can also be done by using the slope formula if we know the coordinates of two points on the line.
2. Determine the y-intercept. This is accomplished by plugging the coordinates of a point we know is on the line into the equation y = mx + b (remember that we already know m) and solving for b.

So, for example...we might do the following: