

MTH 163-164-166

Northern Virginia Community College

Extended Learning Institute

Mini-Lectures

Graphing Lines in Scientific Notebook

In our textbook we learned how to graph a line by finding its x-intercept and y-intercept and drawing a line between them.

Scientific Notebook provides us with another tool, but we have to do a little algebra.

Let's graph the line given by the equation $5x - 6y = 30$, Solution is : $\{y = \frac{5}{6}x - 5\}$

1. Solve the equation for y.
 - a. Place the cursor immediately to the right of the equation.
 - b. On the menu bar, select Maple-Solve-Exact.
 - c. A dialog box opens, asking what variable to solve for.
 - d. Enter y and OK
 - e. The solution appears after the equation.
 - f. $5x - 6y = 30$, Solution is : $\{y = \frac{5}{6}x - 5\}$
2. Plot the line .
 - a. Copy the expression in x, by highlighting it, holding the Ctrl key, and dragging it to a blank part of the page.
 - b. Move the cursor immediately to the right of the expression
 - c. Press the Plot 2D Rectangular button on the Compute toolbar.
3. Adjust the view.
 - a. If the intercepts are not visible, or if you wish to make other adjustments to the graph, put the cursor anywhere in the graph, and click once.
 - b. A blue box will appear in the lower right corner.
 - c. Click on this box to open the Plot Properties dialog box.
 - d. Change the domain interval and click OK.
 - e. The graph will be plotted with the new x-values.

$$\frac{5}{6}x - 5$$

In the above graph, the domain is from $x = -5$ to $x = +5$.

As you can see, the x-axis shown is for a negative y value. The positive half of the y-axis is out of our viewing window.

I will copy the graph below. Then, following the above instructions, I will change the domain to $x = -10$ to $x = +10$. See the difference. Just for fun, I changed the line style to thick and blue.