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 : $\left\{y = \frac{5}{6}x - 5\right\}$

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 : $\left\{y = \frac{5}{6}x - 5\right\}$
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.