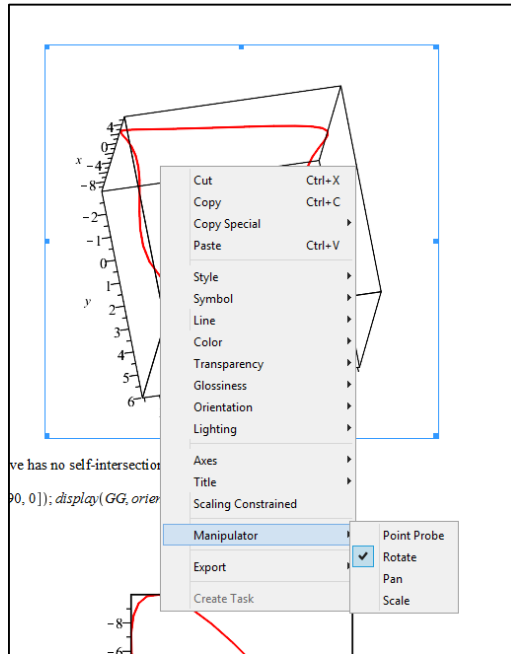


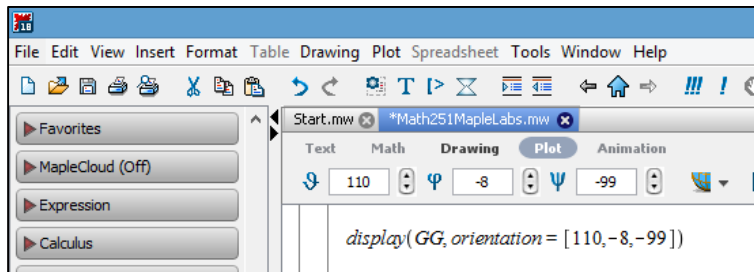
# Maple Lab 1 – Tips

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1. Orientation on Graphs: It can be tricky to make your graphs look good, especially if you need multiple of them to show up in a row. Once you display a graph, you can rotate it to make it look better. After you have Maple display a 3d graph, you can right-click on it, bringing up this menu:



If you go into the Manipulator menu and select Rotate, as is done above, you will then be able to click and drag on the graph to change the orientation of it, until you find one that displays all of the necessary features. Once you do that, you may want to hard code that into Maple, so that re-executing the file will keep the graph the way you want it. To do that, after selecting the graph (left-click), look at the top of the screen.



Up here, you can see values of Theta, Phi, and Psi, which determine the orientation of the graph (These are called Euler angles). However, the important part of this is that you can

put these numbers in Maple so that the graph always looks that way. If you look at the line of code right below the angles, you'll see how I've done that. You can mimic that in your work to make sure your graphs always look right.

2. Matrices: For this assignment, you need to draw a Triangle, using a `polyplot3d` command. One of the easier ways to do this, in my opinion, is using matrices. `Polygonplot3d` can take many different kinds of inputs, but matrices makes the most sense to me. In this format, you put the coordinates of the points you want at the vertices of the triangle (polygon) into a matrix, and it draws the picture. There are two different ways to put the vectors into a matrix. The two different separators in Maple are the comma (,) and the vertical bar ( | above enter). One separates rows, and the other columns (I'll let you figure out which). The two different ways to put them into a matrix is:
  - a. Write the individual vectors with commas (`a := <a1, a2, a3>`), and put them into a matrix using vertical bars, i.e. `M := <a | b | c >`.
  - b. Write the vectors with vertical bars (`a := <a1 | a2 | a3>`), and use commas to put them into a matrix.

One of these will give you the correct answer immediately, and the other will not. To convert between the two, you need the transpose operation, which is performed with a superscript '+', namely (`M' := <a,b,c>'`).

Play around with these two to see which one works, and which one you want to use. Or, use a completely different method of drawing the triangle. As long as the triangle shows up, you're good.