Math 290
Week 10 Lab

Instructions: Use LaTeX to typeset a document containing each component described below. Turn in your lab by emailing it to jamesju@mnstate.edu.
You should email both your raw TeX (.tex) file and your compiled document (in .ps *or* .pdf form). This assignment is due by 4:00pm next Monday. You will be graded on both your raw TeX code and the accuracy of your compiled document.

1. Make sure to load the "pst-func", "pst-3dplot", and "graphicx" packages to the preamble or your document. [Note: These packages will only compile properly in MiKTeX 2.9, so make sure that you have upgraded to this version.]

2. Use the "psplot" command (along with related commands) to produce a nice graph of the function $f(x) = \frac{1}{5}x^5 - \frac{17}{5}x^3 + \frac{16}{5}x + 1$. Make sure to show all of the important features of this graph (intercepts, turning points, etc.), clip your graph, and place it on axes with a reasonable scale.

3. Make **your own** drawing using a combination of "pscircle", "psellipse", "parabola", "psline" along with color and arrow options.

4. Make at least one drawing of your own design using postscript 3D graphics commands.

5. Make at least one 2D parametric plot and at least one 3D parametric plot (your calculus textbook should have some interesting examples you can use).

6. Pick your favorite function (other than $y = \sqrt{x}$ or any scalar multiple of this function) and make a diagram that represents finding the volume of the related solid of revolution using the washer method (feel free to refer to your calc textbook or old calc labs).

7. For EXTRA CREDIT, use the related links to look up a feature that we did not go over in class and make a diagram that makes use of that feature. You can earn up to 3 extra credit points, depending on the complexity of the feature(s) you add and on how cool your diagram turns out.