Due Friday, February 23 (no extensions)

Problem #1 (10 points)

Use MATLAB to graph $y = \dfrac{1}{x^2 + 1}$, $y = -\dfrac{1}{x^2 + 1}$, and $y = \dfrac{\sin(x)}{x^2 + 1}$ on the same set of axes for $-3\pi \le x \le 3\pi$.

Please use the following formatting instructions.

- Draw the graph of $y = \dfrac{\sin(x)}{x^2 + 1}$ using a solid blue line and draw the graphs of $y = \dfrac{1}{x^2 + 1}$ and $y = -\dfrac{1}{x^2 + 1}$ using dashed red lines.

- Create a title containing your name.

- Create a legend to indicate which curve is which. **The only variables in the problem are x and y. Don't use other letters in your legend.** (You will have to use other variable names in your MATLAB code, but your legend should only use the variables x and y.)

- Be sure to label your axes. **The only variables in the problem are x and y. Don't use other letters in your axis labels.**

- Use enough points so your graphs look like smooth curves.

Please give me both your graph and your MATLAB code. You can cut and paste both your graph and your MATLAB code into a Word document.

Please email your results to me at `stephen_pennell@uml.edu` as an attachment.