Quiz #5   Name: Due June 8th @ 10:15 a.m.

You may only use your textbook, your notes, and your calculator on these problems. You may not use any outside resources, including tutors or solution manuals. Remember that the purpose of these quizzes is to see if you understand what you have learned on your homework, and also to tell you what you still need to study for the upcoming exam.

1. (2 points) Graph the equation $f(x) = x^3 - 2x + 4$. Include all work, the coordinates of any local and absolute extrema, and the inflection points.

2. (2 points) Does the function below satisfy the hypotheses of the MVT on the given interval? Give a reason for your answer. $f(x) = \begin{cases} \frac{\sin x}{x}, & -\pi \leq x < 0 \\ 0, & x = 0 \end{cases}$

3. (2 points) Graph the equation $f(x) = \frac{e^x}{x}$. Include all work, the coordinates of any local and absolute extrema, and inflections points.

4. (2 points) List all the indeterment forms that use L'Hóptal's Rule and explain the process of how the rule is used. Provide an example of each type.

5. (2 points) Find the limit: $\lim_{0^+} x \ln(x)$