Math 1271 - Lecture 050 **Name (Print):** _____
Spring 2018
Quiz VII
3/22/18
Time Limit: 20 Minutes Section _____

You may *not* use your books, notes, graphing calculator, phones or any other internet devices on this exam. Please show all work clearly and legibly.

1. (8 points) A shoebox (with no lid) is to have a rectangular base with length double its width and an open top. You have 450 in^2 of cardboard from which to make the box. What dimensions maximize its volume?

Problem	Points	Score
1	8	
2	12	
Total:	20	

2. Let $f(x) = x^3 + x^2 - 2x - 2$

   (a) (6 points) Determine the intervals of concavity and inflection points for f.

   (b) (6 points) Use Newton's method to estimate a **critical point** of f to five decimal places with starting point $x_1 = 1/2$.
   (Hint: stop and read this question again before you start working on your answer).