Matlab Group Assignment #2

Section #:_____

Names: UINs:

_____ _____

_____ _____

_____ _____

_____ _____

From lab, you should have learned Newton's Method: to find an approximate solution to the equation $f(x) = 0$, choose a starting guess x_1 and generate subsequent guesses using the formula

$$x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}$$

For this assignment, your team will create a program which will implement this procedure until the estimated solutions are within .001 of each other. The general strategy is as follows:

1. Create function files for f and f'
2. Plot f in an appropriate window to get x_1, your starting guess
3. Apply Newton's Method until your answers are within .001 of each other (i.e., $|x_{n+1} - x_n| < .001$. NOTE: another way of saying this is to apply Newton's Method **while** $|x_{n+1} - x_n| > .001$)

You will be given an equation to solve in lab **22-23 October** and you will run your program for your TA to verify that it works. You will also publish your program's execution and turn that in for your TA to check. To test your program, try it on one of the odd-numbered problems in Section 3.12 of the Stewart text (pp232-233) and check your answer with the back of the book.

NOTE: You are not to use ANY functions which automatically solve equations (using Newton's Method or otherwise). Newton's Method (i.e., the formula above) must be clearly seen in your program.