Math 450 - Numerical Analysis Group Assignment # 5 Due: Wednesday, September 26th

Name:_

Instructions: Work together in pairs on the following problem.

- 1. Let $f(x) = x^4 4x^2 + 4$
 - (a) Prove that f(x) has a root on the interval [1, 2].

(b) Use Newton's Method to find a root of f(x) in [1, 2] to within 10^{-4} .

(c) Use Modified Newton's Method to find a root of f(x) in [1,2] to within 10^{-4} .

(d) Comment on the relative efficiency of these two methods based on these examples.