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**Math-5630/6630**  
Introduction to Numerical Analysis I  
Summer 2007  
Homework 3

**Problems**

1. Do problem 1 on p. 283 of your textbook.
2. For the programs below use a tolerance of  $10^{-4}$ . Explain what this actually means (write an inequality showing what quantity is less than  $10^{-4}$ ).

**Program**

1. Program the Chord method, Secant method, and Newton's method.
  - a. Use your program to find the root of  $f(x) = x^3 - x - 1$  in the interval  $[1, 2]$ .
  - b. Use your program to find the roots of  $f(x) = (2x^2 - 3x - 2)/(x - 1)$  (there are two roots in  $[-4, 4]$ ).
  - c. Compare the results to those you previously obtained by using the Bisection method.

\* Math 6630.