Assessment #3

Math 370 — Numerical Analysis

Assigned: Fri Jan 31 — **Due: Fri Feb 07**

Do the following homework questions found in the text book (*Numerical Analysis*, Burden & Faires (5th Edition), 1993). Odd-numbered problems have solutions in the back of the text.

1 Page 54, #1

2 Page 54, #3

3 Page 66, #5

4 Page 67, #17

5 Page 67, #18

6 Use $x_0 = 1$ as your initial guess to solve the equation $x^3 - 5x = 0$ using Newton's Method. What happens? Why? What's the best method to solve this equation?

7 Find the solution of $\log(x-1) + \cos(x-1) = 0$ to within 10^{-5} of the exact solution using

(a) Newton's Method
(b) Bisection
(c) False Position
(d) Secant

Which method converges the fastest? Consider the solution bracket is [1.2,2]

Journal

Write down a paragraph on any subject related to the class that you want to. Topics this week could include your feedback on group work and using the computer. As always you can comment on any other feature of the class that you like (or dislike).

Online Participation

On to a new topic of discussion!:

"Of all the methods you know of to solve the equation $f(x) = 0$, which is the *best*, or in other words, which one would you use the most often if given the choice?"

Give reasons for your choice.

To participate, send electronic mail to `370@abacus.oxy.edu`

Remember: Online participation is part of your grade!