Assessment #7

Math 370 — Numerical Analysis

Assigned: Wed Apr 02 — **Due: Wed Apr 09**

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 Obtain approximations to $\int_1^{1.5} x^2 \ln(x)\, dx$ using

- **(a)** Trapezoid Method
- **(b)** Midpoint Method
- **(c)** Simpson's Method
- **(d)** For each method find the actual error and compare it to the theoretical error bound for that method.

2 page 183, #10

3 page 190, #7

4 page 190, #14

5 page 190, #15

6 page 190, #16

Journal

Write down a paragraph on any subject related to the class that you want to. I would specifically like to read a progress report on your group project. How is your group dividing the workload involved? How often do you meet? How are decision made? Give me feedback on you feel about producing a group project. As always you can comment on any other feature of the class that you like (or dislike).

Online Participation

To emphasize the usefulness of learning numerical quadrature rules to evaluate integrals this week I want **each** of you to email the list an example of an integral which you have had to evaluate numerically in some other context than numerical analysis. You may have had to evaluate this integral in another class or on the job or just seen it in a book somewhere. It has to be an integral which can NOT be computed analytically. But I want you to let us know exactly what the application was, and also it would be nice to tell us the value of the integral also.

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