ENEE 241/MATH 242 Dr. Wolfe ASSIGNMENT #8 Due April 25, 2001

Readings: *Chapra & Canale* Sections 21.1,21.2.

1. Problem 21.1, p.607, *Chapra & Canale*.

   Use your calculators to do problems 2-5.

2. Problem 21.2, p.607, *Chapra & Canale*.

3. Problem 21.3, p.607, *Chapra & Canale*.

4. Problem 21.4, p.607, *Chapra & Canale*.

5. Problem 21.5, p.607, *Chapra & Canale*.

6. Write MATLAB function scripts TRAP(f, a, b, n) and SIMP(f, a, b, n) which will approximate $I = \int_a^b f(x)\,dx$ using the trapezoid rule and Simpson's rule with n subdivisions. In these scripts f is a string that names an available function. To make this work you will need the command FEVAL.

7. Redo problems 2-5 above using your scripts TRAP and SIMP.

8. Use TRAP and SIMP with $n = 8, 16, 32, 64, 128, 256$ on the integral in Problem 1(a). In each case compute the error. What do you observe ?