AMSC/CMSC 460   Quiz 3   ,   Fall 2007

Show all work. You may leave arithmetic expressions in any form that a calculator could evaluate. By putting your name on this paper, you agree to abide by the university's code of academic integrity in completing the quiz. Use no books, calculators, cellphones, communication with others, scratchpaper, etc.

Name _____

1. (10) Use Simpson's rule to compute an approximation to

$$\int_0^1 e^t dt.$$

(If you can't remember Simpson, composite Trapezoid with 3 panels ($h = 1/3$) is worth 7 points.)

2. (10) Let

$$I(f) = \int_0^1 f(t)dt.$$

Suppose we approximate I by a Gauss-Lobatto rule of the form

$$Q(f) = \omega_1 f(0) + \omega_2 f(t_1) + \omega_3 f(t_2) + \omega_4 f(1).$$

Write down conditions to make this rule exact for polynomials of degree 5 or less.