ESO 208A; ESO 218

Computational methods in engineering

Assignment # 4

Due date: October 3, 2013

1: Derive an expression for the local truncation error associated with the trapezoidal rule to numerically integrate a function.

2. Evaluate the integral $\int_{1}^{2}\left(1-x-4x^{3}+2x^{5}\right)dx$ by using

a. analytical method;

b. trapezoidal rule with n = 1, 3 and 5;

c. Simpson's 1/3 rule.

d. Do the error analysis for b and c, above.