

ENGR 326
Gaussian Quadrature Lab Assignment

Use 2-pt, 3-pt, and 4-pt Gaussian quadrature and Newton Cotes integration (for $n=1$, $n=2$, and $n=3$ where n is the order of the polynomial) to estimate the following integral:

$$\int_0^4 x e^{3x} dx$$

The Gaussian quadrature equation coefficients can be found in Table 22.1 in the textbook. Compute the absolute value of the relative error for each method, and comment on the accuracy of the results as compared to the “work” required to get those results.