

Quiz 04

Nov 28, 2014.

1. Estimate h or n such that the composite Trapezoidal rule for $\int_0^1 \sin(x^2)dx$ has absolute error less than 10^{-5} . Then give your numerical value I_h with the n you obtained (write down your answer and hand in the program).
2. Derive the closed Newton-Cotes formula on $[0, 1]$ with four quadrature points.
3. Derive the Gaussian quadrature on $[-1, 1]$ with two quadrature points.
4. Describe the procedure to evaluate $\int_0^1 \frac{\sin x}{\sqrt{x}} dx$ so that the Simpson's method would have normal fourth order accuracy. Give all details and need not find the numerical value.

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