Quiz 05

Dec 17, 2010.

1. (40 pts) Integrate $\int_0^1 e^{x^2} dx$ using Trapezoidal Rule. Estimate n or h it takes to bound the error within 10^{-6}. Then report your numerical answer to 9 digits.

2. (30 pts) Find the degree of precision for Simpson's Rule. Give details.

3. (30 pts) Derive the error formula of (non-composite) Midpoint Rule for $\int_a^b f(x)dx$. That is, give explicit formula of $\int_a^b f(x)dx - (b-a)f(\frac{a+b}{2})$, assuming f is sufficiently smooth.

Numerical Analysis I, Fall 2010 (http://www.math.nthu.edu.tw/~wangwc/)

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