



Ask me what I should already know The pre-requisite questions



















The morning after learning trapezoidal rule

### In trapezoidal rule, the number of segments needed to get the exact value for a general definite integral



Two-segment trapezoidal rule of integration is exact for integration of polynomials of order of at most

- A. 1
- B. 2
- C. 3
- D. 4





# In trapezoidal rule, the number of function evaluations for 8 segments is

- A. 8
- B. 9
- C. 16D. 17
- D. 17



The morning after learning Gauss Quadrature Rule

The distance covered by a rocket from t=8 to t=34 seconds is calculated using multiple segment trapezoidal rule by integrating a velocity function. Below is given the estimated distance for different number of segments, n. n 1 2 3 4 5 Value 16520 15421 15212 15138 15104 The number of significant digits at least correct in the answer for *n*=5 is A. 1 B. 2 C. 3 D. 4





#### A scientist can derive a one-point quadrature rule for integrating definite integrals based on getting exact results of integration for the following function

- A.  $a_0 + a_1 x + a_2 x^2$
- $B. \quad a_1 x + a_2 x^2$
- C.  $a_1x$
- *D*.  $a_2 x^2$



## For integrating any first order polynomial, the one-point Gauss quadrature rule will give the same results as

- A. 1-segment trapezoidal rule
- B. 2-segment trapezoidal rule
- C. 3-segment trapezoidal rule
- D. All of the above



## For integrating any third order polynomial, the two-point Gauss quadrature rule will give the same results as

- A. 1-segment trapezoidal rule
- B. 2-segment trapezoidal rule
- C. 3-segment trapezoidal rule
- D. None of the above



The highest order of polynomial for which the *n*-point Gauss-quadrature rule would give an exact integral is

- А. п
- *B. n*+1
- C. 2*n*-1
- D. 2*n*

