Introduction to Week Four

Elementary Integration Formulas

Composite Integration Formulas

Quadrature in MATLAB

Interpolation

Video: Interpolation | Lecture 43
10 min

Reading: Linear and Quadratic Interpolation
10 min

Video: Cubic Spline Interpolation (Part A) | Lecture 44
15 min

Reading: Cubic Spline Interpolation with Endpoint Slopes Known
10 min

Video: Cubic Spline Interpolation (Part B) | Lecture 45
10 min

Reading: Cubic Spline Interpolation with the Not-a-Knot Condition
15 min

Interpolation in MATLAB

Quiz

Programming Assignment: Bessel Function Zeros

Cubic Spline Interpolation with the Not-a-Knot Condition

Consider the points $(0,0)$, $(1,1)$, $(2,1)$ and $(3,2)$. Using the not-a-knot condition, determine the four-by-four matrix equation for the b-coefficients. Solve for the b's as well as the a's, c's and d's, and thus find the cubic spline interpolant. Plot your result. You may use MATLAB Online to assist in your algebra.

✓ **Completed** **Go to next item**