



A Friendly Introduction to Numerical Analysis.

By Bradie, Brian

Pearson, 2005. Book Condition: New. Brand New, Unread Copy in Perfect Condition. A+ Customer Service! Summary: (NOTE: Each chapter begins with An Overview.) 1. Getting Started. Algorithms. Convergence. Floating Point Numbers. Floating Point Arithmetic. 2. Rootfinding. Bisection Method. Method of False Position. Fixed Point Iteration. Newton's Method. The Secant Method and Muller's Method. Accelerating Convergence. Roots of Polynomials. 3. Systems of Equations. Gaussian Elimination. Pivoting Strategies. Norms. Error Estimates. LU Decomposition. Direct Factorization. Special Matrices. Iterative Techniques for Linear Systems: Basic Concepts and Methods. Iterative Techniques for Linear Systems: Conjugate-Gradient Method. Nonlinear Systems. 4. Eigenvalues and Eigenvectors. The Power Method. The Inverse Power Method. Deflation. Reduction to Tridiagonal Form. Eigenvalues of Tridiagonal and Hessenberg Matrices. 5. Interpolation and Curve Fitting. Lagrange Form of the Interpolating Polynomial. Neville's Algorithm. The Newton Form of the Interpolating Polynomial and Divided Differences. Optimal Interpolating Points. Piecewise Linear Interpolation. Hermite and Hermite Cubic Interpolation. Regression. 6. Numerical Differentiation and Integration. Continuous Theory and Key Numerical Concepts. Euler's Method. Higher-Order One-Step Methods. Multistep Methods. Convergence Analysis. Error Control and Variable Step Size Algorithms. Systems of Equations and Higher-Order Equations. Absolute Stability and Stiff Equations. 7. Numerical Methods for Initial Value Problems of Ordinary Differential Equations. Continuous...

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