



## A First Course in Numerical Analysis: Second Edition (Dover Books on Mathematics)

By Anthony Ralston, Philip Rabinowitz



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This outstanding text by two well-known authors treats numerical analysis with mathematical rigor, but presents relatively few theorems and proofs. Oriented toward computer solutions of problems, it stresses errors in methods and computational efficiency, and it compares different solutions to the same problem.

Following an introductory chapter on sources of error and computer arithmetic, the text covers such topics as approximation and algorithms, interpolation, numerical differentiation and numerical quadrature, the numerical solution of ordinary differential equations, functional approximation by least squares and by minimum-maximum error techniques, the solution of nonlinear equations and of simultaneous linear equations, and the calculation of eigenvalues and eigenvectors of matrices.

This second edition also includes discussions of spline interpolation, adaptive integration, the fast Fourier transform, the simplex method of linear programming, and simple and double *QR* algorithms. Problems — some strictly mathematical, others requiring a computer — appear at the end of each chapter.

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