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Nota di contenuto	Cover; Halftitle; Title Page; Copyright Page; The Authors; Foreword to the 1956 Edition; Preface to the 1956 Edition; Contents; Introduction; PART 1. MATHEMATICAL MODELS; 1 Linear and Nonlinear Oscillations BY SOLOMON LEFSCHETZ; 1.1 Introduction; 1.2 Harmonic Oscillators; 1.3 Damped Oscillations; 1.4 Forced Oscillations; 1.5 Linear and Nonlinear Systems; 1.6 Certain Nonlinear Systems; 1.7 Nonlinear Oscillations in Conservative Systems; 1.8 Nonlinear Forced Oscillations; 1.9 Multivibrator Circuits; 1.10 Mathematical Treatment of Nonlinear Problems; 1.11 Methods of Approximation 1.12 Duffing's Method1.13 Poincare's Perturbation Method; 2 Equilibrium Analysis: The Stability Theory and Liapunov BY RICHARD BELLMAN; 2.1 Introduction; 2.2 The Stability Theory of Poincare and Liapunov; 2.3 Stability Theory of Linear Equations; 2.4 Differential-difference Equations; 2.5 The Heat Equation; 3 Exterior Ballistics BY JOHN W. GREEN; 3.1 Introduction; 3.2 Selection of Coordinate Systems; 3.3 Aerodynamic Forces on a Projectile; 3.4 The Equations of Motion; 3.5 Ballistic and Firing Tables; 3.6 Corrections for Small Effects; 3.7 Bombing from Airplanes

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 6.6 Variation of the Green's Functions with the Domain; 6.7 Variation of the Green's Functions with the Coefficients of the Differential Equation;
 7 The Elastostatic Boundary-value Problems BY IVAN S. SOKOLNIKOFF;
 Formulation of Problems; 7.1 Introduction; 7.2 Two Basic Types of Problems;
 7.3 Characterization of Displacements; Strain 7.4 Characterization of the State of Stress

Sommario/riassunto

This volume and its successor were conceived to advance the level of mathematical sophistication in the engineering community. The books particularly focus on material relevant to solving the kinds of mathematical problems regularly confronted by engineers. Suitable as a text for advanced undergraduate and graduate courses as well as a reference for professionals, Volume One's three-part treatment covers mathematical models, probabilistic problems, and computational considerations. Contributions include chapters on linear and nonlinear oscillations by Solomon Lefschetz, on hyperbolic partial
