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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Vector Analysis in Cartesian Coordinates -- Vector Analysis in Curvilinear Coordinates -- Kinematics -- Newton's Laws, Dynamics and Galilean Relativity -- Systems of Particles and Variable Mass -- One-Dimensional Potentials and Two-Dimensional Central Potentials -- Non Relativistic Collisions -- Continuous Mass Distributions. Gravitational Potential and Field -- Non-Inertial Reference Systems -- Rigid Body Dynamics -- Special Theory of Relativity -- Relativistic Collisions and Decays -- Non-Relativistic Lagrangian and Hamiltonian Mechanics.
Sommario/riassunto	This exceptionally well-organized book uses solved problems and exercises to help readers understand the underlying concepts of classical mechanics; accordingly, many of the exercises included are of a conceptual rather than practical nature. A minimum of necessary background theory is presented, before readers are asked to solve the theoretical exercises. In this way, readers are effectively invited to discover concepts on their own. While more practical exercises are also included, they are always designed to introduce readers to something conceptually new. Special emphasis is placed on important but often-neglected concepts such as symmetries and invariance, especially when introducing vector analysis in Cartesian and curvilinear coordinates. More difficult concepts, including non-inertial reference frames, rigid

body motion, variable mass systems, basic tensorial algebra, and calculus, are covered in detail. The equations of motion in non-inertial reference systems are derived in two independent ways, and alternative deductions of the equations of motion for variable mass problems are presented. Lagrangian and Hamiltonian formulations of mechanics are studied for non-relativistic cases, and further concepts such as inertial reference frames and the equivalence principle are introduced and elaborated on.