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Nota di contenuto	DOVER BOOKS ON MATHEMATICS; Title Page; Copyright Page; Dedication; Preface; Table of Contents; 1 - Introduction; 1.1. Mathematical theories and engineering science; 1.2. Scalars, vectors, and tensors; 1.3. Preview; BIBLIOGRAPHY; 2 - Cartesian Vectors and Tensors: Their Algebra; 2.11. Definition of a vector; 2.12. Example of vectors; 2.13. Scalar multiplication; 2.21. Addition of vectors - Coplanar vectors; 2.22. Unit vectors; 2.23. A basis of non-coplanar vectors; 2.31. Scalar product - Orthogonality; 2.32. Vector product; 2.33. Velocity due to rigid body rotation 2.34. Triple scalar product2.35. Triple vector product; 2.36. Reciprocal base systems; 2.41. Second order tensors; 2.42. Examples of second order tensors; 2.43. Scalar multiplication and addition; 2.44. Contraction and multiplication; 2.45. The vector of an antisymmetric tensor; 2.5. Canonical form of a symmetric tensor; 2.61. Higher order tensors; 2.62. The quotient rule; 2.7. Isotropic tensors; 2.81. Dyadics and other notations; 2.82. Axial vectors; BIBLIOGRAPHY; 3 - Cartesian Vectors and Tensors: Their Calculus; 3.11. Tensor functions of a time-

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5.22. Constitutive equations of the Stokesian fluid5.23. The Newtonian fluid; 5.24. Interpretation of the constants and ; 6 - Equations of Motion and Energy in Cartesian Coordinates; 6.11. Equations of motion of a Newtonian fluid; 6.12. Boundary conditions; 6.13. The Reynolds number; 6.14. Dissipation of energy by viscous forces; 6.2. Equations for a Stokesian fluid; 6.3. The energy equation; 6.41. Resume of the development of the equations; 6.42. Special cases of the equations; 6.51. Bernoulli theorems; 6.52. Some further properties of barotropic flow; 7 - Tensors
7.11. Coordinate systems and conventions

Sommario/riassunto

<DIV>This introductory text is geared toward engineers, physicists, and applied mathematicians at the advanced undergraduate and graduate levels. It applies the mathematics of Cartesian and general tensors to physical field theories and demonstrates them chiefly in terms of the theory of fluid mechanics. Numerous exercises appear throughout the text. 1962 edition.</DIV>