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   Nota di bibliografia   Includes bibliographical references and index.

   Nota di contenuto Measure -- The Lebesgue Model -- Measurable Functions -- The
                      Integral -- The Product Measure -- Change of Variables in an Integral
                      -- Integrals Dependent on a Parameter -- Surface Integrals --
                      Approximation and Convolution of the Space -- Fourier Series and the
                      Fourier Transform -- Charges. The Radon-Nikodym Theory -- Integral
                      Representation of Linear Functionals -- Appendices.

   Sommario/riassunto Real Analysis: Measures, Integrals and Applications is devoted to the
                      basics of integration theory and its related topics. The main emphasis
                      is made on the properties of the Lebesgue integral and various
                      applications both classical and those rarely covered in literature.   This
                      book provides a detailed introduction to Lebesgue measure and
                      integration as well as the classical results concerning integrals of
                      multivariable functions. It examines the concept of the Hausdorff
                      measure, the properties of the area on smooth and Lipschitz surfaces,
                      the divergence formula, and Laplace's method for finding the
                      asymptotic behavior of integrals. The general theory is then applied to
                      harmonic analysis, geometry, and topology. Preliminaries are provided

on probability theory, including the study of the Rademacher functions as a sequence of independent random variables.   The book contains more than 600 examples and exercises. The reader who has mastered the first third of the book will be able to study other areas of mathematics that use integration, such as probability theory, statistics, functional analysis, partial probability theory, statistics, functional analysis, partial differential equations and others.   Real Analysis: Measures, Integrals and Applications is intended for advanced undergraduate and graduate students in mathematics and physics. It assumes that the reader is familiar with basic linear algebra and differential calculus of functions of several variables.