1.	Record Nr.	UNINA9910254082003321
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	Titolo	Introduction to Calculus and Classical Analysis [[electronic resource] /] / by Omar Hijab
	Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016
	ISBN	3-319-28400-2
	Edizione	[4th ed. 2016.]
	Descrizione fisica	1 online resource (XIII, 427 p. 69 illus., 1 illus. in color.)
	Collana	Undergraduate Texts in Mathematics, , 0172-6056
	Disciplina	511.4
	Soggetti	Approximation theory Sequences (Mathematics) Special functions Combinatorics Approximations and Expansions Sequences, Series, Summability Special Functions
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Bibliographic Level Mode of Issuance: Monograph
	Nota di contenuto	Preface -- A Note to the Reader -- 1. The Set of Real Numbers -- 2. Continuity -- 3. Differentiation.-4. Integration -- 5. Applications -- 6. Generalizations -- A. Solutions -- References -- Index.
	Sommario/riassunto	This completely self-contained text is intended either for a course in honors calculus or for an introduction to analysis. Beginning with the real number axioms, and involving rigorous analysis, computational dexterity, and a breadth of applications, it is ideal for undergraduate math majors. This fourth edition includes an additional chapter on the fundamental theorems in their full Lebesgue generality, based on the Sunrise Lemma. Key features of this text include: • Applications from several parts of analysis, e.g., convexity, the Cantor set, continued fractions, the AGM, the theta and zeta functions, transcendental numbers, the Bessel and gamma functions, and many more; • A heavy emphasis on computational problems, from the high-school quadratic formula to the formula for the derivative of the zeta function at zero; • Traditionally transcendentally presented material, such as infinite

products, the Bernoulli series, and the zeta functional equation, is developed over the reals; • A self-contained treatment of the fundamental theorems of calculus in the general case using the Sunrise Lemma; • The integral is defined as the area under the graph, while the area is defined for every subset of the plane; • 450 problems with all the solutions presented at the back of the text. Reviews: "Chapter 5 is…an astonishing tour de force…" —Steven G. Krantz, American Math. Monthly "For a treatment…[of infinite products and Bernoulli series] that is very close to Euler's and even more elementary…" —V. S. Varadarajan, Bulletin AMS "This is a very intriguing, decidedly unusual, and very satisfying treatment of calculus and introductory analysis. It's full of quirky little approaches to standard topics that make one wonder over and over again, 'Why is it never done like this?'" —John Allen Paulos, Author of Innumeracy and A Mathematician Reads the Newspaper.