1.	Record Nr.	UNINA9910819903003321
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	Titolo	The foundations of mathematics / / Ian Stewart and David Tall
	Pubbl/distr/stampa	New York, New York : , : Oxford University Press, , 2015 ©2015
	ISBN	0-19-870644-8 0-19-101647-0
	Edizione	[Second edition.]
	Descrizione fisica	1 online resource (409 p.)
	Disciplina	510
	Soggetti	Mathematics Logic, Symbolic and mathematical
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Description based upon print version of record.
	Nota di bibliografia	Includes bibliographical references and index.
	Nota di contenuto	Cover -- Preface to the Second Edition -- Preface to the First Edition -- Contents -- Part I The Intuitive Background -- 1 Mathematical Thinking -- 2 Number Systems -- Part II The Beginnings of Formalisation -- 3 Sets -- 4 Relations -- 5 Functions -- 6 Mathematical Logic -- 7 Mathematical Proof -- Part III The Development of Axiomatic Systems -- 8 Natural Numbers and Proof by Induction -- 9 Real Numbers -- 10 Real Numbers as a Complete Ordered Field -- 11 Complex Numbers and Beyond -- Part IV Using Axiomatic Systems -- 12 Axiomatic Systems, Structure Theorems, and Flexible Thinking -- 13 Permutations and Groups -- 14 Cardinal Numbers -- 15 Infinitesimals -- Part V Strengthening the Foundations -- 16 Axioms for Set Theory -- Appendix: How to Read Proofs: The 'Self-Explanation' Strategy -- References and Further Reading -- Index.
	Sommario/riassunto	The transition from school mathematics to university mathematics is seldom straightforward. Students are faced with a disconnect between the algorithmic and informal attitude to mathematics at school, versus a new emphasis on proof, based on logic, and a more abstract development of general concepts, based on set theory. The authors have many years' experience of the potential difficulties involved, through teaching first-year undergraduates and researching the ways