Frege Dedekind And Peano On The Foundations Of Arithmetic Routledge Revivals Donald Gillies

FregeThe Foundations of ArithmeticThe Universal ComputerThe Journal of Symbolic LogicAbstraction and InfinityLogic from Kant to RussellIsis Cumulative Bibliography 1976-1985: Persons and institutionsFrege's TheoremIntroduction to Mathematical Logic, Fourth EditionLectures on the Curry-Howard IsomorphismFregePhilosophy of MathematicsFoundations of AnalysisA Mathematical Prelude to the Philosophy of MathematicsThe Search for Mathematical Roots, 1870-1940Was Sind und was Sollen Die Zahlen?Frege, Dedekind, and Peano on the Foundations of Arithmetic (Routledge Revivals)Gottlob Frege: Basic Laws of ArithmeticTheory of Algebraic Functions of One VariableIntroduction to Set TheoryThe Great Formal Machinery WorksPhilosophy of MathematicsPrincipia MathematicaParadoxes of the Infinite (Routledge Revivals)PeanoSet TheoryMetamathematics of First-Order ArithmeticCanadian Journal of PhilosophyCanadian Philosophical ReviewsConceptual Roots of MathematicsLanguage, Logic and Formalization of KnowledgeGiuseppe Peano between Mathematics and LogicThe MonistIntroduction To Mathematical PhilosophyReading Frege's GrundgesetzeΩ-Bibliography of Mathematical LogicFrom Frege to GödelNumber and NumbersWhat are Numbers and what Should They Be?Gottlob Frege: Frege's

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philosophy in context

Frege

The Foundations of Arithmetic

This influential 1888 publication explained the real numbers, and their construction and properties, from first principles.

The Universal Computer

Originally published in 1919, this work on the philosophy of mathematics is both expensive and hard to find in its first edition. It contains Bertrand Russell's ideas on number definition, cardinal numbers, propositional functions and much more. This is a fascinating work and thoroughly recommended for anyone interested in the philosophy of mathematics. Many of the earliest books, particularly those dating back to the 1900s and before, are now extremely scarce. We are republishing these classic works in affordable, high quality, modern editions, using the original text and artwork.

The Journal of Symbolic Logic

Philosophy of Mathematics: An Introduction provides a critical analysis of the major philosophical issues and viewpoints in the concepts and methods of

mathematics - from antiquity to the modern era. Offers beginning readers a critical appraisal of philosophical viewpoints throughout history Gives a separate chapter to predicativism, which is often (but wrongly) treated as if it were a part of logicism Provides readers with a non-partisan discussion until the final chapter, which gives the author's personal opinion on where the truth lies Designed to be accessible to both undergraduates and graduate students, and at the same time to be of interest to professionals

Abstraction and Infinity

The breathtakingly rapid pace of change in computing makes it easy to overlook the pioneers who began it all. Written by Martin Davis, respected logician and researcher in the theory of computation, The Universal Computer: The Road from Leibniz to Turing explores the fascinating lives, ideas, and discoveries of seven remarkable mathematicians. It tells the stories of the unsung heroes of the computer age – the logicians. The story begins with Leibniz in the 17th century and then focuses on Boole, Frege, Cantor, Hilbert, and Gödel, before turning to Turing. Turing's analysis of algorithmic processes led to a single, all-purpose machine that could be programmed to carry out such processes—the computer. Davis describes how this incredible group, with lives as extraordinary as their accomplishments, grappled with logical reasoning and its mechanization. By investigating their achievements and failures, he shows how these pioneers paved the

way for modern computing. Bringing the material up to date, in this revised edition Davis discusses the success of the IBM Watson on Jeopardy, reorganizes the information on incompleteness, and adds information on Konrad Zuse. A distinguished prize-winning logician, Martin Davis has had a career of more than six decades devoted to the important interface between logic and computer science. His expertise, combined with his genuine love of the subject and excellent storytelling, make him the perfect person to tell this story.

Logic from Kant to Russell

Includes lists of members.

Isis Cumulative Bibliography 1976-1985: Persons and institutions

This collection brings together recent scholarship on Frege, including new translations of German material which is made available to Anglophone scholars for the first time.

Frege's Theorem

No one has figured more prominently in the study of the German philosopher Gottlob Frege than Michael Dummett. His magisterial Frege: Philosophy of Language is a sustained, systematic analysis of Frege's thought, omitting only the issues in philosophy of mathematics. In this work Dummett discusses, section by section, Frege's masterpiece

The Foundations of Arithmetic and Frege's treatment of real numbers in the second volume of Basic Laws of Arithmetic, establishing what parts of the philosopher's views can be salvaged and employed in new theorizing, and what must be abandoned, either as incorrectly argued or as untenable in the light of technical developments. Gottlob Frege (1848-1925) was a logician, mathematician, and philosopher whose work had enormous impact on Bertrand Russell and later on the young Ludwig Wittgenstein, making Frege one of the central influences on twentieth-century Anglo-American philosophy; he is considered the founder of analytic philosophy. His philosophy of mathematics contains deep insights and remains a useful and necessary point of departure for anyone seriously studying or working in the field.

Introduction to Mathematical Logic, Fourth Edition

Lectures on the Curry-Howard Isomorphism

A sophisticated, original introduction to the philosophy of mathematics from one of its leading thinkers Mathematics is a model of precision and objectivity, but it appears distinct from the empirical sciences because it seems to deliver nonexperiential knowledge of a nonphysical reality of numbers, sets, and functions. How can these two aspects of mathematics be reconciled? This concise book provides a systematic, accessible introduction to the

field that is trying to answer that question: the philosophy of mathematics. Øystein Linnebo, one of the world's leading scholars on the subject, introduces all of the classical approaches to the field as well as more specialized issues, including mathematical intuition, potential infinity, and the search for new mathematical axioms. Sophisticated but clear and approachable, this is an essential book for all students and teachers of philosophy and of mathematics.

Frege

The information age owes its existence to a little-known but crucial development, the theoretical study of logic and the foundations of mathematics. The Great Formal Machinery Works draws on original sources and rare archival materials to trace the history of the theories of deduction and computation that laid the logical foundations for the digital revolution. Jan von Plato examines the contributions of figures such as Aristotle; the nineteenth-century German polymath Hermann Grassmann; George Boole, whose Boolean logic would prove essential to programming languages and computing; Ernst Schröder, best known for his work on algebraic logic; and Giuseppe Peano, cofounder of mathematical logic. Von Plato shows how the idea of a formal proof in mathematics emerged gradually in the second half of the nineteenth century, hand in hand with the notion of a formal process of computation. A turning point was reached by 1930, when Kurt Gödel conceived his celebrated incompleteness theorems. They were an enormous boost to the study of formal

languages and computability, which were brought to perfection by the end of the 1930s with precise theories of formal languages and formal deduction and parallel theories of algorithmic computability. Von Plato describes how the first theoretical ideas of a computer soon emerged in the work of Alan Turing in 1936 and John von Neumann some years later. Shedding new light on this crucial chapter in the history of science, The Great Formal Machinery Works is essential reading for students and researchers in logic, mathematics, and computer science.

Philosophy of Mathematics

The scope and method of logic as we know it today eminently reflect the ground-breaking developments of set theory and the logical foundations of mathematics at the turn of the 20th century. Unfortunately, little effort has been made to understand the idiosyncrasies of the philosophical context that led to these tremendous innovations in the 19thcentury beyond what is found in the works of mathematicians such as Frege, Hilbert, and Russell. This constitutes a monumental gap in our understanding of the central influences that shaped 19th-century thought, from Kant to Russell, and that helped to create the conditions in which analytic philosophy could emerge. The aim of Logic from Kant to Russell is to document the development of logic in the works of 19th-century philosophers. It contains thirteen original essays written by authors from a broad range of backgrounds—intellectual historians, historians of idealism, philosophers of science, and

historians of logic and analytic philosophy. These essays question the standard narratives of analytic philosophy's past and address concerns that are relevant to the contemporary philosophical study of language, mind, and cognition. The book covers a broad range of influential thinkers in 19th-century philosophy and analytic philosophy, including Kant, Bolzano, Hegel, Herbart, Lotze, the British Algebraists and Idealists, Moore, Russell, the Neo-Kantians, and Frege.

Foundations of Analysis

This book is based on two premises: one cannot understand philosophy of mathematics without understanding mathematics and one cannot understand mathematics without doing mathematics. It draws readers into philosophy of mathematics by having them do mathematics. It offers 298 exercises, covering philosophically important material, presented in a philosophically informed way. The exercises give readers opportunities to recreate some mathematics that will illuminate important readings in philosophy of mathematics. Topics include primitive recursive arithmetic, Peano arithmetic, Gödel's theorems, interpretability, the hierarchy of sets, Frege arithmetic and intuitionist sentential logic. The book is intended for readers who understand basic properties of the natural and real numbers and have some background in formal logic.

A Mathematical Prelude to the Philosophy of Mathematics

This is the first complete English translation of Gottlob Frege's Grundgesetze der Arithmetik (originally published in two volumes, 1893 and 1903), with introduction and annotation. The importance of Frege's ideas within contemporary philosophy would be hard to exaggerate. He was, to allintents and purposes, the inventor of mathematical logic, and the influence exerted on modern philosophy of language and logic, and indeed on general epistemology, by the philosophical framework within which his technical contributions were conceived and developed has been so deep that he has astrong case to be regarded as the inventor of much of the agenda of modern analytical philosophy itself. Two of Frege's three principal books - the Begriffsschrift (1879) and Grundlagen der Arithmetik (1884) - have been available in English translation for many years, as have all the most important of his other, article-length writings. Grundgesetze was to have been the summit of Frege's life's work -a rigorous demonstration of how the fundamental laws of the classical pure mathematics of the natural and real numbers could be derived from principles which, in his view, were purely logical. A letter received from Bertrand Russell shortly before the publication of the second volume made Fregerealise that Axiom V of his system, governing identity for value-ranges, led to contradiction. But much of the main thrust of Frege's project can be salvaged. The continuing importance of the Grundgesetze lies not only in its bearing on issues in the foundations of mathematics but in its model of philosophical inquiry. Frege's ability to locate the essential questions, his integration of

logical and philosophical analysis, and his rigorous approach tocriticism and argument in general are vividly in evidence in this, his most ambitious work.

The Search for Mathematical Roots, 1870-1940

Gathered together here are the fundamental texts of the great classical period in modern logic. A complete translation of Gottlob Frege's Begriffsschrift--which opened a great epoch in the history of logic by fully presenting propositional calculus and quantification theory--begins the volume, which concludes with papers by Herbrand and by Gödel.

Was Sind und was Sollen Die Zahlen?

Richard Heck explores a key idea in the work of the great philosopher/logician Gottlob Frege: that the axioms of arithmetic can be logically derived from a single principle. Heck uses the theorem to explore historical, philosophical, and technical issues in philosophy of mathematics and logic, relating them to key areas of contemporary philosophy.

Frege, Dedekind, and Peano on the Foundations of Arithmetic (Routledge Revivals)

Paolo Mancosu provides an original investigation of historical and systematic aspects of the notions of abstraction and infinity and their interaction. A familiar way of introducing concepts in mathematics

rests on so-called definitions by abstraction. An example of this is Hume's Principle, which introduces the concept of number by stating that two concepts have the same number if and only if the objects falling under each one of them can be put in one-one correspondence. This principle is at the core of neo-logicism. In the first two chapters of the book, Mancosu provides a historical analysis of the mathematical uses and foundational discussion of definitions by abstraction up to Frege, Peano, and Russell. Chapter one shows that abstraction principles were quite widespread in the mathematical practice that preceded Frege's discussion of them and the second chapter provides the first contextual analysis of Frege's discussion of abstraction principles in section 64 of the Grundlagen. In the second part of the book, Mancosu discusses a novel approach to measuring the size of infinite sets known as the theory of numerosities and shows how this new development leads to deep mathematical, historical, and philosophical problems. The final chapter of the book explore how this theory of numerosities can be exploited to provide surprisingly novel perspectives on neo-logicism.

Gottlob Frege: Basic Laws of Arithmetic

All students of mathematics know of Peano's postulates for the natural numbers and his famous space-filling curve, yet their knowledge often stops there. Part of the reason is that there has not until now been a full-scale study of his life and works. This must surely be surprising, when one realizes the

length of his academic career (over 50 years) and the extent of his publica tions (over 200) in a wide variety of fields, many of which had immediate and long-term effects on the development of modern mathematics. A study of his life seems long overdue. It appeared to me that the most likely person to write a biography of Peano would be his devoted disciple Ugo Cassina, with whom I studied at the University of Milan in 1957-58. I wrote to Professor Cassina on 29 October, 1963, inquiring if he planned to write the biography, and I offered him my assistance, since I hoped to return to Italy for a year. He replied on 28 November, 1963, suggesting that we collaborate, meaning by this that I would write the biography, in English, using his material and advice. I gladly agreed to this suggestion, but work on the project had hardly begun when Professor Cassina died unexpectedly on 5 October, 1964. I then decided to continue the project on my own. I spent the academic year 1966-67 in Turin; completion of the book took ten years.

Theory of Algebraic Functions of One Variable

Introduction to Set Theory

The Great Formal Machinery Works

Vols. 2 and 5 include appendices.

Philosophy of Mathematics

Gottlob Frege's Grundgesetze der Arithmetik, or Basic Laws of Arithmetic, was intended to be his magnum opus, the book in which he would finally establish his logicist philosophy of arithmetic. But because of the disaster of Russell's Paradox, which undermined Frege's proofs, the more mathematical parts of the book have rarely been read. Richard G. Heck, Jr., aims to change that, and establish it as a neglected masterpiece that must be placed at the center of Frege's philosophy. Part I of Reading Frege's Grundgesetze develops an interpretation of the philosophy of logic that informs Grundgesetze, paying especially close attention to the difficult sections of Frege's book in which he discusses his notorious 'Basic Law V' and attempts to secure its status as a law of logic. Part II examines the mathematical basis of Frege's logicism, explaining and exploring Frege's formal arguments. Heck argues that Frege himself knew that his proofs could be reconstructed so as to avoid Russell's Paradox, and presents Frege's arguments in a way that makes them available to a wide audience. He shows, by example, that careful attention to the structure of Frege's arguments, to what he proved, to how he proved it, and even to what he tried to prove but could not, has much to teach us about Frege's philosophy.

Principia Mathematica

First published in 1982, this reissue contains a critical exposition of the views of Frege, Dedekind and Peano on the foundations of arithmetic. The last quarter of the 19th century witnessed a remarkable growth of

interest in the foundations of arithmetic. This work analyses both the reasons for this growth of interest within both mathematics and philosophy and the ways in which this study of the foundations of arithmetic led to new insights in philosophy and striking advances in logic. This historical-critical study provides an excellent introduction to the problems of the philosophy of mathematics - problems which have wide implications for philosophy as a whole. This reissue will appeal to students of both mathematics and philosophy who wish to improve their knowledge of logic.

Paradoxes of the Infinite (Routledge Revivals)

Gert H. Muller The growth of the number of publications in almost all scientific areas, as in the area of (mathematical) logic, is taken as a sign of our scientifically minded culture, but it also has a terrifying aspect. In addition, given the rapidly growing sophistica tion, specialization and hence subdivision of logic, researchers, students and teachers may have a hard time getting an overview of the existing literature, partic ularly if they do not have an extensive library available in their neighbourhood: they simply do not even know what to ask for! More specifically, if someone vaguely knows that something vaguely connected with his interests exists some where in the literature, he may not be able to find it even by searching through the publications scattered in the review journals. Answering this challenge was and is the central motivation for

compiling this Bibliography. The Bibliography comprises (presently) the following six volumes (listed with the corresponding Editors): I. Classical Logic W. Rautenberg II. Non-classical Logics W. Rautenberg III. Model Theory H. -D. Ebbinghaus IV. Recursion Theory P. G. Hinman V. Set Theory A. R. Blass VI. Proof Theory; Constructive Mathematics J. E. Kister; D. van Dalen & A. S. Troelstra.

Peano

Set Theory

This book contains the papers developing out the presentations given at the International Conference organized by the Torino Academy of Sciences and the Department of Mathematics Giuseppe Peano of the Torino University to celebrate the 150th anniversary of G. Peano's birth - one of the greatest figures in modern mathematics and logic and the most important mathematical logician in Italy - a century after the publication of Formulario Mathematico, a great attempt to systematise Mathematics in symbolic form.

Metamathematics of First-Order Arithmetic

A rich and informative biography of one of the most important and influential figures of analytic philosophy.

Canadian Journal of Philosophy

The Fourth Edition of this long-established text retains all the key features of the previous editions, covering the basic topics of a solid first course in mathematical logic. This edition includes an extensive appendix on second-order logic, a section on set theory with urlements, and a section on the logic that results when we allow models with empty domains. The text contains numerous exercises and an appendix furnishes answers to many of them. Introduction to Mathematical Logic includes: propositional logic first-order logic first-order number theory and the incompleteness and undecidability theorems of Gödel, Rosser, Church, and Tarski axiomatic set theory theory of computability The study of mathematical logic, axiomatic set theory, and computability theory provides an understanding of the fundamental assumptions and proof techniques that form basis of mathematics. Logic and computability theory have also become indispensable tools in theoretical computer science, including artificial intelligence. Introduction to Mathematical Logic covers these topics in a clear, reader-friendly style that will be valued by anyone working in computer science as well as lecturers and researchers in mathematics, philosophy, and related fields.

Canadian Philosophical Reviews

Paradoxes of the Infinite presents one of the most insightful, yet strangely unacknowledged, mathematical treatises of the 19th century: Dr

Bernard Bolzano's Paradoxien. This volume contains an adept translation of the work itself by Donald A. Steele S.J., and in addition an historical introduction, which includes a brief biography as well as an evaluation of Bolzano the mathematician, logician and physicist.

Conceptual Roots of Mathematics

Language, Logic and Formalization of Knowledge

Certainly no clearer treatment of the foundations of the number system can be offered one can only be thankful to the author for this fundamental piece of exposition, which is alive with his vitality and genius. --American Mathematical Monthly Why does $2 \times 2 = 4$? What are fractions? Imaginary numbers? Why do the laws of algebra hold? And how do we prove these laws? What are the properties of the numbers on which the Differential and Integral Calculus is based? In other words, what are numbers? And why do they have the properties we attribute to them? Thanks to the genius of Dedekind, Cantor, Peano, Frege, and Russell, such questions can now be given a satisfactory answer. This English translation of Landau's famous Grundlagen der Analysis answers these important questions.

Giuseppe Peano between Mathematics and Logic

This book is the first English translation of the classic long paper Theorie der algebraischen Functionen einer Veranderlichen (Theory of algebraic functions of one variable), published by Dedekind and Weber in 1882. The translation has been enriched by a Translator's Introduction that includes historical background, and also by extensive commentary embedded in the translation itself. The translation, introduction, and commentary provide the first easy access to this important paper for a wide mathematical audience: students, historians of mathematics, and professional mathematicians. Why is the Dedekind-Weber paper important? In the 1850s, Riemann initiated a revolution in algebraic geometry by interpreting algebraic curves as surfaces covering the sphere. He obtained deep and striking results in pure algebra by intuitive arguments about surfaces and their topology. However, Riemann's arguments were not rigorous, and they remained in limbo until 1882, when Dedekind and Weber put them on a sound foundation. The key to this breakthrough was to develop the theory of algebraic functions in analogy with Dedekind's theory of algebraic numbers, where the concept of ideal plays a central role. By introducing such concepts into the theory of algebraic curves, Dedekind and Weber paved the way for modern algebraic geometry.

The Monist

Introduction To Mathematical Philosophy

Since their inception, the Perspectives in Logic and Lecture Notes in Logic series have published seminal works by leading logicians. Many of the original books in the series have been unavailable for years, but they are now in print once again. This volume, the third publication in the Perspectives in Logic series, is a much-needed monograph on the metamathematics of first-order arithmetic. The authors pay particular attention to subsystems (fragments) of Peano arithmetic and give the reader a deeper understanding of the role of the axiom schema of induction and of the phenomenon of incompleteness. The reader is only assumed to know the basics of mathematical logic, which are reviewed in the preliminaries. Part I develops parts of mathematics and logic in various fragments. Part II is devoted to incompleteness. Finally, Part III studies systems that have the induction schema restricted to bounded formulas (bounded arithmetic).

Reading Frege's Grundgesetze

Part of the Longman Library of Primary Sources in Philosophy," this edition ofFrege's Foundations of Arithmetic is framed by a pedagogical structure designed to make this important work of philosophy more accessible and meaningful for readers. A General Introduction includes the work's historical context, a discussion of historical influences, and biographical information on Gottlob Frege. The conclusion discusses how the work has influenced other philosophers and why it is important today. Annotations and notes from the editor clarify difficult

passages for greater understanding, and a bibliography gives the reader additional resources for further study.

Ω-Bibliography of Mathematical Logic

The Curry-Howard isomorphism states an amazing correspondence between systems of formal logic as encountered in proof theory and computational calculi as found in type theory. For instance, minimal propositional logic corresponds to simply typed lambda-calculus, first-order logic corresponds to dependent types, second-order logic corresponds to polymorphic types, sequent calculus is related to explicit substitution, etc. The isomorphism has many aspects, even at the syntactic level: formulas correspond to types, proofs correspond to terms, provability corresponds to inhabitation, proof normalization corresponds to term reduction, etc. But there is more to the isomorphism than this. For instance, it is an old idea---due to Brouwer, Kolmogorov, and Heyting---that a constructive proof of an implication is a procedure that transforms proofs of the antecedent into proofs of the succedent; the Curry-Howard isomorphism gives syntactic representations of such procedures. The Curry-Howard isomorphism also provides theoretical foundations for many modern proof-assistant systems (e.g. Coq). This book give an introduction to parts of proof theory and related aspects of type theory relevant for the Curry-Howard isomorphism. It can serve as an introduction to any or both of typed lambda-calculus and intuitionistic logic. Key features -

The Curry-Howard Isomorphism treated as common theme - Reader-friendly introduction to two complementary subjects: Lambda-calculus and constructive logics - Thorough study of the connection between calculi and logics - Elaborate study of classical logics and control operators - Account of dialogue games for classical and intuitionistic logic - Theoretical foundations of computer-assisted reasoning · The Curry-Howard Isomorphism treated as the common theme. · Reader-friendly introduction to two complementary subjects: lambda-calculus and constructive logics · Thorough study of the connection between calculi and logics. · Elaborate study of classical logics and control operators. · Account of dialogue games for classical and intuitionistic logic. · Theoretical foundations of computer-assisted reasoning

From Frege to Gödel

What is a number? What is infinity? What is continuity? What is order? Answers to these fundamental questions obtained by late nineteenth-century mathematicians such as Dedekind and Cantor gave birth to set theory. This textbook presents classical set theory in an intuitive but concrete manner. To allow flexibility of topic selection in courses, the book is organized into four relatively independent parts with distinct mathematical flavors. Part I begins with the Dedekind–Peano axioms and ends with the construction of the real numbers. The core Cantor–Dedekind theory of cardinals, orders, and ordinals appears in Part II. Part III focuses on the real

continuum. Finally, foundational issues and formal axioms are introduced in Part IV. Each part ends with a postscript chapter discussing topics beyond the scope of the main text, ranging from philosophical remarks to glimpses into landmark results of modern set theory such as the resolution of Lusin's problems on projective sets using determinacy of infinite games and large cardinals. Separating the metamathematical issues into an optional fourth part at the end makes this textbook suitable for students interested in any field of mathematics, not just for those planning to specialize in logic or foundations. There is enough material in the text for a year-long course at the upper-undergraduate level. For shorter one-semester or one-quarter courses, a variety of arrangements of topics are possible. The book will be a useful resource for both experts working in a relevant or adjacent area and beginners wanting to learn set theory via self-study.

Number and Numbers

While many books have been written about Bertrand Russell's philosophy and some on his logic, I. Grattan-Guinness has written the first comprehensive history of the mathematical background, content, and impact of the mathematical logic and philosophy of mathematics that Russell developed with A. N. Whitehead in their Principia mathematica (1910-1913). ? This definitive history of a critical period in mathematics includes detailed accounts of the two principal influences upon Russell around 1900: the set theory of Cantor and the mathematical

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logic of Peano and his followers. Substantial surveys are provided of many related topics and figures of the late nineteenth century: the foundations of mathematical analysis under Weierstrass; the creation of algebraic logic by De Morgan, Boole, Peirce, Schröder, and Jevons; the contributions of Dedekind and Frege; the phenomenology of Husserl; and the proof theory of Hilbert. The many-sided story of the reception is recorded up to 1940, including the rise of logic in Poland and the impact on Vienna Circle philosophers Carnap and Gödel. A strong American theme runs though the story, beginning with the mathematician E. H. Moore and the philosopher Josiah Royce, and stretching through the emergence of Church and Quine, and the 1930s immigration of Carnap and Gödel. Grattan-Guinness draws on around fifty manuscript collections, including the Russell Archives, as well as many original reviews. The bibliography comprises around 1,900 items, bringing to light a wealth of primary materials. Written for mathematicians, logicians, historians, and philosophers--especially those interested in the historical interaction between these disciplines--this authoritative account tells an important story from its most neglected point of view. Whitehead and Russell hoped to show that (much of) mathematics was expressible within their logic; they failed in various ways, but no definitive alternative position emerged then or since.

What are Numbers and what Should They Be?

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Badiou goes through the most important innovations in the 19th-century theory of numbers, covering Frege, Dedekind, Peano and Cantor, and presents his own theory of numbers, one that has broader implications for social and political philosophy.

Gottlob Frege: Frege's philosophy in context

The Conceptual Roots of Mathematics is a comprehensive study of the foundation of mathematics. J.R. Lucas, one of the most distinguished Oxford scholars, covers a vast amount of ground in the philosophy of mathematics, showing us that it is actually at the heart of the study of epistemology and metaphysics.

ROMANCE ACTION & ADVENTURE MYSTERY & THRILLER BIOGRAPHIES & HISTORY CHILDREN'S YOUNG ADULT FANTASY HISTORICAL FICTION HORROR LITERARY FICTION NON-FICTION SCIENCE FICTION