Kurt Godel And The Foundations Of Mathematics

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Foundations of Mathematics Jack John Bulloff 2012-12-06 Dr. KURT GODEL'S sixtieth birthday (April 28, 1966) and the thirty fifth anniversary of the publication of his theorems on undecidability were celebrated during the 75th Anniversary Meeting of the Ohio Ac ademy of Science at The Ohio State University, Columbus, on April 22, 1966. The celebration took the form of a Festschrift Symposium on a theme supported by the late Director of The Institute for Advanced Study at Princeton, New Jersey, Dr. J. ROBERT OPPENHEIMER: "Logic, and Its Relations to Mathematics, Natural Science, and Philosophy." The symposium also celebrated the founding of Section L (Mathematical Sciences) of the Ohio Academy of Science. Salutations to Dr. GODEL were followed by the reading of papers by S. F. BARKER, H. B. CURRY, H. RUBIN, G. E. SACKS, and G. TAKEUTI, and by the announcement of in-absentia papers contributed in honor of Dr. GODEL by A. LEVY, B. MELTZER, R. M. SOLOVAY, and E. WETTE. A short discussion of "The II Beyond Godel's I" concluded the session.
Kurt Gödel Philosopher-Scientist Collectif 2021-10-15 Most of the essays that are collected in this volume are the outcome of talks given at the international conference Kurt Gödel Philosopher: From Logic to Cosmology that was held in Aix-en-Provence (France) in summer 2013. In addition many of the authors belong to a group of scientists who have contributed to a project with the same title under the direction of Gabriella Crocco, to a larger or lesser degree.For this reason the volume represents more than just a collection of essays on Gödel. It is in fact the product of a long and enduring international collaboration. There was a group in France that worked on the transcriptions of the Max Phil and its interpretations. It consisted of: Mark van Atten, Eric Audureau, Julien Bertrand, Paola Cantù, Gabriella Crocco, Eva-Maria Engelen, Amélie Mertens and Robin Rollinger. And then there was a group of experts in Gödel studies and logic to whom the results of this ongoing research were presented and with whom they were discussed every now and then. This group consisted of: John W. Dawson Jr. and Cheryl Dawson, Akihiro Kanamori, Per Martin-Löf, Göran Sundholm and Richard Tieszen. For the conference the group of experts was enlarged by Eberhard Knobloch and Massimo Mugnai as authorities on Leibniz – to whom Gödel refers quite often – and by several Gödel-enthusiasts who gave us great pleasure by reacting to our call for papers. The transcriptions of notebooks IX, X, XI, and XII were only made accessible to the experts for

their lectures at the conference even though not all of the transcriptions are yet ready for circulation or for publication.
Phenomenology, Logic, and the Philosophy of Mathematics Richard L. Tieszen 2005-06-06 In this 2005 book, logic, mathematical knowledge and objects are explored alongside reason and intuition in the exact sciences.
The Foundations of Computability Theory Borut Robi? 2015-09-14 This book offers an original and informative view of the development of fundamental concepts of computability theory. The treatment is put into historical context, emphasizing the motivation for ideas as well as their logical and formal development. In Part I the author introduces computability theory, with chapters on the foundational crisis of mathematics in the early twentieth century, and formalism; in Part II he explains classical computability theory, with chapters on the quest for formalization, the Turing Machine, and early successes such as defining incomputable problems, c.e. (computably enumerable) sets, and developing methods for proving incomputability; in Part III he explains relative computability, with chapters on computation with external help, degrees of unsolvability, the Turing hierarchy of unsolvability, the class of degrees of unsolvability, c.e. degrees and the priority method, and the arithmetical hierarchy. This is a gentle introduction from the origins of computability theory up to current research, and it will be of value as a textbook and guide for advanced undergraduate and graduate students and researchers in the domains of computability theory and theoretical computer science.
The Legacy of Kurt Schütte Reinhard Kahle 2020-08-10 This book on proof theory centers around the legacy of Kurt Schütte and its current impact on the subject. Schütte was the last doctoral student of David Hilbert who was the first to see that proofs can be viewed as structured mathematical objects amenable to investigation by mathematical methods (metamathematics). Schütte inaugurated the important paradigm shift from finite proofs to infinite proofs and developed the mathematical tools for their analysis. Infinitary proof theory flourished in his hands in the 1960s, culminating in the famous bound ?0 for the limit of predicative mathematics (a fame shared with Feferman). Later his interests shifted to developing infinite proof calculi for impredicative theories. Schütte had a keen interest in advancing ordinal analysis to ever stronger theories and was still working on some of the strongest systems in his eighties. The articles in this volume from leading experts close to his research, show the enduring influence of his work in modern proof theory. They range from eye witness accounts of his scientific life to developments at the current research frontier, including papers by Schütte himself that have never been published before.
Gödel's Disjunction Leon Horsten 2016 The logician Kurt Godel in 1951 established a disjunctive thesis about the scope and limits of mathematical knowledge: either the mathematical mind is not equivalent to a Turing machine (i.e., a computer), or there are absolutely undecidable mathematical problems. In the second half of the twentieth century, attempts have been made to arrive at a stronger conclusion. In particular, arguments have been produced by the philosopher J.R. Lucas and by the physicist and mathematician Roger Penrose that intend to show that the mathematical mind is more powerful than any computer. These arguments, and counterarguments to them, have not convinced the logical and philosophical community. The reason for this is an insufficiency if rigour in the debate. The contributions in this volume move the debate forward by formulating rigorous frameworks and formally spelling out and evaluating arguments that bear on Godel's disjunction in these frameworks. The contributions in this volume have been written by world leading experts in the field.
The Logical Foundations of Mathematics William S. Hatcher 2014-05-09 The Logical Foundations of Mathematics offers a study of the foundations of mathematics, stressing comparisons between and critical analyses of the major non-constructive foundational systems. The position of constructivism within the spectrum of foundational philosophies is discussed, along with the exact relationship between topos theory and set theory. Comprised of eight chapters, this book begins with an introduction to first-order logic. In particular, two complete systems of axioms and rules for the first-order predicate calculus are given, one for efficiency in proving metatheorems, and the other, in a "natural

deduction" style, for presenting detailed formal proofs. A somewhat novel feature of this framework is a full semantic and syntactic treatment of variable-binding term operators as primitive symbols of logic. Subsequent chapters focus on the origin of modern foundational studies; Gottlob Frege's formal system intended to serve as a foundation for mathematics and its paradoxes; the theory of types; and the Zermelo-Fraenkel set theory. David Hilbert's program and Kurt Gödel's incompleteness theorems are also examined, along with the foundational systems of W. V. Quine and the relevance of categorical algebra for foundations. This monograph will be of interest to students, teachers, practitioners, and researchers in mathematics.

Gödel '96 Petr Hájek 2017-03-02 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 sixth publication in the Lecture Notes in Logic series, collects the proceedings of the conference 'Logical Foundations of Mathematics, Computer Science, and Physics - Kurt Gödel's Legacy', held in Brno, Czech Republic, on the 90th anniversary of Gödel's birth. The broad range of speakers who participated in this event affirms the continuing importance of Gödel's work in logic, physics, and the philosophy and foundations of mathematics and computer science. The papers in this volume range over all these topics and contribute to our present understanding of them.

After Gödel Richard L. Tieszen 2011-05-05 Richard Tieszen analyzes, develops, and defends the writings of Kurt Gödel (1906-1978) on the philosophy and foundations of mathematics and logic. Gödel's relation to the work of Plato, Leibniz, Husserl, and Kant is examined, and a new type of platonic rationalism that requires rational intuition, called 'constituted platonism', is proposed.

Logic and Combinatorics Stephen George Simpson 1987 In recent years, several remarkable results have shown that certain theorems of finite combinatorics are unprovable in certain logical systems. These developments have been instrumental in stimulating research in both areas, with the interface between logic and combinatorics being especially important because of its relation to crucial issues in the foundations of mathematics which were raised by the work of Kurt Godel. Because of the diversity of the lines of research that have begun to shed light on these issues, there was a need for a comprehensive overview which would tie the lines together. This volume fills that need by presenting a balanced mixture of high quality expository and research articles that were presented at the August 1985 AMS-IMS-SIAM Joint Summer Research Conference, held at Humboldt State University in Arcata, California.With an introductory survey to put the works into an appropriate context, the collection consists of papers dealing with various aspects of 'unprovable theorems and fast-growing functions'. Among the topics addressed are: ordinal notations, the dynamical systems approach to Ramsey theory, Hindman's finite sums theorem and related ultrafilters, well quasiordering theory, uncountable combinatorics, nonstandard models of set theory, and a length-of-proof analysis of Godel's incompleteness theorem. Many of the articles bring the reader to the frontiers of research in this area, and most assume familiarity with combinatorics and/or mathematical logic only at the senior undergraduate or first-year graduate level.

Incompleteness: The Proof and Paradox of Kurt Gödel (Great Discoveries) Rebecca Goldstein 2006-02-17 A portrait of the eminent twentieth-century mathematician discusses his theorem of incompleteness, relationships with such contemporaries as Albert Einstein, and untimely death as a result of mental instability and self-starvation.

Principia Mathematica Alfred North Whitehead 1927 Principia Mathematica was first published in 1910-13; this is the ninth impression of the second edition of 1925-7. The Principia has long been recognised as one of the intellectual landmarks of the century. It was the first book to show clearly the close relationship between mathematics and formal logic. Starting from a minimal number of axioms, Whitehead and Russell

display the structure of both kinds of thought. No other book has had such an influence on the subsequent history of mathematical philosophy.
Gödel '96 Petr Hájek 2016 Proceedings of the conference 'Logical Foundations of Mathematics, Computer Science, and Physics - Kurt Gödel's Legacy', held in 1996
Goedel's Way Gregory Chaitin 2011-10-14 Kurt Gödel (1906-1978) was an Austrian-American mathematician, who is best known for his incompleteness theorems. He was the greatest mathematical logician of the 20th century, with his contributions extending to Einstein's general relativity, as he proved that Einstein's theory allows for time machines. The Gödel incompleteness theorem - the usual formal mathematical systems cannot prove nor disprove all true mathematical sentences - is frequently presented in textbooks as something that happens in the rarefied realms of mathematical logic, and that has nothing to do with the real world. Practice shows the contrary though; one can demonstrate the validity of the phenomenon in various areas, ranging from chaos theory and physics to economics and even ecology. In this lively treatise, based on Chaitin's groundbreaking work and on the da Costa-Doria results in physics, ecology, economics and computer science, the authors show that the Gödel incompleteness phenomenon can directly bear on the practice of science and perhaps on our everyday life. This accessible book gives a new, detailed and elementary explanation of the Gödel incompleteness theorems and presents the Chaitin results and their relation to the da Costa-Doria results, which are given in full, but with no technicalities. Besides theory, the historical report and personal stories about the main character and on this book's writing process, make it appealing leisure reading for those interested in mathematics, logic, physics, philosophy and computer sciences. See also: http://www.youtube.com/watch?v=REy9noY5Sg8
Incompleteness: The Proof and Paradox of Kurt Gödel (Great Discoveries) Rebecca Goldstein 2006-02-17 "A gem…An unforgettable account of one of the great moments in the history of human thought." —Steven Pinker Probing the life and work of Kurt Gödel, Incompleteness indelibly portrays the tortured genius whose vision rocked the stability of mathematical reasoning—and brought him to the edge of madness.
Logical Dilemmas John Dawson 2005-06-06 This authoritative biography of Kurt Goedel relates the life of this most important logician of our time to the development of the field. Goedel's seminal achievements that changed the perception and foundations of mathematics are explained in the context of his life from the turn of the century Austria to the Institute for Advanced Study in Princeton.
Foundations of Mathematics; Symposium Papers Commemorating the Sixtieth Birthday of Kurt Godel. Edited by Jack J. Bulloff, Thomas C. Holyoke (And) S.W. Hahn 1969
Journey to the Edge of Reason Stephen Budiansky 2021-05-11 A remarkable account of the brilliant, troubled mathematician and philosopher Kurt Gödel. From his famous Incompleteness Theorem, which shook the foundations of mathematical truth, to his perilous escape from Nazi Vienna, this book weaves together his creative genius, mental illness, and idealism in the face of adversity.
Kurt Gödel and the Foundations of Mathematics Matthias Baaz 2011 "This volume commemorates the life, work, and foundational views of Kurt Gödel (1906-1978), most famous for his hallmark works on the completeness of first-order logic, the incompleteness of number theory, and the consistency - with the other widely accepted axioms of set theory - of the axiom of choice and of the generalized continuum hypothesis. It explores current research, advances, and ideas for future directions not only in the foundations of mathematics and logic, but also in the fields of computer science, artificial intelligence, physics, cosmology, philosophy, theology, and the history of science. The discussion is supplemented by personal reflections from several scholars who knew Gödel personally, providing some interesting insights into his life. By putting his ideas and life's work into the context of current thinking and perceptions, this book will extend the impact of Gödel's fundamental

work in mathematics, logic, philosophy, and other disciplines for future generations of researchers"--

In the Light of Logic Solomon Feferman 1998 In this collection of essays written over a period of twenty years, Solomon Feferman explains advanced results in modern logic and employs them to cast light on significant problems in the foundations of mathematics. Most troubling among these is the revolutionary way in which Georg Cantor elaborated the nature of the infinite, and in doing so helped transform the face of twentieth-century mathematics. Feferman details the development of Cantorian concepts and the foundational difficulties they engendered. He argues that the freedom provided by Cantorian set theory was purchased at a heavy philosophical price, namely adherence to a form of mathematical platonism that is difficult to support. Beginning with a previously unpublished lecture for a general audience, Deciding the Undecidable, Feferman examines the famous list of twenty-three mathematical problems posed by David Hilbert, concentrating on three problems that have most to do with logic. Other chapters are devoted to the work and thought of Kurt Gödel, whose stunning results in the 1930s on the incompleteness of formal systems and the consistency of Cantors continuum hypothesis have been of utmost importance to all subsequent work in logic. Though Gödel has been identified as the leading defender of set-theoretical platonism, surprisingly even he at one point regarded it as unacceptable. In his concluding chapters, Feferman uses tools from the special part of logic called proof theory to explain how the vast part--if not all--of scientifically applicable mathematics can be justified on the basis of purely arithmetical principles. At least to that extent, the question raised in two of the essays of the volume, Is Cantor Necessary?, is answered with a resounding no. This volume of important and influential work by one of the leading figures in logic and the foundations of mathematics is essential reading for anyone interested in these subjects.

Practical Foundations of Mathematics Paul Taylor 1999-05-13 This book is about the basis of mathematical reasoning both in pure mathematics itself (particularly algebra and topology) and in computer science (how and what it means to prove correctness of programs). It contains original material and original developments of standard material, so it is also for professional researchers, but as it deliberately transcends disciplinary boundaries and challenges many established attitudes to the foundations of mathematics, the reader is expected to be open minded about these things.

Kurt Gödel and the Foundations of Mathematics Matthias Baaz 2011-06-06 This volume commemorates the life, work and foundational views of Kurt Gödel (1906–78), most famous for his hallmark works on the completeness of first-order logic, the incompleteness of number theory, and the consistency - with the other widely accepted axioms of set theory - of the axiom of choice and of the generalized continuum hypothesis. It explores current research, advances and ideas for future directions not only in the foundations of mathematics and logic, but also in the fields of computer science, artificial intelligence, physics, cosmology, philosophy, theology and the history of science. The discussion is supplemented by personal reflections from several scholars who knew Gödel personally, providing some interesting insights into his life. By putting his ideas and life's work into the context of current thinking and perceptions, this book will extend the impact of Gödel's fundamental work in mathematics, logic, philosophy and other disciplines for future generations of researchers.

Gödel 96: Logical Foundations of Mathematics, Computer Science, and Physics Petr Hájek 2001-03-26 This volume contains the proceedings of the conference Logical Foundations of Mathematics, Computer Science, and Physics-Kurt Gödel's Legacy, held in Brno, Czech Republic on the 90th anniversary of his birth. The wide and continuing importance of Gödel s work in the logical foundations of mathematics, computer science, and physics is confirmed by the broad range of speakers who participated in making this gathering a scientific event.

Kurt Gödel Solomon Feferman 2010-04-19 Kurt Gödel (1906–1978) did groundbreaking work that transformed logic and other important

aspects of our understanding of mathematics, especially his proof of the incompleteness of formalized arithmetic. This book on different aspects of his work and on subjects in which his ideas have contemporary resonance includes papers from a May 2006 symposium celebrating Gödel's centennial as well as papers from a 2004 symposium. Proof theory, set theory, philosophy of mathematics, and the editing of Gödel's writings are among the topics covered. Several chapters discuss his intellectual development and his relation to predecessors and contemporaries such as Hilbert, Carnap, and Herbrand. Others consider his views on justification in set theory in light of more recent work and contemporary echoes of his incompleteness theorems and the concept of constructible sets.

Kurt Gödel Francisco Rodriguez-Consuegra 1995-12-01 Kurt Gödel, together with Bertrand Russell, is the most important name in logic, and in the foundations and philosophy of mathematics of this century. However, unlike Russel, Gödel the mathematician published very little apart from his well-known writings in logic, metamathematics and set theory. Fortunately, Gödel the philosopher, who devoted more years of his life to philosophy than to technical investigation, wrote hundreds of pages on the philosophy of mathematics, as well as on other fields of philosophy. It was only possible to learn more about his philosophical works after the opening of his literary estate at Princeton a decade ago. The goal of this book is to make available to the scholarly public solid reconstructions and editions of two of the most important essays which Gödel wrote on the philosophy of mathematics. The book is divided into two parts. The first provides the reader with an incisive historico-philosophical introduction to Gödel's technical results and philosophical ideas. Written by the Editor, this introductory apparatus is not only devoted to the manuscripts themselves but also to the philosophical context in which they were written. The second contains two of Gödel's most important and fascinating unpublished essays: 1) the Gibbs Lecture ("Some basic theorems on the foundations of mathematics and their philosophical implications", 1951); and 2) two of the six versions of the essay which Gödel wrote for the Carnap volume of the Schilpp series The Library of Living Philosophers ("Is mathematics syntax of language?", 1953-1959).

Gödel '96 Petr Hajek 1996-07-12 This is a proceedings volume of the conference celebrating the 90th anniversary of the birth of Kurt Goedel. The conference has been recognized as an ASL sponsored meeting. Invited papers and contributed papers concern mainly mathematical logic but also philosophy of mathematics, computer science and physics and are devoted to topics related to Goedel's work and reflect the present state of knowledge domains deeply influenced by Goedel.

The Foundations of Mathematics and Other Logical Essays Frank Plumpton Ramsey 2000 First published in 2000. Routledge is an imprint of Taylor & Francis, an informa company.

Godel's Theorem in Focus S.G. Shanker 2012-08-21 A layman's guide to the mechanics of Gödel's proof together with a lucid discussion of the issues which it raises. Includes an essay discussing the significance of Gödel's work in the light of Wittgenstein's criticisms.

Publications 1929-1936 Kurt Gödel 1986

Relational Mathematics Gunther Schmidt 2011 A modern, comprehensive 2010 overview providing an easy introduction for applied scientists who are not versed in mathematics.

Bemerkungen Über Die Grundlagen Der Mathematik Ludwig Wittgenstein 1972

Foundations of mathematics: symposium papers commemorating the sixtieth birthday of Kurt Godel, ed Jack J. Bulloff

Kurt Gödel: Collected Works: Volume III Kurt Gödel 1986 Kurt Gödel was the greatest logician of this century. This third volume of his collected works consists of previously unpublished material, both essays and lectures.

Set Theory, Arithmetic, and Foundations of Mathematics Juliette Kennedy 2011-09-01 This collection of papers from various areas of

mathematical logic showcases the remarkable breadth and richness of the field. Leading authors reveal how contemporary technical results touch upon foundational questions about the nature of mathematics. Highlights of the volume include: a history of Tennenbaum's theorem in arithmetic; a number of papers on Tennenbaum phenomena in weak arithmetics as well as on other aspects of arithmetics, such as interpretability; the transcript of Gödel's previously unpublished 1972–1975 conversations with Sue Toledo, along with an appreciation of the same by Curtis Franks; Hugh Woodin's paper arguing against the generic multiverse view; Anne Troelstra's history of intuitionism through 1991; and Aki Kanamori's history of the Suslin problem in set theory. The book provides a historical and philosophical treatment of particular theorems in arithmetic and set theory, and is ideal for researchers and graduate students in mathematical logic and philosophy of mathematics.
Gödel's Theorem Torkel Franzén 2005-06-06 "Among the many expositions of Gödel's incompleteness theorems written for non-specialists, this book stands apart. With exceptional clarity, Franzén gives careful, non-technical explanations both of what those theorems say and, more importantly, what they do not. No other book aims, as his does, to address in detail the misunderstandings and abuses of the incompleteness theorems that are so rife in popular discussions of their significance. As an antidote to the many spurious appeals to incompleteness in theological, anti-mechanist and post-modernist debates, it is a valuable addition to the literature." --- John W. Dawson, author of Logical Dilemmas: The Life and Work of Kurt Gödel
Can Mathematics Be Proved Consistent? Jan von Plato 2020-07-24 Kurt Gödel (1906–1978) shook the mathematical world in 1931 by a result that has become an icon of 20th century science: The search for rigour in proving mathematical theorems had led to the formalization of mathematical proofs, to the extent that such proving could be reduced to the application of a few mechanical rules. Gödel showed that whenever the part of mathematics under formalization contains elementary arithmetic, there will be arithmetical statements that should be formally provable but aren't. The result is known as Gödel's first incompleteness theorem, so called because there is a second incompleteness result, embodied in his answer to the question "Can mathematics be proved consistent?" This book offers the first examination of Gödel's preserved notebooks from 1930, written in a long-forgotten German shorthand, that show his way to the results: his first ideas, how they evolved, and how the jewel-like final presentation in his famous publication On formally undecidable propositions was composed.The book also contains the original version of Gödel's incompleteness article, as handed in for publication with no mentioning of the second incompleteness theorem, as well as six contemporary lectures and seminars Gödel gave between 1931 and 1934 in Austria, Germany, and the United States. The lectures are masterpieces of accessible presentations of deep scientific results, readable even for those without special mathematical training, and published here for the first time.
Consistency of the Continuum Hypothesis. (AM-3), Volume 3 Kurt Gödel 2016-03-02 Kurt Gödel, mathematician and logician, was one of the most influential thinkers of the twentieth century. Gödel fled Nazi Germany, fearing for his Jewish wife and fed up with Nazi interference in the affairs of the mathematics institute at the University of Göttingen. In 1933 he settled at the Institute for Advanced Study in Princeton, where he joined the group of world-famous mathematicians who made up its original faculty. His 1940 book, better known by its short title, The Consistency of the Continuum Hypothesis, is a classic of modern mathematics. The continuum hypothesis, introduced by mathematician George Cantor in 1877, states that there is no set of numbers between the integers and real numbers. It was later included as the first of mathematician David Hilbert's twenty-three unsolved math problems, famously delivered as a manifesto to the field of mathematics at the International Congress of Mathematicians in Paris in 1900. In The Consistency of the Continuum Hypothesis Gödel set forth his proof for this problem. In 1999, Time magazine ranked him higher than fellow scientists Edwin Hubble, Enrico Fermi, John Maynard Keynes, James Watson,

Francis Crick, and Jonas Salk. He is most renowned for his proof in 1931 of the 'incompleteness theorem,' in which he demonstrated that there are problems that cannot be solved by any set of rules or procedures. His proof wrought fruitful havoc in mathematics, logic, and beyond.
Kurt Godel and the Foundations of Mathematics Matthias Baaz 2011 This volume commemorates the life, work and foundational views of Kurt Gödel (1906-1978), most famous for his hallmark works on the completeness of first-order logic, the incompleteness of number theory, and the consistency - with the other widely accepted axioms of set theory - of the axiom of choice and of the generalized continuum hypothesis. It explores current research, advances and ideas for future directions not only in the foundations of mathematics and logic, but also in the fields of computer science, artificial intelligence, physics, cosmology, philosophy, theology and the history of science. The discussion is supplemented by personal reflections from several scholars who knew Gödel personally, providing some interesting insights into his life. By putting his ideas and life's work into the context of current thinking and perceptions, this book will extend the impact of Gödel's fundamental work in mathematics, logic, philosophy and other disciplines for future generations of researchers.
Godel's Proof Ernest Nagel 2012-11-12 The first book to present a readable explanation of Godel's theorem to both scholars and non-specialists, this is a gripping combination of science and accessibility, offering those with a taste for logic and philosophy the chance to satisfy their intellectual curiosity.
Kurt Gödel: Collected Works: Volume I Kurt Gödel 1986-05-22 Kurt Gödel (1906 - 1978) was the most outstanding logician of the twentieth century, famous for his hallmark works on the completeness of logic, the incompleteness of number theory, and the consistency of the axiom of choice and the continuum hypothesis. He is also noted for his work on constructivity, the decision problem, and the foundations of computability theory, as well as for the strong individuality of his writings on the philosophy of mathematics. He is less well known for his discovery of unusual cosmological models for Einstein's equations, in theory permitting time travel into the past. The Collected Works is a landmark resource that draws together a lifetime of creative thought and accomplishment. The first two volumes were devoted to Gödel's publications in full (both in original and translation), and the third volume featured a wide selection of unpublished articles and lecture texts found in Gödel's Nachlass. These long-awaited final two volumes contain Gödel's correspondence of logical, philosophical, and scientific interest. Volume IV covers A to G, with H to Z in volume V; in addition, Volume V contains a full inventory of Gödel's Nachlass. L All volumes include introductory notes that provide extensive explanatory and historical commentary on each body of work, English translations of material originally written in German (some transcribed from the Gabelsberger shorthand), and a complete bibliography of all works cited. Kurt Gödel: Collected Works is designed to be useful and accessible to as wide an audience as possible without sacrificing scientific or historical accuracy. The only comprehensive edition of Gödel's work available, it will be an essential part of the working library of professionals and students in logic, mathematics, philosophy, history of science, and computer science and all others who wish to be acquainted with one of the great minds of the twentieth century.