Alexandre Grothendieck A Mathematical Portrait English And French Edition

An Invitation to Applied Category TheoryTopics in Cohomological Studies of Algebraic VarietiesMath on TrialTool and ObjectThe Abel Prize 2013-2017Motivic Homotopy TheoryStudies in the History of Indian MathematicsLimitless Minds: Interviews with MathematiciansHaving a Word with Angus GrahamThe Metric Theory of Tensor ProductsAlgebraic GeometryGenius At PlayLipman Bers, a Life in MathematicsWhen Einstein Walked with GödelDifferential Geometry Inspired by String TheoryDefying HitlerMathematics without ApologiesThe Big QuestionsFormal Geometry and Bordism OperationsThe Geometry of SchemesHomotopy Theory: Tools and ApplicationsMathematics and Theoretical PhysicsGrothendieck-Serre CorrespondenceLove and MathThe K-bookEtale HomotopyThe Mathematician's BrainThe Artist and the MathematicianThe Intersection of History and MathematicsAlexandre GrothendieckElements of the History of MathematicsThe Shaping of Arithmetic after C.F. Gauss's Disquisitiones ArithmeticaeMathematicians of the World, Unite!Introduction to Grothendieck Duality TheoryLoving and Hating MathematicsThe Heart of CohomologyFundamental Algebraic GeometryThe Mathematics DevotionalGeometric Galois Actions: Volume 2, The Inverse Galois Problem, Moduli Spaces and Mapping Class GroupsMathematics without Apologies

An Invitation to Applied Category Theory

The articles in this volume study various cohomological aspects of algebraic varieties: - characteristic classes of singular varieties; - geometry of flag varieties; - cohomological computations for homogeneous spaces; - K-theory of algebraic varieties; - quantum cohomology and Gromov-Witten theory. The main purpose is to give comprehensive introductions to the above topics through a series of "friendly" texts starting from a very elementary level and ending with the discussion of current research. In the articles, the reader will find classical results and methods as well as new ones. Numerous examples will help to understand the mysteries of the cohomological theories presented. The book will be a useful guide to research in the above-mentioned areas. It is adressed to researchers and graduate students in algebraic geometry, algebraic topology, and singularity theory, as well as to mathematicians interested in homogeneous varieties and symmetric functions. Most of the material exposed in the volume has not appeared in books before. Contributors: Paolo Aluffi Michel Brion Anders Skovsted Buch Haibao Duan Ali Ulas Ozgur Kisisel Piotr Pragacz Jörg Schürmann Marek Szyjewski Harry Tamvakis

Topics in Cohomological Studies of Algebraic Varieties

Every mathematician is a person with a story. Limitless Minds tells those stories in an engaging way by featuring interviews with twelve leading mathematicians. They were invited to answer some key questions such as: Who and what were the influences that pointed them towards mathematics? Why do mathematicians devote their lives to discovering new mathematics? How do they see mathematics evolving in the future? The book, written in an accessible style and enriched by dozens of images, offers a rare insight into the minds of mathematicians, provided in their own words. It will enlighten and inspire readers about the lives, passions, and discoveries of mathematicians.

Math on Trial

Famed mathematician Alexander Grothendieck, in his Resume, set forth his plan for the study of the finer structure of Banach spaces. He used tensor products as a foundation upon which he built the classes of operators most important to the study of Banach spaces and established the importance of the "local" theory in the study of these operators and the spaces they act upon. When Lintenstrauss and Pelczynski addressed his work at the rebirth of Banach space theory, they shed his Fundamental Inequality in the trappings of operator ideals by shedding the tensorial formulation. The authors of this book, however, feel that there is much of value in Grothendieck's original formulations in the Resume and here endeavor to "expose the Resume" by presenting most of Grothendieck's arguments using the mathematical tools that were available to him at the time.

Tool and Object

Each volume of Nicolas Bourbakis well-known work, The Elements of Mathematics, contains a section or chapter devoted to the history of the subject. This book collects together those historical segments with an emphasis on the emergence, development, and interaction of the leading ideas of the mathematical theories presented in the Elements. In particular, the book provides a highly readable account of the evolution of algebra, geometry, infinitesimal calculus, and of the concepts of number and structure, from the Babylonian era through to the 20th century.

The Abel Prize 2013-2017

Mathematics is often thought of as the coldest expression of pure reason. But few subjects provoke hotter emotions--and inspire more love and hatred--than mathematics. And although math is frequently idealized as floating above the messiness of human life, its story is nothing if not human; often, it is all too human. Loving and Hating Mathematics is about the hidden human, emotional, and social forces that shape mathematics and affect the experiences of students and mathematicians. Written in a lively, accessible style, and filled with gripping stories and anecdotes, Loving and Hating

Mathematics brings home the intense pleasures and pains of mathematical life. These stories challenge many myths, including the notions that mathematics is a solitary pursuit and a "young man's game," the belief that mathematicians are emotionally different from other people, and even the idea that to be a great mathematician it helps to be a little bit crazy. Reuben Hersh and Vera John-Steiner tell stories of lives in math from their very beginnings through old age, including accounts of teaching and mentoring, friendships and rivalries, love affairs and marriages, and the experiences of women and minorities in a field that has traditionally been unfriendly to both. Included here are also stories of people for whom mathematics has been an immense solace during times of crisis, war, and even imprisonment--as well as of those rare individuals driven to insanity and even murder by an obsession with math. This is a book for anyone who wants to understand why the most rational of human endeavors is at the same time one of the most emotional.

Motivic Homotopy Theory

This volume contains the proceedings of the conference Homotopy Theory: Tools and Applications, in honor of Paul Goerss's 60th birthday, held from July 17–21, 2017, at the University of Illinois at Urbana-Champaign, Urbana, IL. The articles cover a variety of topics spanning the current research frontier of homotopy theory. This includes articles concerning both computations and the formal theory of chromatic homotopy, different aspects of equivariant homotopy theory and K-theory, as well as articles concerned with structured ring spectra, cyclotomic spectra associated to perfectoid fields, and the theory of higher homotopy operations.

Studies in the History of Indian Mathematics

The book is part biography and part collection of mathematical essays that gives the reader a perspective on the evolution of an interesting mathematical life. It is all about Lipman Bers, a giant in the mathematical world who lived in turbulent and exciting times. It captures the essence of his mathematics, a development and transition from applied mathematics to complex analysis--quasiconformal mappings and moduli of Riemann surfaces--and the essence of his personality, a progression from a young revolutionary refugee to an elder statesman in the world of mathematics and a fighter for global human rights and the end of political torture. The book contains autobiographical material and short reprints of his work. The main content is in the exposition of his research contributions, sometimes with novel points of view, by students, grand-students, and colleagues. The research described was fundamental to the growth of a central part of 20th century mathematics that, now in the 21st century, is in a healthy state with much current interest and activity. The addition of personal recollections, professional tributes, and photographs yields a picture of a man, his personal and professional family, and his time.

Limitless Minds: Interviews with Mathematicians

This is the fifth volume in a series providing surveys of differential geometry. It addresses: K3 surfaces and strong duality; symplectic geometry and Velinde formulas; counting curves on irrational surfaces; differential equations from mirror symmetry; and more.

Having a Word with Angus Graham

An insightful reflection on the mathematical soul What do pure mathematicians do, and why do they do it? Looking beyond the conventional answers—for the sake of truth, beauty, and practical applications—this book offers an eclectic panorama of the lives and values and hopes and fears of mathematicians in the twenty-first century, assembling material from a startlingly diverse assortment of scholarly, journalistic, and pop culture sources. Drawing on his personal experiences and obsessions as well as the thoughts and opinions of mathematicians from Archimedes and Omar Khayyám to such contemporary giants as Alexander Grothendieck and Robert Langlands, Michael Harris reveals the charisma and romance of mathematics as well as its darker side. In this portrait of mathematics as a community united around a set of common intellectual, ethical, and existential challenges, he touches on a wide variety of questions, such as: Are mathematicians to blame for the 2008 financial crisis? How can we talk about the ideas we were born too soon to understand? And how should you react if you are asked to explain number theory at a dinner party? Disarmingly candid, relentlessly intelligent, and richly entertaining, Mathematics without Apologies takes readers on an unapologetic guided tour of the mathematical life, from the philosophy and sociology of mathematics to its reflections in film and popular music, with detours through the mathematical and mystical traditions of Russia, India, medieval Islam, the Bronx, and beyond.

The Metric Theory of Tensor Products

Category theory is unmatched in its ability to organize and layer abstractions and to find commonalities between structures of all sorts. No longer the exclusive preserve of pure mathematicians, it is now proving itself to be a powerful tool in science, informatics, and industry. By facilitating communication between communities and building rigorous bridges between disparate worlds, applied category theory has the potential to be a major organizing force. This book offers a self-contained tour of applied category theory. Each chapter follows a single thread motivated by a real-world application and discussed with category-theoretic tools. We see data migration as an adjoint functor, electrical circuits in terms of monoidal categories and operads, and collaborative design via enriched profunctors. All the relevant category theory, from simple to sophisticated, is introduced in an accessible way with many examples and exercises, making this an ideal guide even for those without experience of university-level mathematics.

Algebraic Geometry

The book presents the winners of the Abel Prize in mathematics for the period 2013–17: Pierre Deligne (2013); Yakov G. Sinai (2014); John Nash Jr. and Louis Nirenberg (2015); Sir Andrew Wiles (2016); and Yves Meyer (2017). The profiles feature autobiographical information as well as a scholarly description of each mathematician's work. In addition, each profile contains a Curriculum Vitae, a complete bibliography, and the full citation from the prize committee. The book also includes photos for the period 2003–2017 showing many of the additional activities connected with the Abel Prize. As an added feature, video interviews with the Laureates as well as videos from the prize ceremony are provided at an accompanying website (http://extras.springer.com/). This book follows on The Abel Prize: 2003-2007. The First Five Years (Springer, 2010) and The Abel Prize 2008-2012 (Springer 2014), which profile the work of the previous Abel Prize winners.

Genius At Play

The series is aimed specifically at publishing peer reviewed reviews and contributions presented at workshops and conferences. Each volume is associated with a particular conference, symposium or workshop. These events cover various topics within pure and applied mathematics and provide up-to-date coverage of new developments, methods and applications.

Lipman Bers, a Life in Mathematics

Alexander Grothendieck introduced many concepts into algebraic geometry; they turned out to be astoundingly powerful and productive and truly revolutionized the subject. Grothendieck sketched his new theories in a series of talks at the Seminaire Bourbaki between 1957 and 1962 and collected his write-ups in a volume entitled ``Fondements de la Geometrie Algebrique,'' known as FGA. Much of FGA is now common knowledge; however, some of FGA is less well known, and its full scope is familiar to few. The present book resulted from the 2003 ``Advanced School in Basic Algebraic Geometry'' at the ICTP in Trieste, Italy. The book aims to fill in Grothendieck's brief sketches. There are four themes: descent theory, Hilbert and Quot schemes, the formal existence theorem, and the Picard scheme. Most results are proved in full detail; furthermore, newer ideas are introduced to promote understanding, and many connections are drawn to newer developments. The main prerequisite is a thorough acquaintance with basic scheme theory. Thus this book is a valuable resource for anyone doing algebraic geometry.

When Einstein Walked with Gödel

An introduction to abstract algebraic geometry, with the only prerequisites being results from commutative algebra, which are stated as needed, and some elementary topology. More than 400 exercises distributed throughout the book offer specific examples as well as more specialised topics not treated in the main text, while three appendices present brief accounts of some areas of current research. This book can thus be used as textbook for an introductory course in algebraic geometry following a basic graduate course in algebra. Robin Hartshorne studied algebraic geometry with Oscar Zariski and David Mumford at Harvard, and with J.-P. Serre and A. Grothendieck in Paris. He is the author of "Residues and Duality", "Foundations of Projective Geometry", "Ample Subvarieties of Algebraic Varieties", and numerous research titles.

Differential Geometry Inspired by String Theory

Since its publication, C.F. Gauss's Disquisitiones Arithmeticae (1801) has acquired an almost mythical reputation, standing as an ideal of exposition in notation, problems and methods; as a model of organisation and theory building; and as a source of mathematical inspiration. Eighteen authors - mathematicians, historians, philosophers - have collaborated in this volume to assess the impact of the Disquisitiones, in the two centuries since its publication.

Defying Hitler

Grothendieck's beautiful theory of schemes permeates modern algebraic geometry and underlies its applications to number theory, physics, and applied mathematics. This simple account of that theory emphasizes and explains the universal geometric concepts behind the definitions. In the book, concepts are illustrated with fundamental examples, and explicit calculations show how the constructions of scheme theory are carried out in practice.

Mathematics without Apologies

The Mathematician's Brain poses a provocative question about the world's most brilliant yet eccentric mathematical minds: were they brilliant because of their eccentricities or in spite of them? In this thought-provoking and entertaining book, David Ruelle, the well-known mathematical physicist who helped create chaos theory, gives us a rare insider's account of the celebrated mathematicians he has known-their quirks, oddities, personal tragedies, bad behavior, descents into madness, tragic ends, and the sublime, inexpressible beauty of their most breathtaking mathematical discoveries. Consider the case of British mathematician Alan Turing. Credited with cracking the German Enigma code during World War II and conceiving of the modern computer, he was convicted of "gross indecency" for a homosexual affair and died in 1954 after eating a cyanide-laced apple--his death was ruled a suicide, though rumors of assassination still linger. Ruelle holds nothing back in his revealing and deeply personal reflections on Turing and other fellow mathematicians, including Alexander Grothendieck,

René Thom, Bernhard Riemann, and Felix Klein. But this book is more than a mathematical tell-all. Each chapter examines an important mathematical idea and the visionary minds behind it. Ruelle meaningfully explores the philosophical issues raised by each, offering insights into the truly unique and creative ways mathematicians think and showing how the mathematical setting is most favorable for asking philosophical questions about meaning, beauty, and the nature of reality. The Mathematician's Brain takes you inside the world--and heads--of mathematicians. It's a journey you won't soon forget.

The Big Questions

An awesome, globe-spanning, and New York Times best-selling journey through the beauty and power of mathematics What if you had to take an art class in which you were only taught how to paint a fence? What if you were never shown the paintings of van Gogh and Picasso, weren't even told they existed? Alas, this is how math is taught, and so for most of us it becomes the intellectual equivalent of watching paint dry. In Love and Math, renowned mathematician Edward Frenkel reveals a side of math we've never seen, suffused with all the beauty and elegance of a work of art. In this heartfelt and passionate book, Frenkel shows that mathematics, far from occupying a specialist niche, goes to the heart of all matter, uniting us across cultures, time, and space. Love and Math tells two intertwined stories: of the wonders of mathematics and of one young man's journey learning and living it. Having braved a discriminatory educational system to become one of the twenty-first century's leading mathematicians, Frenkel now works on one of the biggest ideas to come out of math in the last 50 years: the Langlands Program. Considered by many to be a Grand Unified Theory of mathematics, the Langlands Program enables researchers to translate findings from one field to another so that they can solve problems, such as Fermat's last theorem, that had seemed intractable before. At its core, Love and Math is a story about accessing a new way of thinking, which can enrich our lives and empower us to better understand the world and our place in it. It is an invitation to discover the magic hidden universe of mathematics.

Formal Geometry and Bordism Operations

Winner of the 2017 JPBM Communications Award for Expository and Popular Books. "A delightful meta-biography--playful indeed--of a brilliant iconoclast." --James Gleick, author of The Information John Horton Conway is a singular mathematician with a lovely loopy brain. He is Archimedes, Mick Jagger, Salvador Dali, and Richard Feynman all rolled into one--he boasts a rock star's charisma, a slyly bent sense of humor, a polymath's promiscuous curiosity, and an insatiable compulsion to explain everything about the world to everyone in it. At Cambridge, Conway wrestled with "Monstrous Moonshine," discovered the aptly named surreal numbers, and invented the cult classic Game of Life--more than just a cool fad, Life demonstrates how simplicity generates complexity and provides an analogy for mathematics and the entire universe. As a "mathemagician" at Princeton, he used ropes, dice, pennies, coat hangers, even the occasional Slinky, as props to extend

his winning imagination and share his many nerdish delights. He granted Roberts full access to his idiosyncrasies and intellect both, though not without the occasional grumble: "Oh hell," he'd say. "You're not going to put that in the book. Are you?!?"

The Geometry of Schemes

The book is a bilingual (French and English) edition of the mathematical correspondence between A. Grothendieck and J-P. Serre. The original French text of 84 letters is supplemented here by the English translation, with French text printed on the left-hand pages and the corresponding English text printed on the right-hand pages. The book also includes several facsimiles of original letters. The letters presented in the book were mainly written between 1955 and 1965. During this period, algebraic geometry went through a remarkable transformation, and Grothendieck and Serre were among central figures in this process. The reader can follow the creation of some of the most important notions of modern mathematics, like sheaf cohomology, schemes, Riemann-Roch type theorems, algebraic fundamental group, motives. The letters also reflect the mathematical and political atmosphere of this period (Bourbaki, Paris, Harvard, Princeton, war in Algeria, etc.). Also included are a few letters written between 1984 and 1987. The letters are supplemented by J-P. Serre's notes, which give explanations, corrections, and references further results. The book should be useful to specialists in algebraic geometry, in history of mathematics, and to all mathematicians who want to understand how great mathematics is created.

Homotopy Theory: Tools and Applications

In the wrong hands, math can be deadly. Even the simplest numbers can become powerful forces when manipulated by journalists, politicians or other public figures, but in the case of the law your liberty—and your life—can depend on the right calculation. Math on Trial tells the story of ten trials in which mathematical arguments were used—and disastrously misused—as evidence. Despite years of math classes, most people (and most jurors) fail to detect even simple mathematical sophistry, resulting in such horrors as a medical expert's faulty calculation of probabilities providing the key evidence for a British mother's conviction for the murder of her two babies. The conviction was later overturned, but three years in prison took its toll—Sally Clark died of acute alcohol intoxication in March of 2007. Mathematicians Leila Schneps and Coralie Colmez use a wide range of examples, from a mid-19th-century dispute over wills that became a signal case in the forensic use of mathematics, to the conviction and subsequent exoneration of Amanda Knox, to show how the improper application of mathematical concepts can mean the difference between walking free and life in prison. The cases discussed include: -The Case of Amanda Knox (How a judge's denial of a second DNA test may have destroyed a chance to reveal the truth about Meredith Kercher's murder) -The Case of Joe Sneed (How a fabricated probability framed a son for his parents' grisly killing) -The Case of Sally Clark (How multiplying non-independent probabilities landed an innocent mother in jail for

the murder of her children) -The Case of Janet Collins (How unjustified estimates combined with a miscalculated probability convicted an innocent couple of violent robbery) A colorful narrative of mathematical abuse featuring such characters as Charles Ponzi, Alfred Dreyfus, Hetty Green, and Oliver Wendell Holmes, Math on Trial shows that legal expertise isn't everything when it comes to proving a man innocent.

Mathematics and Theoretical Physics

Defying Hitler was written in 1939 and focuses on the year 1933, when, as Hitler assumed power, its author was a 25-year-old German law student, in training to join the German courts as a junior administrator. His book tries to answer two questions people have been asking since the end of World War II: "How were the Nazis possible?" and "Why did no one stop them?" Sebastian Haffner's vivid first-person account, written in real time and only much later discovered by his son, makes the rise of the Nazis psychologically comprehensible. "An astonishing memoir [a] masterpiece." — Gabriel Schoenfeld, The New York Times Book Review "A short, stabbing, brilliant book It is important, first, as evidence of what one intelligent German knew in the 1930s about the unspeakable nature of Nazism, at a time when the overwhelming majority of his countrymen claim to have know nothing at all. And, second, for its rare capacity to reawaken anger about those who made the Nazis possible." — Max Hastings, The Sunday Telegraph "Defying Hitler communicates one of the most profound and absolute feelings of exile that any writer has gotten between covers." — Charles Taylor, Salon "Sebastian Haffner was Germany's political conscience, but it is only now that we can read how he experienced the Nazi terror himself — that is a memoir of frightening relevance today." — Heinrich Jaenicke, Stern "The prophetic insights of a fairly young man help us understand the plight, as Haffner refers to it, of the non-Nazi German." — The Denver Post "Sebastian Haffner's Defying Hitler is a most brilliant and imaginative book — one of the most important books we have ever published." — Lord Weidenfeld

Grothendieck-Serre Correspondence

Delivers a broad, conceptual introduction to chromatic homotopy theory, focusing on contact with arithmetic and algebraic geometry.

Love and Math

Nicolas Bourbaki, whose mathematical publications began to appear in the late 1930s and continued to be published through most of the twentieth century, was a direct product as well as a major force behind an important revolution that took place in the early decades of the twentieth century that completely changed Western culture. Pure mathematics, the

area of Bourbaki's work, seems on the surface to be an abstract field of human study with no direct connection with the real world. In reality, however, it is closely intertwined with the general culture that surrounds it. Major developments in mathematics have often followed important trends in popular culture; developments in mathematics have acted as harbingers of change in the surrounding human culture. The seeds of change, the beginnings of the revolution that swept the Western world in the early decades of the twentieth century — both in mathematics and in other areas — were sown late in the previous century. This is the story both of Bourbaki and the world that created him in that time. It is the story of an elaborate intellectual joke — because Bourbaki, one of the foremost mathematicians of his day — never existed.

The K-book

This volume is the outcome of a seminar on the history of mathematics held at the Chennai Mathematical Institute during January-February 2008 and contains articles based on the talks of distinguished scholars both from the West and from India. The topics covered include: (1) geometry in the oulvasatras; (2) the origins of zero (which can be traced to ideas of lopa in Paoini's grammar); (3) combinatorial methods in Indian music (which were developed in the context of prosody and subsequently applied to the study of tonal and rhythmic patterns in music); (4) a cross-cultural view of the development of negative numbers (from Brahmagupta (c. 628 CE) to John Wallis (1685 CE); (5) Kunnaka, Bhavana and Cakravala (the techniques developed by Indian mathematicians for the solution of indeterminate equations); (6) the development of calculus in India (covering the millennium-long history of discoveries culminating in the work of the Kerala school giving a complete analysis of the basic calculus of polynomial and trigonometrical functions); (7) recursive methods in Indian mathematics (going back to Paoini's grammar and culminating in the recursive proofs found in the Malayalam text Yuktibhaua (1530 CE)); and (8) planetary and lunar models developed by the Kerala School of Astronomy. The articles in this volume cover a substantial portion of the history of Indian mathematics and astronomy. This book will serve the dual purpose of bringing to the international community a better perspective of the mathematical heritage of India and conveying the message that much work remains to be done, namely the study of many unexplored manuscripts still available in libraries in India and abroad.

Etale Homotopy

Provides an explanation of what made Alexandre Grothendieck the mathematician that he was. Thirteen articles written by people who knew him personally - some who even studied or collaborated with him over a period of many years - portray Grothendieck at work, explaining the nature of his thought through descriptions of his discoveries and contributions to various subjects, and with impressions, memories, anecdotes, and some biographical elements.

The Mathematician's Brain

This book surveys progress in the domains described in the hitherto unpublished manuscript "Esquisse d'un Programme" (Sketch of a Program) by Alexander Grothendieck. It will be of wide interest amongst workers in algebraic geometry, number theory, algebra and topology.

The Artist and the Mathematician

A year-long inspirational celebration of the beauty and wisdom of mathematics combines sage quotes by such thinkers as Pythagoras, Richard Feynman and Robert Heinlein with sumptuous images relating to the world of math.

The Intersection of History and Mathematics

Alexandre Grothendieck

Category theory is a general mathematical theory of structures and of structures of structures. It occupied a central position in contemporary mathematics as well as computer science. This book describes the history of category theory whereby illuminating its symbiotic relationship to algebraic topology, homological algebra, algebraic geometry and mathematical logic and elaboratively develops the connections with the epistemological significance.

Elements of the History of Mathematics

Informally, K-theory is a tool for probing the structure of a mathematical object such as a ring or a topological space in terms of suitably parameterized vector spaces and producing important intrinsic invariants which are useful in the study of algebr

The Shaping of Arithmetic after C.F. Gauss's Disquisitiones Arithmeticae

Critical reflections on the work of Angus Charles Graham, renowned Western scholar of Chinese philosophy and sinology. This volume engages with the works and ideas of Angus Charles Graham (1919⬚1991), one of the most prominent Western scholars of Chinese philosophy, at the twenty-fifth anniversary of his passing. Over a professional career of more than thirty years, Angus Graham produced an impressive amount of scholarship on a wide array of topics, ranging from Chinese

grammar and philology to poetry and philosophy. His combination of rigorous scholarship and philosophical originality has continued to inspire scholars to tackle related research topics, and in so doing, has required of them a response to his views. This book illustrates the range of scholarship still elaborating upon, disagreeing with, and reacting to Graham□s work on Chinese thought, philosophy, philology, and translation. □Graham□s prolific writings have shaped the field of Chinese philosophy for the last four decades. Taking stock of how much contemporary discourse on Chinese philosophy has been influenced by Graham□s works and how far it has come from Graham□s days, while suggesting possible future trajectories, is timely. In addition, some of the contributors□ accounts of their personal encounters with Graham give readers a rather intimate and fascinating portrayal of the man behind the ideas.□ □ Tao Jiang, coeditor of The Reception and Rendition of Freud in China: China□s Freudian Slip

Mathematicians of the World, Unite!

Introduction to Grothendieck Duality Theory

What do pure mathematicians do, and why do they do it? Looking beyond the conventional answers—for the sake of truth, beauty, and practical applications—this book offers an eclectic panorama of the lives and values and hopes and fears of mathematicians in the twenty-first century, assembling material from a startlingly diverse assortment of scholarly, journalistic, and pop culture sources. Drawing on his personal experiences and obsessions as well as the thoughts and opinions of mathematicians from Archimedes and Omar Khayyám to such contemporary giants as Alexander Grothendieck and Robert Langlands, Michael Harris reveals the charisma and romance of mathematics as well as its darker side. In this portrait of mathematics as a community united around a set of common intellectual, ethical, and existential challenges, he touches on a wide variety of questions, such as: Are mathematicians to blame for the 2008 financial crisis? How can we talk about the ideas we were born too soon to understand? And how should you react if you are asked to explain number theory at a dinner party? Disarmingly candid, relentlessly intelligent, and richly entertaining, Mathematics without Apologies takes readers on an unapologetic guided tour of the mathematical life, from the philosophy and sociology of mathematics to its reflections in film and popular music, with detours through the mathematical and mystical traditions of Russia, India, medieval Islam, the Bronx, and beyond.

Loving and Hating Mathematics

The Heart of Cohomology

This vividly illustrated history of the International Congress of Mathematicians — a meeting of mathematicians from around the world held roughly every four years — acts as a visual history of the 25 congresses held between 1897 and 2006, as well as a story of changes in the culture of mathematics over the past century. Because the congress is an international meeting, looking at its history allows us a glimpse into the effect of wars and strained relations between nations on the scientific community.

Fundamental Algebraic Geometry

If you have not heard about cohomology, The Heart of Cohomology may be suited for you. The book gives Fundamental notions in cohomology for examples, functors, representable functors, Yoneda embedding, derived functors, spectral sequences, derived categories are explained in elementary fashion. Applications to sheaf cohomology. In addition, the book examines cohomological aspects of D-modules and of the computation of zeta functions of the Weierstrass family.

The Mathematics Devotional

This book is based on lectures given at a summer school on motivic homotopy theory at the Sophus Lie Centre in Nordfjordeid, Norway, in August 2002. Aimed at graduate students in algebraic topology and algebraic geometry, it contains background material from both of these fields, as well as the foundations of motivic homotopy theory. It will serve as a good introduction as well as a convenient reference for a broad group of mathematicians to this important and fascinating new subject. Vladimir Voevodsky is one of the founders of the theory and received the Fields medal for his work, and the other authors have all done important work in the subject.

Geometric Galois Actions: Volume 2, The Inverse Galois Problem, Moduli Spaces and Mapping Class Groups

From Jim Holt, the New York Times bestselling author of Why Does the World Exist?, comes an entertaining and accessible guide to the most profound scientific and mathematical ideas of recent centuries in When Einstein Walked with Gödel: Excursions to the Edge of Thought. Does time exist? What is infinity? Why do mirrors reverse left and right but not up and down? In this scintillating collection, Holt explores the human mind, the cosmos, and the thinkers who've tried to encompass the latter with the former. With his trademark clarity and humor, Holt probes the mysteries of quantum mechanics, the quest for the foundations of mathematics, and the nature of logic and truth. Along the way, he offers intimate biographical sketches of celebrated and neglected thinkers, from the physicist Emmy Noether to the computing pioneer Alan Turing and the discoverer of fractals, Benoit Mandelbrot. Holt offers a painless and playful introduction to

many of our most beautiful but least understood ideas, from Einsteinian relativity to string theory, and also invites us to consider why the greatest logician of the twentieth century believed the U.S. Constitution contained a terrible contradiction—and whether the universe truly has a future.

Mathematics without Apologies

What's wrong with stealing? What's the best way to blood test a pot-bellied pig? Should we tolerate intolerance? In the wake of his enormously popular books, The Armchair Economistand More Sex is Safer Sex, Steven Landsburg uses concepts from maths, economics and physics to address the big questions in philosophy: Where does knowledge come from? What's the difference between right and wrong? Do our beliefs matter? Is it possible to know everything? Provocative, utterly entertaining and always surprising, The Big Questions challenges readers to re-evaluate their most fundamental beliefs and reveals the relationship between the loftiest philosophical quests and our everyday lives.

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