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*Challenges in Geometry Concepts in Competitive Mathematics* [The William Lowell Putnam Mathematical Competition](#) **Problem-Solving Strategies** *Modern Mathematics A Friendly Mathematics Competition* [University of Toronto Mathematics Competition \(2001-2015\)](#) **Math Practice Simplified: Primary Concepts (Book B)** [Proofs in Competition Math: Volume 1](#) *A New History of Greek Mathematics* **Problem Solving Via the AMC (Australian Mathematics Competition)** [Mathematics at the Meridian](#) **Oxford's Savilian Professors of Geometry** **Critical Mathematics Education: Past, Present and Future** **Mathematics and Its History** [Mathematics: A Concise History and Philosophy](#) **Purple Comet! Math Meet** **The William Lowell Putnam Mathematical Competition 1985-2000: Problems, Solutions, and Commentary** [The History of Mathematics: A Very Short Introduction](#) [Research in History and Philosophy of Mathematics](#) [Proofs in Competition Math: Volume 2](#) **Anachronisms in the History of Mathematics** **A Second Step to Mathematical Olympiad Problems** **Oxford Figures** *Why Study Mathematics?* **The History of Mathematics: A Source-Based Approach** *A History of Mathematics in the United States and Canada* **The History of Mathematics: A Source-Based Approach, Volume 2** **Russian Mathematics Education: History And World Significance** **A history of elementary mathematics** *Writing the History of Mathematics: Its Historical Development* **A History of Mathematical Notations (Two Volume in One)** **Fifty Years of Women in Mathematics** **A Primer for Mathematics Competitions** **History of the Congress. Scientific plan of the Congress. Philosophy and mathematics** **The Mathematics of the Heavens and the Earth** **Australian Mathematics Competition Book 5 2006 - 2012** **History of Mathematics** [Teaching Secondary Mathematics](#) [First Steps for Math Olympians: Using the American Mathematics Competitions](#)

Strong math skills are essential to success in school and life. Math Practice Simplified - Primary Concepts is designed to increase understanding of beginning concepts, such as counting, writing numerals, telling time, counting money, measuring, and basic adding and subtracting. Although this book is developmentally appropriate for use as enrichment for five-year-olds and practice for six-year-olds, it can be adapted to serve the needs of other students. Students who complete this book successfully are likely to build a solid foundation for mathematics, increase self-esteem, and improve performance on standardized tests. Concepts in this eBook are based on Principles and Standards for School Mathematics as identified by the National Council of Teachers of Mathematics. Answers are provided at the back of the book. This third volume of problems from the William Lowell Putnam Competition is unlike the previous two in that it places the problems in the context of important mathematical themes. The authors highlight connections to other problems, to the curriculum and to more advanced topics. The best problems contain kernels of sophisticated ideas related to important current research, and yet the problems are accessible to undergraduates. The solutions have been compiled from the American Mathematical Monthly, Mathematics Magazine and past competitors. Multiple solutions enhance the understanding of the audience, explaining techniques that have relevance to more than the problem at hand. In addition, the book contains suggestions for further reading, a hint to each problem, separate from the full solution and background information about the competition. The book will appeal to students, teachers, professors and indeed anyone interested in problem solving as a gateway to a deep understanding of mathematics. The Association for Women in Mathematics (AWM), the oldest organization in the world for women in mathematics, had its fiftieth anniversary in 2021. This collection of refereed articles, illustrated by color photographs, reflects on women in mathematics and the organization as a whole. Some articles focus on the situation for women in mathematics at various times and places, including other countries. Others describe how individuals have shaped AWM, and, in turn, how the organization has impacted individuals as well as the broader mathematical community. Some are personal stories about careers in mathematics. *Fifty Years of Women in Mathematics: Reminiscences, History, and Visions for the Future of*

AWM covers a span from AWM's beginnings through the following fifty years. The volume celebrates AWM and its successes but does not shy away from its challenges. The book is designed for a general audience. It provides interesting and informative reading for people interested in mathematics, gender equity, or organizational structures; teachers of mathematics; students at the high school, college, and graduate levels; and members of more recently established organizations for women in mathematics and related fields or prospective founders of such organizations. Originally issued in 1893, this popular Fifth Edition (1991) covers the period from antiquity to the close of World War I, with major emphasis on advanced mathematics and, in particular, the advanced mathematics of the nineteenth and early twentieth centuries. In one concise volume this unique book presents an interesting and reliable account of mathematics history for those who cannot devote themselves to an intensive study. The book is a must for personal and departmental libraries alike. Cajori has mastered the art of incorporating an enormous amount of specific detail into a smooth-flowing narrative. The Index—for example—contains not just the 300 to 400 names one would expect to find, but over 1,600. And, for example, one will not only find John Pell, but will learn who he was and some specifics of what he did (and that the Pell equation was named erroneously after him). In addition, one will come across Anna J. Pell and learn of her work on biorthogonal systems; one will find not only H. Lebesgue but the not unimportant (even if not major) V.A. Lebesgue. Of the Bernoullis one will find not three or four but all eight. One will find R. Sturm as well as C. Sturm; M. Ricci as well as G. Ricci; V. Riccati as well as J.F. Riccati; Wolfgang Bolyai as well as J. Bolyai; the mathematician Martin Ohm as well as the physicist G.S. Ohm; M. Riesz as well as F. Riesz; H.G. Grassmann as well as H. Grassmann; H.P. Babbage who continued the work of his father C. Babbage; R. Fuchs as well as the more famous L. Fuchs; A. Quetelet as well as L.A.J. Quetelet; P.M. Hahn and Hans Hahn; E. Blaschke and W. Blaschke; J. Picard as well as the more famous C.E. Picard; B. Pascal (of course) and also Ernesto Pascal and Etienne Pascal; and the historically important V.J. Bouniakovski and W.A. Steklov, seldom mentioned at the time outside the Soviet literature. Greenwich has been a centre for scientific computing since the foundation of the Royal Observatory in 1675. Early Astronomers Royal gathered astronomical data with the purpose of enabling navigators to compute their longitude at sea. Nevil Maskelyne in the 18th century organised the work of computing tables for the Nautical Almanac, anticipating later methods used in safety-critical computing systems. The 19th century saw influential critiques of Charles Babbage's mechanical calculating engines, and in the 20th century Leslie Comrie and others pioneered the automation of computation. The arrival of the Royal Naval College in 1873 and the University of Greenwich in 1999 has brought more mathematicians and different kinds of mathematics to Greenwich. In the 21st century computational mathematics has found many new applications. This book presents an account of the mathematicians who worked at Greenwich and their achievements. Features A scholarly but accessible history of mathematics at Greenwich, from the seventeenth century to the present day, with each chapter written by an expert in the field The book will appeal to astronomical and naval historians as well as historians of mathematics and scientific computing. This text records the problems given for the first 15 annual undergraduate mathematics competitions, held in March each year since 2001 at the University of Toronto. Problems cover areas of single-variable differential and integral calculus, linear algebra, advanced algebra, analytic geometry, combinatorics, basic group theory, and number theory. The problems of the competitions are given in chronological order as presented to the students. The solutions appear in subsequent chapters according to subject matter. Appendices recall some background material and list the names of students who did well. The University of Toronto Undergraduate Competition was founded to provide additional competition experience for undergraduates preparing for the Putnam competition, and is particularly useful for the freshman or sophomore undergraduate. Lecturers, instructors, and coaches for mathematics competitions will find this presentation useful. Many of the problems are of intermediate difficulty and relate to the first two years of the

undergraduate curriculum. The problems presented may be particularly useful for regular class assignments. Moreover, this text contains problems that lie outside the regular syllabus and may interest students who are eager to learn beyond the classroom. This is the first truly comprehensive and thorough history of the development of a mathematical community in the United States and Canada. This second volume starts at the turn of the twentieth century with a mathematical community that is firmly established and traces its growth over the next forty years, at the end of which the American mathematical community is pre-eminent in the world. In the preface to the first volume of this work Zitarelli reveals his animating philosophy, "I find that the human factor lends life and vitality to any subject." History of mathematics, in the Zitarelli conception, is not just a collection of abstract ideas and their development. It is a community of people and practices joining together to understand, perpetuate, and advance those ideas and each other. Telling the story of mathematics means telling the stories of these people: their accomplishments and triumphs; the institutions and structures they built; their interpersonal and scientific interactions; and their failures and shortcomings. One of the most hopeful developments of the period 1900–1941 in American mathematics was the opening of the community to previously excluded populations. Increasing numbers of women were welcomed into mathematics, many of whom—including Anna Pell Wheeler, Olive Hazlett, and Mayme Logsdon—are profiled in these pages. Black mathematicians were often systemically excluded during this period, but, in spite of the obstacles, Elbert Frank Cox, Dudley Woodard, David Blackwell, and others built careers of significant accomplishment that are described here. The effect on the substantial community of European immigrants is detailed through the stories of dozens of individuals. In clear and compelling prose Zitarelli, Dumbaugh, and Kennedy spin a tale accessible to experts, general readers, and anyone interested in the history of science in North America. *The Mathematics of the Heavens and the Earth* is the first major history in English of the origins and early development of trigonometry. Glen Van Brummelen identifies the earliest known trigonometric precursors in ancient Egypt, Babylon, and Greece, and he examines the revolutionary discoveries of Hipparchus, the Greek astronomer believed to have been the first to make systematic use of trigonometry in the second century BC while studying the motions of the stars. The book traces trigonometry's development into a full-fledged mathematical discipline in India and Islam; explores its applications to such areas as geography and seafaring navigation in the European Middle Ages and Renaissance; and shows how trigonometry retained its ancient roots at the same time that it became an important part of the foundation of modern mathematics. *The Mathematics of the Heavens and the Earth* looks at the controversies as well, including disputes over whether Hipparchus was indeed the father of trigonometry, whether Indian trigonometry is original or derived from the Greeks, and the extent to which Western science is indebted to Islamic trigonometry and astronomy. The book also features extended excerpts of translations of original texts, and detailed yet accessible explanations of the mathematics in them. No other book on trigonometry offers the historical breadth, analytical depth, and coverage of non-Western mathematics that readers will find in *The Mathematics of the Heavens and the Earth*. This volume contains seventeen papers that were presented at the 2015 Annual Meeting of the Canadian Society for History and Philosophy of Mathematics/La Société Canadienne d'Histoire et de Philosophie des Mathématiques, held in Washington, D.C. In addition to showcasing rigorously reviewed modern scholarship on an interesting variety of general topics in the history and philosophy of mathematics, this meeting also honored the memories of Jacqueline (Jackie) Stedall and Ivor Grattan-Guinness; celebrated the Centennial of the Mathematical Association of America; and considered the importance of mathematical communities in a special session. These themes and many others are explored in these collected papers, which cover subjects such as New evidence that the Latin translation of Euclid's *Elements* was based on the Arabic version attributed to al-Ḥajjāj Work done on the arc rampant in the seventeenth century The history of numerical methods for finding roots of nonlinear equations An original play featuring a dialogue between George Boole and Augustus De Morgan that explores the relationship between them Key issues in the digital preservation of mathematical material for future generations A look at the first twenty-five years of *The American Mathematical Monthly* in the context of the evolving American mathematical community The growth of Math Circles and the unique ways they are being implemented in the United States Written by leading scholars in the field, these papers will be accessible to not only mathematicians and students of the history and philosophy of

mathematics, but also anyone with a general interest in mathematics. From a review of the second edition: "This book covers many interesting topics not usually covered in a present day undergraduate course, as well as certain basic topics such as the development of the calculus and the solution of polynomial equations. The fact that the topics are introduced in their historical contexts will enable students to better appreciate and understand the mathematical ideas involved...If one constructs a list of topics central to a history course, then they would closely resemble those chosen here." (David Parrott, Australian Mathematical Society) This book offers a collection of historical essays detailing a large variety of mathematical disciplines and issues; it's accessible to a broad audience. This third edition includes new chapters on simple groups and new sections on alternating groups and the Poincaré conjecture. Many more exercises have been added as well as commentary that helps place the exercises in context. Described even today as "unsurpassed," this history of mathematical notation stretching back to the Babylonians and Egyptians is one of the most comprehensive written. In two impressive volumes, first published in 1928-9 and reproduced here under one cover, distinguished mathematician Florian Cajori shows the origin, evolution, and dissemination of each symbol and the competition it faced in its rise to popularity or fall into obscurity. Illustrated with more than a hundred diagrams and figures, this "mirror of past and present conditions in mathematics" will give students and historians a whole new appreciation for " $1 + 1 = 2$ ." Swiss-American author, educator, and mathematician FLORIAN CAJORI (1859-1930) was one of the world's most distinguished mathematical historians. Appointed to a specially created chair in the history of mathematics at the University of California, Berkeley, he also wrote *An Introduction to the Theory of Equations*, *A History of Mathematical Notations*, and *The Chequered Career of Ferdinand Rudolph Hassler*. Any high school student preparing for the American Mathematics Competitions should get their hands on a copy of this book! A major aspect of mathematical training and its benefit to society is the ability to use logic to solve problems. The American Mathematics Competitions (AMC) have been given for more than fifty years to millions of high school students. This book considers the basic ideas behind the solutions to the majority of these problems, and presents examples and exercises from past exams to illustrate the concepts. Anyone taking the AMC exams or helping students prepare for them will find many useful ideas here. But people generally interested in logical problem solving should also find the problems and their solutions interesting. This book will promote interest in mathematics by providing students with the tools to attack problems that occur on mathematical problem-solving exams, and specifically to level the playing field for those who do not have access to the enrichment programs that are common at the top academic high schools. The book can be used either for self-study or to give people who want to help students prepare for mathematics exams easy access to topic-oriented material and samples of problems based on that material. This is useful for teachers who want to hold special sessions for students, but it is equally valuable for parents who have children with mathematical interest and ability. As students' problem solving abilities improve, they will be able to comprehend more difficult concepts requiring greater mathematical ingenuity. They will be taking their first steps towards becoming math Olympians! Solidly grounded in up-to-date research, theory, and technology, *Teaching Secondary Mathematics* is a practical, student-friendly, and popular text for secondary mathematics methods courses. It provides clear and useful approaches for mathematics teachers and shows how concepts typically found in a secondary mathematics curriculum can be taught in a positive and encouraging way. The thoroughly revised fifth edition combines this pragmatic approach with truly innovative and integrated technology content throughout. Synthesized content between the book and a comprehensive Instructor and Student Resource website offers expanded discussion of chapter topics, additional examples, and technological tips, such as using and assessing artificial intelligence. Each chapter features tried-and-tested pedagogical techniques, problem-solving challenges, discussion points, activities, mathematical challenges, and student-life-based applications that will encourage students to think and do. New to the fifth edition: • A fully revised chapter on technological advancements in the teaching of mathematics, including the use of artificial intelligence • A new chapter on equity, shame, and anxiety in the mathematics classroom • Connections to both the updated National Council of Teachers of Mathematics (NCTM) Focal Points and Standards • Problem-solving challenges and sticky questions featured in each chapter to encourage students to think through everyday issues and possible solutions • A fresh interior design to better highlight pedagogical

elements and key features • A completely updated Instructor and Student Resource site with chapter-by-chapter video lessons, teacher tools, problem solving Q&As, exercises, and helpful links and resources. Engaging and comprehensive history of Greek mathematics, with full attention to social contexts and its place in world history. As an historiographic monograph, this book offers a detailed survey of the professional evolution and significance of an entire discipline devoted to the history of science. It provides both an intellectual and a social history of the development of the subject from the first such effort written by the ancient Greek author Eudemus in the Fourth Century BC, to the founding of the international journal, *Historia Mathematica*, by Kenneth O. May in the early 1970s. The international New Math developments between about 1950 through 1980, are regarded by many mathematics educators and education historians as the most historically important development in curricula of the twentieth century. It attracted the attention of local and international politicians, of teachers, and of parents, and influenced the teaching and learning of mathematics at all levels—kindergarten to college graduate—in many nations. After garnering much initial support it began to attract criticism. But, as Bill Jacob and the late Jerry Becker show in Chapter 17, some of the effects became entrenched. This volume, edited by Professor Dirk De Bock, of Belgium, provides an outstanding overview of the New Math/modern mathematics movement. Chapter authors provide exceptionally high-quality analyses of the rise of the movement, and of subsequent developments, within a range of nations. The first few chapters show how the initial leadership came from mathematicians in European nations and in the United States of America. The background leaders in Europe were Caleb Gattegno and members of a mysterious group of mainly French pure mathematicians, who since the 1930s had published under the name of (a fictitious) “Nicolas Bourbaki.” In the United States, there emerged, during the 1950s various attempts to improve U.S. mathematics curricula and teaching, especially in secondary schools and colleges. This side of the story climaxed in 1957 when the Soviet Union succeeded in launching “Sputnik,” the first satellite. Undoubtedly, this is a landmark publication in education. The foreword was written by Professor Bob Moon, one of a few other scholars to have written on the New Math from an international perspective. The final “epilogue” chapter, by Professor Geert Vanpaemel, a historian, draws together the overall thrust of the volume, and makes links with the general history of curriculum development, especially in science education, including recent globalization trends. Considering studying mathematics at university? Wondering whether a mathematics degree will get you a good job, and what you might earn? Want to know what it's actually like to study mathematics at degree level? This book tells you what you need to know. Studying any subject at degree level is an investment in the future that involves significant cost. Now more than ever, students and their parents need to weigh up the potential benefits of university courses. That's where the Why Study series comes in. This series of books, aimed at students, parents and teachers, explains in practical terms the range and scope of an academic subject at university level and where it can lead in terms of careers or further study. Each book sets out to enthuse the reader about its subject and answer the crucial questions that a college prospectus does not. The *History of Mathematics: A Source-Based Approach* is a comprehensive history of the development of mathematics. This, the first volume of the two-volume set, takes readers from the beginning of counting in prehistory to 1600 and the threshold of the discovery of calculus. It is notable for the extensive engagement with original—primary and secondary—source material. The coverage is worldwide, and embraces developments, including education, in Egypt, Mesopotamia, Greece, China, India, the Islamic world and Europe. The emphasis on astronomy and its historical relationship to mathematics is new, and the presentation of every topic is informed by the most recent scholarship in the field. The two-volume set was designed as a textbook for the authors' acclaimed year-long course at the Open University. It is, in addition to being an innovative and insightful textbook, an invaluable resource for students and scholars of the history of mathematics. The authors, each among the most distinguished mathematical historians in the world, have produced over fifty books and earned scholarly and expository prizes from the major mathematical societies of the English-speaking world. The importance of mathematics competitions has been widely recognised for three reasons: they help to develop imaginative capacity and thinking skills whose value far transcends mathematics; they constitute the most effective way of discovering and nurturing mathematical talent; and they provide a means to combat the prevalent false image of mathematics held by high school students, as either a fearsomely difficult or a dull and uncreative

subject. This book provides a comprehensive training resource for competitions from local and provincial to national Olympiad level, containing hundreds of diagrams, and graced by many light-hearted cartoons. It features a large collection of what mathematicians call "beautiful" problems - non-routine, provocative, fascinating, and challenging problems, often with elegant solutions. It features careful, systematic exposition of a selection of the most important topics encountered in mathematics competitions, assuming little prior knowledge. Geometry, trigonometry, mathematical induction, inequalities, Diophantine equations, number theory, sequences and series, the binomial theorem, and combinatorics - are all developed in a gentle but lively manner, liberally illustrated with examples, and consistently motivated by attractive "appetiser" problems, whose solution appears after the relevant theory has been expounded. Each chapter is presented as a "toolchest" of instruments designed for cracking the problems collected at the end of the chapter. Other topics, such as algebra, co-ordinate geometry, functional equations and probability, are introduced and elucidated in the posing and solving of the large collection of miscellaneous problems in the final toolchest. An unusual feature of this book is the attention paid throughout to the history of mathematics - the origins of the ideas, the terminology and some of the problems, and the celebration of mathematics as a multicultural, cooperative human achievement. As a bonus the aspiring "mathlete" may encounter, in the most enjoyable way possible, many of the topics that form the core of the standard school curriculum. A unique collection of competition problems from over twenty major national and international mathematical competitions for high school students. Written for trainers and participants of contests of all levels up to the highest level, this will appeal to high school teachers conducting a mathematics club who need a range of simple to complex problems and to those instructors wishing to pose a "problem of the week", thus bringing a creative atmosphere into the classrooms. Equally, this is a must-have for individuals interested in solving difficult and challenging problems. Each chapter starts with typical examples illustrating the central concepts and is followed by a number of carefully selected problems and their solutions. Most of the solutions are complete, but some merely point to the road leading to the final solution. In addition to being a valuable resource of mathematical problems and solution strategies, this is the most complete training book on the market. Discover essays by leading scholars on the history of mathematics from ancient to modern times in European and non-European cultures. Back by popular demand, we are pleased to reissue this outstanding collection of problems and solutions from the Putnam Competitions covering the years 1938-1964. Problemists the world over, including all past and future Putnam Competitors, will revel in mastering the difficulties posed by this collection of problems from the first 25 William Lowell Putnam Competitions. Solutions to all 347 problems are given. In some cases multiple solutions are included, some which contestants could reasonably be expected to find under examination conditions, and others which are more elegant or utilize more sophisticated techniques. Valuable references and historical comments on many of the problems are presented. The book concludes with four articles on the Putnam competition written by G. Birkhoff, L. E. Bush, L. J. Mordell, and L. M. Kelly which are reprinted from the *American Mathematical Monthly*. There is great appeal here for all; teachers, students, and all those who love good problems and see them as an entree to beautiful and powerful ideas. This short reference book contains fundamental concepts crucial to solving math competition problems such as those found on the Mathematical Association of America's AMC 10, AMC 12, and AIME, as well as those found in local or regional competitions. Full of formulas as well as examples and solutions, this book shows how specific problems can be best solved in order to succeed in math competitions. Content is organized by mathematical topic and has been selected for its diversity. Topics include Number Theory, Combinatorics, Probability, Statistics, Sequences and Series, Algebra, Geometry, Trigonometry, and Coordinate Mathematics. The book even contains a section containing the author's own tips from past experience in math competitions. All in all, this is a must buy for math competition participants and teachers alike. Contains: Nine Chapters, Table of Contents, Index. To celebrate the 400th anniversary of the founding of the geometry chair, a meeting was held at the Bodleian Library in Oxford, and the talks presented at this meeting have formed the basis for this fully edited and lavishly illustrated book, which outlines the first 400 years of Oxford's Savilian Professors of Geometry. This book is a comprehensive compilation of all the problems and solutions from the 2003 to 2012 Purple Comet Math Meet contests for middle and high



school students. The problems featured not only employ an extensive range of mathematical concepts from algebra, geometry, number theory, and combinatorics but also encourage team collaboration. Any student interested in mathematics—whether looking to prepare for contests or, even more importantly, to sharpen math problem-solving skills—would cherish and enjoy this unique and pertinent collection of meaningful problems and solutions. A Friendly Mathematics Competition tells the story of the Indiana College Mathematics Competition (ICMC) by presenting the problems, solutions, and results of the first 35 years of the ICMC. The ICMC was organized in reaction to the Putnam Exam—its problems were to be more representative of the undergraduate curriculum, and students could work on them in teams. Participation was originally restricted to the small, private colleges and universities of the state, but was later opened up to students from all of the schools in Indiana. The competition was quickly nicknamed the "Friendly" Competition because of its focus on solving mathematical problems, which brought faculty and students together, rather than on the competitive nature of winning. Organized by year, the problems and solutions in this volume present an excellent archive of information about what has been expected of an undergraduate mathematics major over the past 35 years. With more than 245 problems and solutions, the book is also a must buy for faculty and students interested in problem-solving. The index of problems lists problems in: Algebraic Structures; Analytic Geometry, Arc Length, Binomial Coefficients, Derangements, Differentiation, Differential Equations, Diophantine Equations, Enumeration, Field and Ring Theory, Fibonacci Sequences, Finite Sums, Fundamental Theorem of Calculus Geometry, Group Theory, Inequalities, Infinite Series, Integration, Limit Evaluation, Logic, Matrix Algebra, Maxima and Minima Problems, Multivariable Calculus, Number Theory, Permutations, Probability, Polar Coordinates, Polynomials, Real Valued Functions, Riemann Sums, Sequences, Systems of Equations, Statistics, Synthetic Geometry, Taylor Series, Trigonometry, and Volumes. The History of Mathematics: A Source-Based Approach is a comprehensive history of the development of mathematics. This, the second volume of a two-volume set, takes the reader from the invention of the calculus to the beginning of the twentieth century. The initial discoverers of calculus are given thorough investigation, and special attention is also paid to Newton's Principia. The eighteenth century is presented as primarily a period of the development of calculus, particularly in differential equations and applications of mathematics. Mathematics blossomed in the nineteenth century and the book explores progress in geometry, analysis, foundations, algebra, and applied mathematics, especially celestial mechanics. The approach throughout is markedly historiographic: How do we know what we know? How do we read the original documents? What are the institutions supporting mathematics? Who are the people of mathematics? The reader learns not only the history of mathematics, but also how to think like a historian. The two-volume set was designed as a textbook for the authors' acclaimed year-long course at the Open University. It is, in addition to being an innovative and insightful textbook, an invaluable resource for students and scholars of the history of mathematics. The authors, each among the most distinguished mathematical historians in the world, have produced over fifty books and earned scholarly and expository prizes from the major mathematical societies of the English-speaking world. The mathematical tradition at Oxford is one of the oldest in Britain, and Oxford scholars have been at the forefront of mathematical research for the past eight centuries. This is the story of the intellectual and social life of this community, and of its interactions with the wider world. This is a concise introductory textbook for a one-semester (40-class) course in the history and philosophy of mathematics. It is written for mathematics majors, philosophy students, history of science students, and (future) secondary school mathematics teachers. The only prerequisite is a solid command of precalculus mathematics. On the one hand, this book is designed to help mathematics majors acquire a philosophical and cultural understanding of their subject by means of doing actual mathematical problems from different eras. On the other hand, it is designed to help philosophy, history, and education students come to a deeper understanding of the mathematical side of culture by means of writing short essays. The way I myself teach the material, students are given a choice between mathematical assignments, and more historical or philosophical assignments. (Some sample assignments and tests are found in an appendix to this book.) This book differs from standard textbooks in several ways. First, it is shorter, and thus more accessible to

students who have trouble coping with vast amounts of reading. Second, there are many detailed explanations of the important mathematical procedures actually used by famous mathematicians, giving more mathematically talented students a greater opportunity to learn the history and philosophy by way of problem solving. Mathematics is a fundamental human activity that can be practised and understood in a multitude of ways; indeed, mathematical ideas themselves are far from being fixed, but are adapted and changed by their passage across periods and cultures. In this Very Short Introduction, Jacqueline Stedall explores the rich historical and cultural diversity of mathematical endeavour from the distant past to the present day. Arranged thematically, to exemplify the varied contexts in which people have learned, used, and handed on mathematics, she also includes illustrative case studies drawn from a range of times and places, including early imperial China, the medieval Islamic world, and nineteenth-century Britain. ABOUT THE SERIES: The Very Short Introductions series from Oxford University Press contains hundreds of titles in almost every subject area. These pocket-sized books are the perfect way to get ahead in a new subject quickly. Our expert authors combine facts, analysis, perspective, new ideas, and enthusiasm to make interesting and challenging topics highly readable. The International Mathematical Olympiad (IMO) is the World Championship Mathematics Competition for High School students and is held annually in a different country. More than eighty countries are involved. Containing numerous exercises, illustrations, hints and solutions, presented in a lucid and thought-provoking style, this text provides a wide range of skills required in competitions such as the Mathematical Olympiad. More than fifty problems in Euclidean geometry involving integers and rational numbers are presented. Early chapters cover elementary problems while later sections break new ground in certain areas and are a greater challenge for the more adventurous reader. The text is ideal for Mathematical Olympiad training and also serves as a supplementary text for students in pure mathematics, particularly number theory and geometry. Dr. Christopher Bradley was formerly a Fellow and Tutor in Mathematics at Jesus College, Oxford, Deputy Leader of the British Mathematical Olympiad Team and for several years Secretary of the British Mathematical Olympiad Committee. Critical mathematics education brings together a series of concerns related to mathematics and its role in society, the practices of teaching and learning of mathematics in educational settings, and the practices of researching mathematics education. The work of Ole Skovsmose has provided a seminal contribution to the shaping of those concerns in the international community of mathematics educators and mathematics education researchers. The International Mathematical Olympiad (IMO) is an annual international mathematics competition held for pre-collegiate students. It is also the oldest of the international science olympiads, and competition for places is particularly fierce. This book is an amalgamation of the booklets originally produced to guide students intending to contend for placement on their country's IMO team. See also A First Step to Mathematical Olympiad Problems which was published in 2009. The material contained in this book provides an introduction to the main mathematical topics covered in the IMO, which are: Combinatorics, Geometry and Number Theory. In addition, there is a special emphasis on how to approach unseen questions in Mathematics, and model the writing of proofs. Full answers are given to all questions. Though A Second Step to Mathematical Olympiad Problems is written from the perspective of a mathematician, it is written in a way that makes it easily comprehensible to adolescents. This book is also a must-read for coaches and instructors of mathematical competitions. This anthology, consisting of two volumes, is intended to equip background researchers, practitioners and students of international mathematics education with intimate knowledge of mathematics education in Russia. Volume I, entitled Russian Mathematics Education: History and World Significance, consists of several chapters written by distinguished authorities from Russia, the United States and other nations. It examines the history of mathematics education in Russia and its relevance to mathematics education throughout the world. The second volume, entitled Russian Mathematics Education: Programs and Practices will examine specific Russian programs in mathematics, their impact and methodological innovations. Although Russian mathematics education is highly respected for its achievements and was once very influential internationally, it has never been explored in depth. This publication does just that.