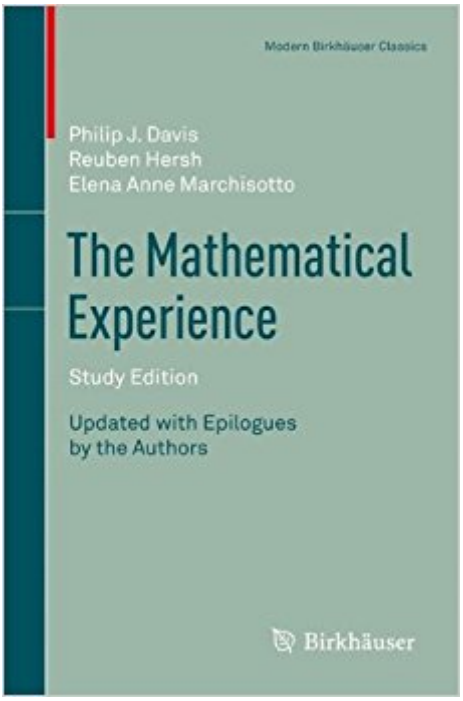
# The Mathematical Experience, Study Edition (Modern BirkhÃ¤user Classics)



## Synopsis

Winner of the 1983Â National Book Award!"â |a perfectly marvelous book about the Queen of Sciences, from which one will get a real feeling for what mathematicians do and who they are. The exposition is clear and full of wit and humor..." - The New Yorker (1983Â National Book Award edition)Mathematics has been a human activity for thousands of years. Yet only a few people from the vast population of users are professional mathematicians, who create, teach, foster, and apply it in a variety of situations. The authors of this book believe that it should be possible for these professional mathematicians to explain to non-professionals what they do, what they say they are doing, and why the world should support them at it. They also believe that mathematics should be taught to non-mathematics majors in such a way as to instill an appreciation of the power and beauty of mathematics. Many people from around the world have told the authors that they have done precisely that with the first edition and they have encouraged publication of this revised edition complete with exercises for helping students to demonstrate their understanding. This edition of the book should find a new generation of general readers and students who would like to know what mathematics is all about. It will prove invaluable as a course text for a general mathematics appreciation course, one in which the student can combine an appreciation for the esthetics with some satisfying and revealing applications.The text is ideal for 1) a GE course for Liberal Arts students 2) a Capstone course for perspective teachers 3) a writing course for mathematics teachers. A wealth of customizable online course materials for the book can be obtained from Elena Anne Marchisotto (elena.marchisotto@csun.edu) upon request.

## Book Information

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## Customer Reviews

From the reviews:[The authors] have tried to provide a book usable in a course for liberal arts students and for future secondary teachers.Â  They have done much more! Â This course should be required of every undergraduate major employing the mathematical sciences. Â It differs from the â œmathematics appreciationâ • coursesâ •courses that are merely a collection of amusing puzzles and toy problems giving an illusion of a mathematical encounterâ •presently found in many institutions. Â Students of this course are introduced to the context in which mathematics exists and the incredible magnitude of words devoted to communicating mathematics (hundreds of thousands of theorems each year). Â How much mathematics can there be? they are asked. Â Instructors in a â œMathematical Experienceâ • course must be prepared to respond to questions from students concerning the fundamental nature of the whole mathematical enterprise. Â Stimulated by their reading of the text, students will ask about the underlying logical and philosophical issues, the role of mathematical methods and their origins, the substance of contemporary mathematical advances, the meaning of rigor and proof in mathematics, the role of computational mathematics, and issues of teaching and learning. Â How real is the conflict between â œpureâ • mathematics, as represented by G.H. Hardyâ ™s statements, and â œappliedâ • mathematics? they may ask. Â Are there other kinds of mathematics, neither pure nor applied? Â This edition of the book provides a source of problems, collateral readings, references, essay and project assignments, and discussion guides for the course. Â I believe that it is likely that this course would be a challenge to many teachers and students alike, especially those teachers and students who are willing to follow their curiosity beyond the confines of this book and follow up on the many references that are provided.Â â •Notices of the AMS (Kenneth C. Millett) This beautifully written book can be recommended to any cultivated person with a certain sophistication of thought, and also to the practicing mathematician who will find here a vantage point from which to make a tour d’horizon of his science. â •Publ. Math. DebrecenThis is an unusual book, being more a book about mathematics than a mathematics book.Â  It includes mathematical issues, but also questions from the philosophy of mathematics, the psychology of mathematical discovery, the history of mathematics, and biographies of mathematicians, in short, a book about the mathematical experience broadly consideredâ | The book found its way into "Much for liberal arts students" courses and into education courses directed at future teachers.Â  Term paper topics, essay assignments, problems, computer applications, and suggested readings are included.Â  This new

material should greatly enhance the usefulness of this very creative book.Â  The range of topics covered is immense and the contents cannot easily be summarized.Â  The book makes excellent casual reading, would make a good textbook, or could easily be used as a supplement to nearly any course concerned with mathematics. â •Zentralblatt MATHÂ  â œThis is a reprint of the 1995 edition â | of a well-known and popular text. In a new edition, each of the authors added a brief essay in the end. â | A warmly welcomed reprint of a very nice book that can be recommended for teaching, self-education, and simply as an entertaining reading.â • (Svitlana P. Rogovchenko, Zentralblatt MATH, Vol. 1230, 2012)â œThe Mathematical Experience is a very interesting read â " it provides a highly personal tour through aspects of mathematics, its history, its philosophy, and its relationship with the â ˆrealâ ™ world. As such it provides a nice glimpse into how two mathematicians thought about their discipline as of some 30 years ago. â | a worthy addition to the libraries of mathematicians interested in the scope and nature of our discipline. â | I really enjoyed reading The Mathematical Experience and would recommend it for college and personal libraries.â • (Richard J. Wilders, The Mathematical Association of America, March, 2012)

Winner of the 1983Â National Book Award, The Mathematical Experience presented a highlyÂ insightful overview of mathematics that effectively conveyed its power and beauty to a largeÂ audience of mathematicians and non-mathematicians alike.Â  The study edition of the work followed about a decade later, supplementing the original material of the book with exercises to provide a self-contained treatment usable for the classroom. This softcover version reproduces the study edition andÂ includes epilogues by the three original authors to reflect on the book's content 15 years after its publication, and to demonstrate its continued applicability to the classroom.Â Moreover,Â The Companion Guide to the Mathematical Experienceâ •originally published and sold separatelyâ •is freely available online to instructors who use the work, further enhancingÂ its pedagogicalÂ value and making itÂ an exceptionally usefulÂ and accessible resource for a wide range ofÂ lower-level courses inÂ mathematics and mathematics education.A wealth of customizable online course materials for the bookÂ can be obtainedÂ from Elena Anne Marchisotto (elena.marchisotto@csun.edu) upon request.Reviews[The authors] have tried to provide a book usable in a course for liberal arts students and for future secondary teachers.Â  They have done much more! Â This course should be required of every undergraduate major employing the mathematical sciences. Â It differs from the â œmathematics appreciationâ • coursesâ •courses that are merely a collection of amusing puzzles and toy problems giving an illusion of a mathematical encounterâ •presently found in many institutions. Â Students of this course are introduced to the

context in which mathematics exists and the incredible magnitude of words devoted to communicating mathematics (hundreds of thousands of theorems each year). Â How much mathematics can there be? they are asked. Â Instructors in a â œMathematical Experienceâ • course must be prepared to respond to questions from students concerning the fundamental nature of the whole mathematical enterprise. Â Stimulated by their reading of the text, students will ask about the underlying logical and philosophical issues, the role of mathematical methods and their origins, the substance of contemporary mathematical advances, the meaning of rigor and proof in mathematics, the role of computational mathematics, and issues of teaching and learning. Â How real is the conflict between â œpureâ • mathematics, as represented by G.H. Hardyâ ™s statements, and â œappliedâ • mathematics? they may ask. Â Are there other kinds of mathematics, neither pure nor applied? Â This edition of the book provides a source of problems, collateral readings, references, essay and project assignments, and discussion guides for the course. Â I believe that it is likely that this course would be a challenge to many teachers and students alike, especially those teachers and students who are willing to follow their curiosity beyond the confines of this book and follow up on the many references that are provided.Â â •Notices of the AMS (Kenneth C. Millett)This beautifully written book can be recommended to any cultivated person with a certain sophistication of thought, and also to the practicing mathematician who will find here a vantage point from which to make a tour d'horizon of his science. â •Publ. Math. DebrecenThis is an unusual book, being more a book about mathematics than a mathematics book.Â  It includes mathematical issues, but also questions from the philosophy of mathematics, the psychology of mathematical discovery, the history of mathematics, and biographies of mathematicians, in short, a book about the mathematical experience broadly consideredâ | The book found its way into "Much for liberal arts students" courses and into education courses directed at future teachers.Â  Term paper topics, essay assignments, problems, computer applications, and suggested readings are included.Â  This new material should greatly enhance the usefulness of this very creative book.Â  The range of topics covered is immense and the contents cannot easily be summarized.Â  The book makes excellent casual reading, would make a good textbook, or could easily be used as a supplement to nearly any course concerned with mathematics. â •Zentralblatt MATHÂ

It is what I need for class, but the content is just too self-righteous for my personal taste. To each their own though

Perfect quality way cheaper than actual prize.

good

I took Ruben Hersh’s class, Foundations of Mathematics, with this book as the text, in the early ’80’s. It was a wonderful experience and I fell in love with the material, pouring more time into this course than all my others. I was reading Hofstadter’s "Godel, Escher and Bach" at the same time and the two books fit together like hand and glove. The course was graduate level but a few undergrads were taking it and the book is appropriate for a general audience with an interest in math. It could also be called Philosophy of Math and really makes a great connection between math theorem proving and the Hegelian dialectic upon which the USA is founded. So this book will not only improve your outlook on math but will also make you a better citizen of a democracy. It is important to realize the relationship between proof and refutation and dialectical reasoning and how these are fundamental mechanisms for how humans interact to achieve better results in aggregate than they would as individuals. Expect to learn about Plato, Gauss, Cantor, Descartes, Hegel, Lakatos, Frege, Russell, Hilbert, Goedel and more. I had an earlier edition with some beautiful cover art but would expect the current edition to be just as good otherwise.

Book was in perfect condition. I did not particularly enjoy the book due to technical, a lot of information at once and boring.

This book was a revelation to me. I was teaching Physics to gifted high school students at the time I read the book and was looking for innovative ways to teach the associated mathematics. This book opened the door to mathematics the way I was teaching physics, that is following a historical path. So I started to teach the historical perspective of both math and physics simultaneously, which proved to be a very organic method. As human beings progressively learned more about both subje•cts, so my students and I progressed with the material, historic•ally. Lovely book, filled with superb material which is as enlightening and it is entertaining. Enjoy!

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