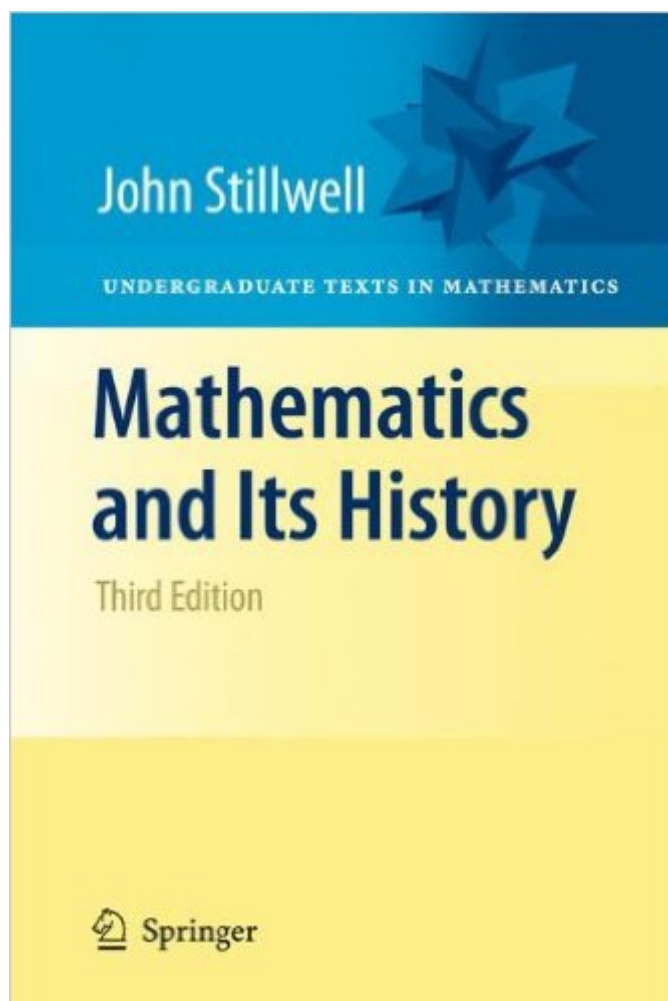


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# Mathematics And Its History (Undergraduate Texts In Mathematics)



## Synopsis

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 Poincare conjecture. Many more exercises have been added as well as commentary that helps place the exercises in context.

## Book Information

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## Customer Reviews

This is a brilliant book that conveys a beautiful, unified picture of mathematics. It is not an encyclopedic history, it is history for the sake of understanding mathematics. There is an idea behind every topic, every section makes a mathematical point, showing how the mathematical theories of today has grown inevitably from the natural problems studied by the masters of the past. Math history textbooks of today are often enslaved by the modern curriculum, which means that they spend lots of time on the question of rigor in analysis and they feel obliged to deal with

boring technicalities of the history of matrix theory and so on. This is of course the wrong way to study history. Instead, one of the great virtues of a history such as Stillwell's is that it studies mathematics the way mathematics wants to be studied, which gives a very healthy perspective on the modern customs. Again and again topics which are treated unnaturally in the usual courses are seen here in their proper setting. This makes this book a very valuable companion over the years. Another flaw of many standard history textbooks is that they spend too much time on trivial things like elementary arithmetic, because they think it is good for aspiring teachers and, I think, because it is fashionable to deal with non-western civilisations. It gives an unsound picture of mathematics if Gauss receives as much attention as abacuses, and it makes these books useless for understanding any of the really interesting mathematics, say after 1800. Here Stillwell saves us again. The chapter on calculus is done by page 170, which is about a third of the book. A comparable point in the more mainstream book of Katz, for instance, is page 596 of my edition, which is more than two thirds into that book. Petty details aside, the main point is the following: This is the single best book I have ever seen for truly understanding mathematics as a whole.

Stillwell covers a lot of ground in a short undergraduate text intended to unify various mathematical disciplines. Naturally, *Mathematics and its History* begins with the early Greeks and in particular geometry (which is how mathematics was typically expressed then). The development of algebra and polynomial forms is described followed by perspective geometry. The invention of calculus and the closely related discovery of infinite series provide the backdrop for short biographies of prominent mathematicians (mostly dead white males to multicultural deconstructionists). The development of elliptic integrals (used in solving functions with specified boundary conditions such as a Neumann problem found in fluid mechanics). The treatment then diverges to physical problems including the vibrating string and hydrodynamics, together with a note on the renown Bernoulli family. Then Stillwell returns to the esoteric in complex numbers, topology, group theory and logic with some comments on computation at the end. Some mathematicians may find the overview to lack comprehensiveness, but the book's brevity for each topic and biographical notes present a balanced approach to the more casual reader about this important field of study and how it developed.

This review is not negative based on the content of the book. This review is negative because of the poor job by the publisher in printing this book. The problem is: the "new" copy of the book I received had 15 to 20 page ranges which were totally unprinted. To phrase it another way, all the correct

number of pages were in the book but there were places where anywhere from 2 to 12 consecutive pages were not printed -not even the page numbers were printed on such page. The material on 90%+ of the 600+ seemed fine but several of these sections I had intended to read had large (and important) gaps. Springer this was an inferior print job - I have never seen a single book so poorly printed. I would still like a "good" copy of this book but I will never pay for it!!

It is a very good book. It has presented very clearly some difficult-to-understand relationship especially the link between algebra and geometry. It is a very good balance - history, Mathematics, biography all mixed very well together. Highly recommended.

Every page is filled with fresh insights, genuine scholarships, clarity, connections, and understandings. Leaves all other textbooks on history of math in the dust. Never blindly follows the crowd of other authors to repeat after each other the muddled, and often untrue, interpretations and stories. Makes me want to have a photographic memory to take in everything in the book and use them to motivate and inspire my own teaching. Also makes me want to read many of the original sources Professor Stillwell's vast scholarship has traveled through. It's a great page-turner and at the same time a fine wine to be sipped and appreciated sentence by sentence.

While I've enjoyed the first 10 pages, my copy was very poorly printed. There have to be at least 30 pages worth of text which are just blank. Updated: I previously gave this 1/5 stars for missing pages; I ordered another copy (2 years later) and everything appears to be fine now. This is a great book, and an easy read.

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