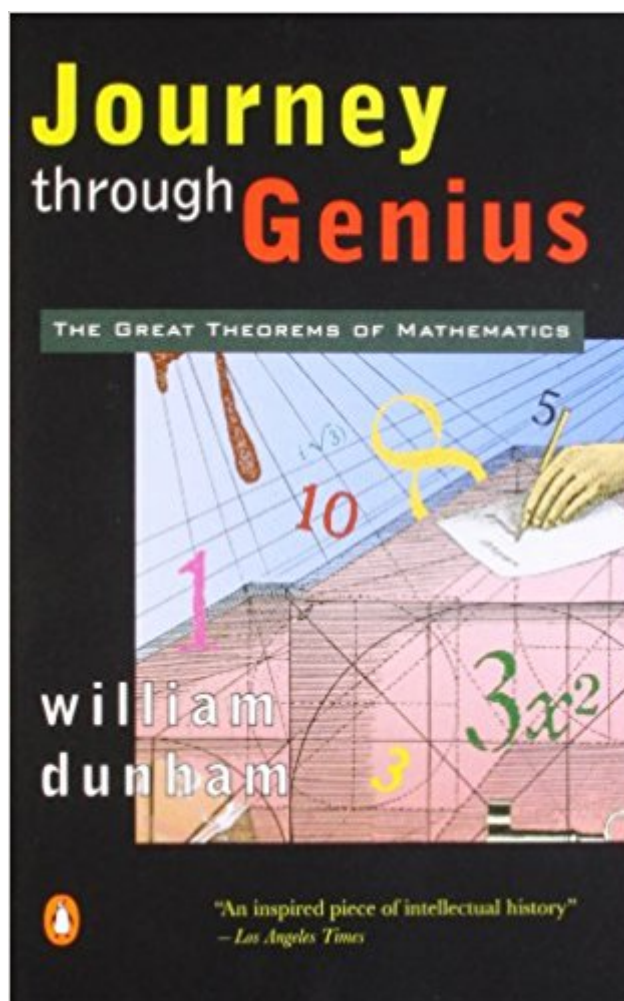


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# Journey Through Genius: The Great Theorems Of Mathematics



## Synopsis

Like masterpieces of art, music, and literature, great mathematical theorems are creative milestones, works of genius destined to last forever. Now William Dunham gives them the attention they deserve. Dunham places each theorem within its historical context and explores the very human and often turbulent life of the creator — from Archimedes, the absentminded theoretician whose absorption in his work often precluded eating or bathing, to Gerolamo Cardano, the sixteenth-century mathematician whose accomplishments flourished despite a bizarre array of misadventures, to the paranoid genius of modern times, Georg Cantor. He also provides step-by-step proofs for the theorems, each easily accessible to readers with no more than a knowledge of high school mathematics. A rare combination of the historical, biographical, and mathematical, *Journey Through Genius* is a fascinating introduction to a neglected field of human creativity. “It is mathematics presented as a series of works of art; a fascinating lingering over individual examples of ingenuity and insight. It is mathematics by lightning flash.” — Isaac Asimov

## Book Information

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## Customer Reviews

In *Journey through Genius*, author William Dunham strikes an extraordinary balance between the historical and technical. He devotes each chapter to a principal result of mathematics, such as the solution of the cubic series and the divergence of the harmonic series. Not only does this book tell the stories of the people behind the math, but it also includes discussions and rigorous proofs of the relevant mathematical results.

"An inspired piece of intellectual history." — Los Angeles Times "It is mathematics presented as a series of works of art; a fascinating lingering over individual examples of ingenuity and insight. It is mathematics by lightning flash." — Isaac Asimov "Dunham deftly guides the reader through the verbal and logical intricacies of major mathematical questions, conveying a splendid sense of how the greatest mathematicians from ancient to modern times presented their arguments." — Ivars Peterson, author of *The Mathematical Tourist*

For those who enjoy Math history, this book is fascinating. It reads like a novel with bits of history in discovery of the pieces of math laws and progressions. Chapter two on Euclid's proof of the Pythagorean Theorem is priceless and worth the price of the book alone. It shows how those with true math genius arrived at conclusions without having the math laws and rules used today. How those with genius had true enthusiasm for their findings. We read where the "modern notion" of a "limit" in calculus was introduced. It shows the exhaustive work and comical experiences of true math genius. This book states a math proposition and gives the possible origin of the discovery in finding satisfactory answers. There are short biographies of folks like Euler and explains what in the world does he have to do with our math today. Awesome work.

This was a challenging book for me to read, but only because I don't have the education to be able to absorb all of the formulas and proofs presented. In fact many of the theorems required me to carefully read them so that I could understand them and their implications. That said, I think the content for the book was thoroughly researched and I enjoyed reading about the connections across centuries. I came away with an appreciation of the great mathematicians and admiration for their quest for truth. Mathematics do not have an emotional, political, religious, or artistic component. For the most part, mathematics advances have not been stimulated by the desire to solve practical problems. Ultimately however, our understanding of mathematics help to define truth in everyday life, from cereal box size and nutritional contents to paying income taxes. Though I would be hard pressed to explain any of the theorems, I did find the book inspirational. While most any mathematical relationship (like the ratio of a polygon within a circle) can be found with an internet search, it is fun to try to determine some of these on my own. That describes a great book: it stimulates you to think and expand your horizons long after you've read the last page.

This book came as a surprise for me, I was under the impression it would be a typical popular

science book; that is, a book that would basically go from the premise that the reader despises math and that if maybe, just maybe, they water down the content enough, they might convince the reader math isn't so bad after all. I was definitely wrong, and I am happy I was. The book knows exactly what it wants to do, and it does so with excellence. The structure is simple, we are given some historical background, then we get to know the mathematician behind the propositions and theorems, their work itself, and an epilogue commenting on the general content of the chapter. Everything flows beautifully, there is no abrupt change between one focus and the next. About the theorems: many steps are taken to get to the conclusion, the explanation is clear, we are given pictures and diagrams aplenty to always have a visual reference, and amazingly enough, the tone is not condescending. Besides knowledge I took best from this book a better appreciation of the significance and intrinsic beauty of the propositions and theorems presented, as well as an appreciation for the mathematician behind the work himself; and inspiration to further pursue my studies in math and, hopefully, become myself a mathematician.

This is not a gee-whiz book that gushes about mathematics without showing the equations. The author provides a lively history of some very interesting discoveries in mathematics. He does not shy away from using mathematical symbols and equations to explain the reasoning that led to the discoveries. Because he uses modern math symbology, the explanations are clear and understandable for any reader who is comfortable with algebra. I had always wondered how the solution to the cubic was derived. Dunham explains this in detail, to my great delight. The chapters about the work of Leonhard Euler are exceptionally fine. Each chapter reveals the working of a great mind and exposes another layer of the fascinating realm of mathematics. This would be a good gift for a mathematically-inclined student.

The author modestly refers to the journey as that of others. In fact, writing his book was an expression of his own genius. True, he chronicled great mathematicians' works, but to weave things together as he did required a spirit kindred to their own. The book looks at the lives and works of several mathematicians. Results are put into sharp perspective. Unlike anything that I had read before, Dunham describes the reasons that things were of interest, rather than merely saying what the results were. Instead of only giving the result, he derives it, so that the reader has a visceral grasp of what's going on. I'm waiting for the sequel.

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