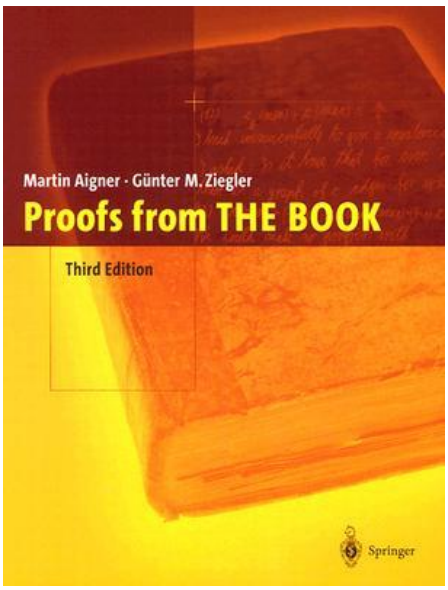

Proofs from THE BOOK

Martin Aigner

Proofs from THE BOOK

Martin Aigner

Proofs from THE BOOK Martin Aigner

From the Reviews:

"... Inside PFTB (Proofs from The Book) is indeed a glimpse of mathematical heaven, where clever insights and beautiful ideas combine in astonishing and glorious ways. There is vast wealth within its pages, one gem after another. Some of the proofs are classics, but many are new and brilliant proofs of classical results. ...Aigner and Ziegler... write: "... all we offer is the examples that we have selected, hoping that our readers will share our enthusiasm about brilliant ideas, clever insights and wonderful observations." I do. ... " *Notices of the AMS, August 1999*

"... the style is clear and entertaining, the level is close to elementary ... and the proofs are brilliant. ..." *LMS Newsletter, January 1999*

This third edition offers two new chapters, on partition identities, and on card shuffling. Three proofs of Euler's most famous infinite series appear in a separate chapter. There is also a number of other improvements, such as an exciting new way to "enumerate the rationals".

Proofs from THE BOOK Details

Date	:	Published November 13th 2003 by Springer (first published December 31st 1998)
ISBN	:	9783540404606
Author	:	Martin Aigner
Format	:	Hardcover 240 pages
Genre	:	Science, Mathematics, Nonfiction, Reference, Textbooks

From Reader Review Proofs from THE BOOK for online ebook

NumberLord says

A collection of some beautiful results from number theory, combinatorics, and geometry.

Nguy?n says

The book-in Erdos's sense- is not completed, but it is still a wonderful one!

Nick Black says

What a delight! There's plenty of distinguished results from various fields here that were new to me, and the proofs are as sweet and succulent as advertised. Definitely a fine selection for anyone in love with math and beautiful results.

Ushan says

This is a collection of beautiful mathematical proofs. I now know two proofs of the divergence of the harmonic series of primes, Euler's and Erd?s's; it is easy to see where Euler's proof is coming from (given modern mathematical notation, which was not available to Euler and which he helped invent), but how Erd?s came up with his proof, I cannot comprehend.

Ji says

such a great book is worth marking..

Ege Özmeral says

Bu kitab?n 5th edition'?n pdf'si var. ODTÜ Kütüphanesi eski versiyon olabilir.

Maurizio Codogno says

Che cos'è Il Libro? Forse la Bibbia? In un certo senso sì. Secondo Paul Erd?s, Dio (o The Great Fascist, come lo chiamava lui) aveva un libro con tutte le dimostrazioni matematiche più belle ed eleganti, e ogni tanto qualche mortale riusciva a dargli un'occhiata e trovarne una... che suscitava ammirazione e invidia negli altri matematici. Occhei, il 99,9% degli esseri umani non capisce la differenza, ma da quando in qua

questo è motivo per lasciare perdere?
Questo libro raccoglie alcune dimostrazioni che a detta degli autori possono stare nel Libro. Attenzione! Non è affatto detto che queste dimostrazioni siano "facili", diciamo alla portata di uno studente delle superiori; spesso gli autori hanno preferito lavorare sull'inaspettatezza, e sull'usare tecniche che a prima vista non abbiano nulla a che fare con i problemi di partenza. Però ci sono delle chicche davvero belle, che meritano davvero la lettura e l'ammirazione almeno di chi apprezza la matematica come un'arte (quale in effetti è...) e non come una scienza.

Nishant Pappireddi says

This book gives relatively elegant proofs of theorems from many different fields of mathematics, and often gives multiple proofs for the same theorem. It does require some calculus and linear algebra background, but if you have that, you should be able to follow most of the proofs in this book. There were a couple of times where I thought there was a more elegant proof that was not included (such as Kempe's proof of the 5 color theorem), but still, this collection of proofs is as good as advertised.

Lewis Cawthorne says

Sitting on my shelf at he lab. Was rather inaccessible to quick skimming. Looking forward o sitting down with pape, pen, and time.

Amit Kumar says

Good book

B. P. C. says

Elegance, beauty, inspiration and -- why not? -- passion. Truly a devotional book for those who worship the God of the Proofs.

Shubhendu Trivedi says

The late mathematician and philosopher Gian-Carlo Rota referring to the age old (and perhaps unanswerable) question - "are mathematical ideas invented or discovered?" would say that mathematics led a double life. One of these lives dealt with facts, that mathematicians communicate and study much like taxonomists. Mathematical facts are as useful as the facts of any other Science and no matter how abstruse invariably find applications as well. Quoting Rota: "The facts of today's mathematics are the springboard for the Science of tomorrow.".The second life deals with proofs: the process of discovering those facts. A mathematical proof consists of starting with a set of axioms/definitions; well established mathematical facts, and logically deduce, by pure reason the said fact. However there is a hidden circularity here, to come up

with "elegant" and "englightening" proofs one must first start with the right definitions to work with or risk end up getting lost or constructing a contraption for a proof from which almost no understandin about the problem might be salvaged. Much of the art of mathematical proof lies in the leap of imagination needed to come up with the right starting definitions. One might say that the simplest, most elegant and beautiful proofs start with just the right definition, thus also maximizing the insight that can be gained into the problem.

One can not learn this art without living with it for years. This book is one of those gems that can help you learn and appreciate this art and help develop a good nose for the "bare minimum" that fits. It is not a book to be read cover to cover. It is a book to be kept by your bedside and read time in and time again, keeping with you a certain proof for weeks till you have absorbed and appreciated its genesis completely. This book is filled with some of the most elegant proofs known and the background needed to appreciate them is minimal too. I personally bought this book on reading Furstenberg's very elegant and unusual topological proof of the infinitude of primes.

The origin of the name of this book is a part of mathematical lore. The legendary mathematician Paul Erdos, sort of as a half joke, talked about this "book" of God that contained all the beautiful and elegant proofs and that the job of mathematicians was only to try to discover proofs from the BOOK. This book was suggested by the authors as a first approximation to this BOOK, an idea that Erdos was very enthusiastic about and made many suggestions toward. Unfortunately he passed away before the book was published and could not be listed as a co-author. Nevertheless this book, by its eclectic choice of proofs and crazy ideas perhaps comes close to describing and teaching what mathematicians mean when they say that a proof is beautiful. It's hard to define, but one knows it when one sees it. This book will train your eye and you would be glad for having bought it.

Benjamin says

This is a very enjoyable read. Each chapter is devoted to a mathematical result that can either be proved simply or elegantly, or can be used in such a proof. For the most part, the chapters are self-contained. Elementary definitions and concepts, such as scalar products and the pigeon-hole principle, are introduced, but it is hard to imagine that the book would be very meaningful for a reader who was not already familiar with such topics.

my favorite quote: "But to tell the truth, what they really want to prove, once in their lifetime, is a Lemma, like the one by Fatou in analysis, the Lemma of Gauss in number theory, or the Burnside-Frobenius Lemma in combinatorics."

Pavan Bharadwaj says

I hesitate to call this a textbook (and I make it a point not to add them to my list) because every person I know who has read this has done it solely for pleasure and we all remember the lines not because we tried, but because it took us briefly to another world. This book is a comic, a Bible and a whodunnit - makes you smile at the world even in times of trouble, makes you subscribe to a lifestyle and makes you stay at the edge of your seat, perhaps even after you've read the whole thing.