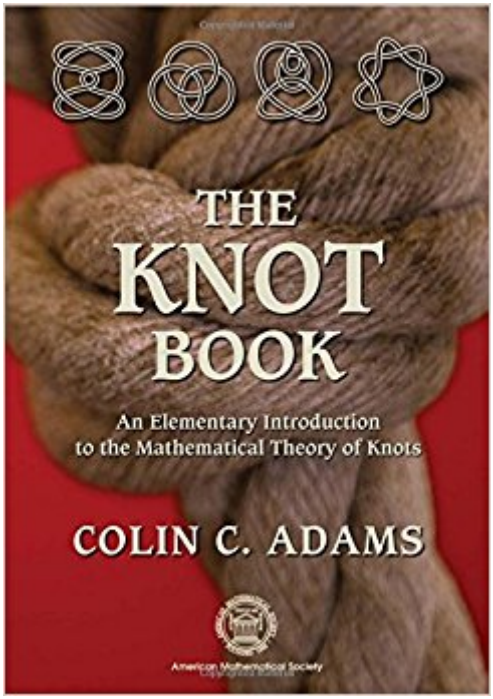
The Knot Book



Synopsis

Knots are familiar objects. We use them to moor our boats, to wrap our packages, to tie our shoes. Yet the mathematical theory of knots quickly leads to deep results in topology and geometry. "The Knot Book" is an introduction to this rich theory, starting with our familiar understanding of knots and a bit of college algebra and finishing with exciting topics of current research. "The Knot Book" is also about the excitement of doing mathematics. Colin Adams engages the reader with fascinating examples, superb figures, and thought-provoking ideas. He also presents the remarkable applications of knot theory to modern chemistry, biology, and physics. This is a compelling book that will comfortably escort you into the marvelous world of knot theory. Whether you are a mathematics student, someone working in a related field, or an amateur mathematician, you will find much of interest in "The Knot Book".Colin Adams received the Mathematical Association of America (MAA) Award for Distinguished Teaching and has been an MAA Polya Lecturer and a Sigma Xi Distinguished Lecturer. Other key books of interest available from the "AMS" are "Knots and Links" and "The Shoelace Book: A Mathematical Guide to the Best (and Worst) Ways to Lace your Shoes".

Book Information

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Customer Reviews

In February 2001, scientists at the Department of Energy’s Los Alamos National Laboratory announced that they had recorded a simple knot untying itself. Crafted from a chain of nickel-plated steel balls connected by thin metal rods, the three-crossing knot stretched, wiggled, and bent its way out of its predicament--a neat trick worthy of an inorganic Houdini, but more than that, a critical discovery in how granular and filamentary materials such as strands of DNA and polymers entangle

and enfold themselves. A knot seems a simple, everyday thing, at least to anyone who wears laced shoes or uses a corded telephone. In the mathematical discipline known as topology, however, knots are anything but simple: at 16 crossings of a "closed curve in space that does not intersect itself anywhere," a knot can take one of 1,388,705 permutations, and more are possible. All this thrills mathematics professor Colin Adams, whose primer offers an engaging if challenging introduction to the mysterious, often unproven, but, he suggests, ultimately knowable nature of knots of all kinds--whether nontrivial, satellite, torus, cable, or hyperbolic. As perhaps befits its subject, Adams's prose is sometimes, well, tangled ("a knot is amphicheiral if it can be deformed through space to the knot obtained by changing every crossing in the projection of the knot to the opposite crossing"), but his book is great fun for puzzle and magic buffs, and a useful reference for students of knot theory and other aspects of higher mathematics. --Gregory McNamee --This text refers to an out of print or unavailable edition of this title.

"Amazingly understandable ... After reading it twice, I still pick it up and scan it ... this book belongs in every mathematical library." ---- Charles Ashbacher, Book Reviews Editor, Journal of Recreational Mathematics"Throughout the book there are lots of exercises of various degrees of difficulty. Many 'unsolved questions' provide opportunity for further research. I liked reading this book. ... well written, enjoyable to read, and very accessible." ---- Zentralblatt MATH"I thought the book was very well suited for an undergraduate knot theory/ topology course. The exposition was very clear." ---- Jennifer Taback, Bowdoin College

I purchased this book as the textbook for a senior-level mathematics course in my undergrad. However, this book does not "read like a textbook." This book has been one of the easiest reads in a mathematics-heavy book I have ever had the pleasure of laying my eyes on. The pictures are clear, the words are concise, the ideas are organized logically and in proper order such that ideas are clearly described and explained in a manner that you don't have to be a mathematics major to understand what is being talked about.While I purchased this book as a necessity for my coursework, if you have any kind of interest in mathematics (or just logic/puzzle games) the book is extremely interesting and you will learn A LOT.Highly recommended. Very well-done book, especially for a topic as "obscure" as knot theory.

This book is written very well. I use this book in conjunction with more formal Knot Theory books. The writing is simpler and easier to understand than the more technical books. It has been very

useful in helping me understand simple concepts needed to do my research.

Awesome book, very understandable. People get a kick out of it.

simple and good introduction to the subject

In fact it’s quite good. I read this as an undergraduate. It was sufficiently interesting that I’m reading it again just because.

This a really great book. It has everything needed for doing a Course in Knot Theory just by your own. It contains all level exercises from the bare beginner to the open questions in the field. If you love Math, I pretty sure you’ll enjoy this book pretty much.

Wonderful mathematics book. Need to know some math, but very well written.

One can make nothing wrong buying this book. It gives an easy introduction, and most parts are well explained. Don’t expect to become an expert in knot theory after reading it but at least you are then familiar with the basics.

Frequently Asked Questions The Knot Complete Guide to Weddings: The Ultimate Source of Ideas, Advice, and Relief for the Bride and Groom and Those Who Love Them The Knot Guide For The Mother of the Bride