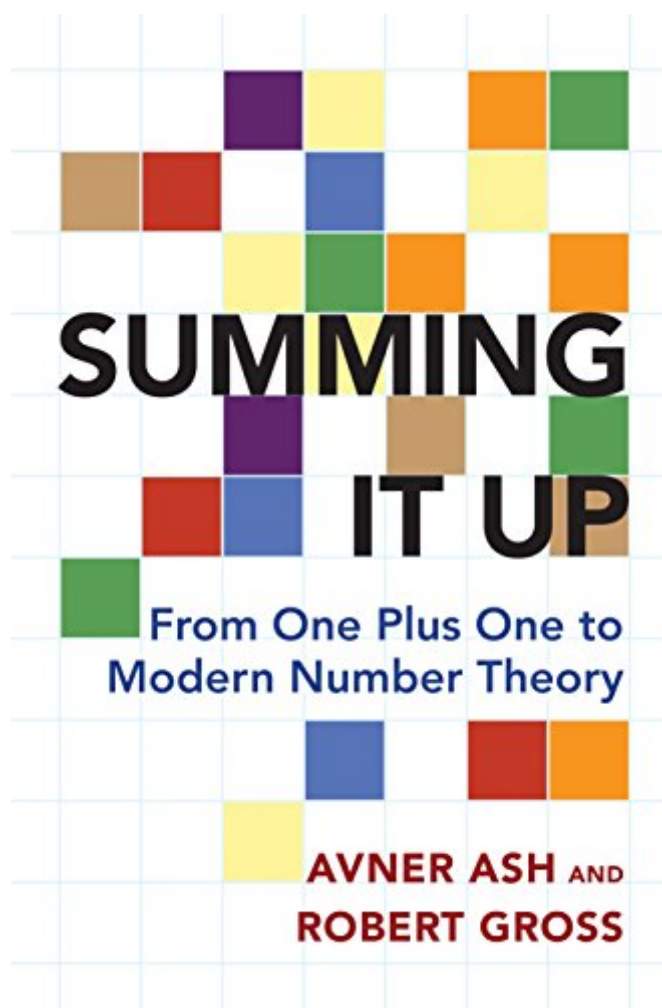


The book was found

Summing It Up: From One Plus One To Modern Number Theory



Synopsis

We use addition on a daily basisâyet how many of us stop to truly consider the enormous and remarkable ramifications of this mathematical activity? *Summing It Up* uses addition as a springboard to present a fascinating and accessible look at numbers and number theory, and how we apply beautiful numerical properties to answer math problems. Mathematicians Avner Ash and Robert Gross explore addition's most basic characteristics as well as the addition of squares and other powers before moving onward to infinite series, modular forms, and issues at the forefront of current mathematical research. Ash and Gross tailor their succinct and engaging investigations for math enthusiasts of all backgrounds. Employing college algebra, the first part of the book examines such questions as, can all positive numbers be written as a sum of four perfect squares? The second section of the book incorporates calculus and examines infinite seriesâlong sums that can only be defined by the concept of limit, as in the example of $1 + 1/2 + 1/4 + \dots = ?$ With the help of some group theory and geometry, the third section ties together the first two parts of the book through a discussion of modular formsâthe analytic functions on the upper half-plane of the complex numbers that have growth and transformation properties. Ash and Gross show how modular forms are indispensable in modern number theory, for example in the proof of Fermat's Last Theorem. Appropriate for numbers novices as well as college math majors, *Summing It Up* delves into mathematics that will enlighten anyone fascinated by numbers.

Book Information

File Size: 13070 KB

Print Length: 238 pages

Publisher: Princeton University Press (May 17, 2016)

Publication Date: May 17, 2016

Sold by:Â Digital Services LLC

Language: English

ASIN: B018WNVEDI

Text-to-Speech: Enabled

X-Ray: Not Enabled

Word Wise: Not Enabled

Lending: Not Enabled

Enhanced Typesetting: Enabled

Best Sellers Rank: #225,585 Paid in Kindle Store (See Top 100 Paid in Kindle Store) #11

inÂ Kindle Store > Kindle eBooks > Nonfiction > Science > Mathematics > Popular & Elementary > Counting & Numeration #15 inÂ Kindle Store > Kindle eBooks > Nonfiction > Science > Mathematics > Pure Mathematics > Number Theory #55 inÂ Books > Science & Math > Mathematics > Popular & Elementary > Counting & Numeration

Customer Reviews

I have the earlier two books by Ash and Gross. I particularly like "Elliptic Tales," and so was anticipating this introduction to modular forms. But this book doesn't quite work. The book is divided into three parts -- 1) finite sums, 2) infinite sums, and 3) modular forms. The recurring theme that binds together the three parts is expressing numbers as sums of squares and of calculating the number of ways this can be done. In this connection, Bernoulli numbers (and functions) allow the authors to segue from the first part to the second. The discussion of Bernoulli numbers, the Riemann zeta-function, and generating functions is woefully brief -- considering the conceptual leap required from the first part to the second and considering that the target readership is assumed to have no background in complex analysis. But this is a minor quibble. The third part attempts to introduce modular forms and in this connection discusses $SL_2(\mathbb{Z})$, fundamental domains, q -expansions, dimensions of vector spaces of modular forms, Hecke operators, and L -functions. The chapter on applications includes some desultory discussion of partitions that doesn't lead anywhere and a worked example for the number of ways 6 can be expressed as a sum of squares -- yet which doesn't really employ the topics mentioned above. It seems to be a mix of weak heuristic explanation coupled with one solitary example. If the target reader is a scientific layman, I doubt he'll be able to follow the discussion. If a math undergrad, the discussion won't be ample enough, nor will it be precise and structured enough. To be fair, the math is difficult. My contention is that anyone trying to make this palatable to a lay readership will fail.

[Download to continue reading...](#)

Summing It Up: From One Plus One to Modern Number Theory Number, Shape, & Symmetry: An Introduction to Number Theory, Geometry, and Group Theory A Friendly Introduction to Number Theory (4th Edition) (Featured Titles for Number Theory) TI-84 Plus Tutorials: The TI-84 Plus for Beginners: Get Started with the TI-84 Plus Graphing Calculator Weight Watchers: Weight Watchers Cookbook-> Watchers Cookbook- Weight Watchers 2016 Weight Watchers Cookbook - Points Plus - Points Plus-Weight ... Points Plus, Weight Watchers 2016) (Volume 1) How to Protect Your Assets From Probate PLUS Lawsuits PLUS Nursing Home Expenses with the Living Trust Plus Summing Up: The Science of Reviewing Research Summing Up Color-by-Number: Butterflies: 30+ fun &

relaxing color-by-number projects to engage & entertain Color-by-Number: Animals: 30+ fun & relaxing color-by-number projects to engage & entertain Contemporary's Number Power 6: Real World Approach to Math : Word Problems (The number power series) The Sixteenth Round: From Number 1 Contender to Number 45472 Cooking for One: 365 Recipes For One, Quick and Easy Recipes (Healthy Cooking for One, Easy Cooking for One, One Pot, One Pan) My iPhone (Covers iOS 9 for iPhone 6s/6s Plus, 6/6 Plus, 5s/5C/5, and 4s) (9th Edition) My iPhone for Seniors (Covers iOS 9 for iPhone 6s/6s Plus, 6/6 Plus, 5s/5C/5, and 4s) (My...) C++: C++ in 8 Hours, For Beginners, Learn C++ Fast! A Smart Way to Learn C Plus Plus, Plain & Simple, Learn C++ Programming Language in Easy Steps, A Beginner's Guide, Start Coding Today! C++: Beginners Guide to Learn C++ Programming Fast and Hacking for Dummies (c plus plus, C++ for beginners, JAVA, programming computer, hacking, how to ... Programming, Coding, CSS, Java, PHP Book 5) Pediatric Nursing: Content Review PLUS Practice Questions (Davis's Success Plus) Fundamentals of Nursing: Content Review Plus Practice Questions (Davis's Success Plus) C++: The Ultimate Crash Course to Learning the Basics of C++ In No Time (c plus plus, C++ for beginners, programming computer, how to program) (HTML, Javascript, ... Java, C++ Course, C++ Development Book 3)

[Dmca](#)