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Using the Mathematics Literature The Saylor Foundation

Proceedings of the Fourth International Conference on Number Theory and Smarandache Problems.

Number Theory and Its Applications Springer Nature

An introduction to the Calculus, with an excellent balance between theory and technique. Integration is treated before differentiation--this is a departure from most modern texts, but it is historically correct, and it is the best way to establish the true connection between the integral and the derivative. Proofs of all the important theorems are given, generally preceded by geometric or intuitive discussion. This Second Edition introduces the mean-value theorems and their applications earlier in the text, incorporates a treatment of linear algebra, and contains many new and easier exercises. As in the first edition, an interesting historical introduction precedes each important new concept.

Analytic Number Theory, Approximation Theory, and Special Functions Springer Science & Business Media

This textbook covers the main topics in number theory as taught in universities throughout the world. Number theory deals mainly with properties of integers and rational numbers; it is not an organized theory in the usual sense but a vast collection of individual topics and results, with some coherent sub-theories and a long list of unsolved problems. This book excludes topics relying heavily on complex analysis and advanced algebraic number theory. The increased use of computers in number theory is reflected in many sections (with much greater emphasis in this edition). Some results of a more advanced nature are also given, including the Gelfond-Schneider theorem, the prime number theorem, and the Mordell-Weil theorem. The latest work on Fermat's last theorem is also briefly discussed. Each chapter ends with a collection of problems; hints or sketch solutions are given at the end of the book, together with various useful tables.

A Course in Number Theory Springer Science & Business Media
These notes serve as course notes for an undergraduate course in number theory. Most if not all universities worldwide offer introductory courses in number theory for math majors and in many cases as an elective course. The notes contain a useful introduction to important topics that need to be addressed in a course in number theory. Proofs of basic theorems are presented in an interesting and comprehensive way that can be read and understood even by non-majors with the exception in the last three chapters where a background in analysis, measure theory and abstract algebra is required. The exercises are carefully chosen to broaden the understanding of the concepts. Moreover, these notes shed light on analytic number theory, a subject that is rarely seen or approached by undergraduate students. One of the unique characteristics of these notes is the careful choice of topics and its importance in the theory of numbers. The freedom is given in the last two chapters because of the advanced nature of the topics that are presented.

Current Trends in Symmetric Polynomials with their Applications Springer Science & Business Media
This volume focuses on the classical theory of number-theoretic functions emphasizing algebraic and multiplicative techniques. It contains many structure theorems basic to the study of arithmetic functions, including several previously unpublished proofs. The author is head of the Dept. of Mathemati

Calculus Springer Science & Business Media
This book, in honor of Hari M. Srivastava, discusses essential developments in mathematical research in a variety of problems. It contains thirty-five articles, written by eminent scientists from the international mathematical community, including both research and survey works. Subjects covered include analytic number theory, combinatorics, special sequences of numbers and polynomials, analytic inequalities and applications, approximation of functions and quadratures, orthogonality and special and complex functions. The mathematical results and open problems discussed in this book are presented in a simple and self-contained manner. The book contains an overview of old and new results, methods, and theories toward the solution of longstanding problems in a wide scientific field, as well as new results in rapidly progressing areas of research. The book will be useful for researchers and graduate students in the fields of mathematics, physics and other computational and applied sciences.

Series Associated With the Zeta and Related Functions Springer Science & Business Media
In a manner accessible to beginning undergraduates, An Invitation to Modern Number Theory introduces many of the central problems, conjectures, results, and techniques of the field, such as the Riemann Hypothesis, Roth's Theorem, the Circle Method, and Random Matrix Theory. Showing how experiments are used to test conjectures and prove theorems, the book allows students to do original work on such problems, often using little more than calculus (though there are numerous remarks for those with deeper

backgrounds). It shows students what number theory theorems are used for and what led to them and suggests problems for further research. Steven Miller and Ramin Takloo-Bighash introduce the problems and the computational skills required to numerically investigate them, providing background material (from probability to statistics to Fourier analysis) whenever necessary. They guide students through a variety of problems, ranging from basic number theory, cryptography, and Goldbach's Problem, to the algebraic structures of numbers and continued fractions, showing connections between these subjects and encouraging students to study them further. In addition, this is the first undergraduate book to explore Random Matrix Theory, which has recently become a powerful tool for predicting answers in number theory. Providing exercises, references to the background literature, and Web links to previous student research projects, An Invitation to Modern Number Theory can be used to teach a research seminar or a lecture class.

History in Mathematics Education Infinite Study

This Special Issue presents research papers on various topics within many different branches of mathematics, applied mathematics, and mathematical physics. Each paper presents mathematical theories, methods, and their application based on current and recently developed symmetric polynomials. Also, each one aims to provide the full understanding of current research problems, theories, and applications on the chosen topics and includes the most recent advances made in the area of symmetric functions and polynomials.

Zeta and q-Zeta Functions and Associated Series and Integrals American Mathematical Soc.

This two-volume book is a modern introduction to the theory of numbers, emphasizing its connections with other branches of mathematics. Part A is accessible to first-year undergraduates and deals with elementary number theory. Part B is more advanced and gives the reader an idea of the scope of mathematics today. The connecting theme is the theory of numbers. By exploring its many connections with other branches a broad picture is obtained. The book contains a treasury of proofs, several of which are gems seldom seen in number theory books.

Introduction to Analytic Number Theory MIT Press

The Indian National Science Academy on the occasion ofthe Golden Jubilee Celebration (Fifty years of India's Independence) decided to publish a number of monographs on the selected fields. The editorial board of INS A invited us to prepare a special monograph in Number Theory. In reponse to this assignment, we invited several eminent Number Theorists to contribute expository/research articles for this monograph on Number Theory. Al though some ofthose invited, due to other preoccupations-could not respond positively to our invitation, we did receive fairly encouraging response from many eminent and creative number theorists throughout the world. These articles are presented herewith in a logical order. We are grateful to all those mathematicians who have sent us their articles. We hope that this monograph will have a significant impact on further development in this subject. R. P. Bambah v. C. Dumir R. J. Hans-Gill A Centennial History of the Prime Number Theorem Tom M. Apostol The Prime Number Theorem Among the thousands of discoveries made by mathematicians over the centuries, some stand out as significant landmarks. One of these is the prime number theorem, which describes the asymptotic distribution of prime numbers. It can be stated in various equivalent forms, two of which are: x (I) K(X) ‴ -I - as x --+ 00, ogx and Pn ‴ n log n as n --+ 00. (2) In (1), K(X) denotes the number of primes P ::s x for any x > O.

The William Lowell Putnam Mathematical Competition 1985–2000: Problems, Solutions, and Commentary Courier Corporation

Zeta and q-Zeta Functions and Associated Series and

Integrals is a thoroughly revised, enlarged and updated version of Series Associated with the Zeta and Related Functions. Many of the chapters and sections of the book have been significantly modified or rewritten, and a new chapter on the theory and applications of the basic (or q-) extensions of various special functions is included. This book will be invaluable because it covers not only detailed and systematic presentations of the theory and applications of the various methods and techniques used in dealing with many different classes of series and integrals associated with the Zeta and related functions, but stimulating historical accounts of a large number of problems and well-classified tables of series and integrals. Detailed and systematic presentations of the theory and applications of the various methods and techniques used in dealing with many different classes of series and integrals associated with the Zeta and related functions

Mathematical Analysis Infinite Study

Challenge: Can you find all the integers a, b, c satisfying 2a2+3b2=5c2? Looks simple, and there are in fact a number of easy solutions. But most of them turn out to be anything but obvious! There are infinitely many possibilities, and as any computer will tell you, each of a, b, c will usually be large. So the challenge remains … Find all integers a, b, c satisfying 2a2+3b2=5c2 A major advance in number theory means this book can give an easy answer to this and countless similar questions. The idea behind the approach is transforming a degree-two equation in integer variables a, b, c into a plane curve defined by a polynomial. Working with the curve makes obtaining solutions far easier, and the geometric solutions then get translated back into integers. This method morphs hard problems into routine ones and typically requires no more than high school math. (The complete solution to 2a2+3b2=5c2 is included in the book.) In addition to equations of degree two, the book addresses degree-three equations—a branch of number theory that is today something of a cottage industry, and these problems translate into “elliptic curves”. This important part of the book includes many pictures along with the exposition, making the material meaningful and easy to grasp. This book will fit nicely into an introductory course on number theory. In addition, the many solved examples, illustrations, and exercises make self-studying the book an option for students, thus becoming a natural candidate for a capstone course.

Number Theory Oxford University Press

This reference serves as a reader-friendly guide to every basic tool and skill required in the mathematical library and helps mathematicians find resources in any format in the mathematics literature. It lists a wide range of standard texts, journals, review articles, newsgroups, and Internet and database tools for every major subfield in mathematics and details methods of access to primary literature sources of new research, applications, results, and techniques. Using the Mathematics Literature is the most comprehensive and up-to-date resource on mathematics literature in both print and electronic formats, presenting time-saving strategies for retrieval of the latest information.

The Prime Number Theorem Birkhäuser

Designed as a reference work and also as a graduate-level textbook, this volume presents an up-to-date and comprehensive account of the theories and applications of the various methods and techniques used in dealing with problems involving closed-form evaluations of (and representations of the Riemann Zeta function at positive integer arguments as) numerous families of series associated with the Riemann Zeta function, the Hurwitz Zeta function, and

their extensions and generalizations such as Lerch's transcendent (or the Hurwitz-Lerch Zeta function). Audience: This book is intended for professional mathematicians and graduate students in mathematical sciences (both pure and applied).

An Open Door to Number Theory Introduction to Analytic Number Theory At first glance the prime numbers appear to be distributed in a very irregular way amongst the integers, but it is possible to produce a simple formula that tells us (in an approximate but well defined sense) how many primes we can expect to find that are less than any integer we might choose. The prime number theorem tells us what this formula is and it is indisputably one of the great classical theorems of mathematics. This textbook gives an introduction to the prime number theorem suitable for advanced undergraduates and beginning graduate students. The author's aim is to show the reader how the tools of analysis can be used in number theory to attack a 'real' problem, and it is based on his own experiences of teaching this material.

Elementary Number Theory with Applications Springer Science & Business Media

A new edition of a classical treatment of elliptic and modular functions with some of their number-theoretic applications, this text offers an updated bibliography and an alternative treatment of the transformation formula for the Dedekind eta function. It covers many topics, such as Hecke’s theory of entire forms with multiplicative Fourier coefficients, and the last chapter recounts Bohr’s theory of equivalence of general Dirichlet series.

Scientia Magna, Vol. 1, No. 2, 2005 Springer Science & Business Media

Collection of papers from various scientists dealing with smarandache notions in science.

Modular Functions and Dirichlet Series in Number Theory World Scientific Publishing Company

This Book is devoted to the proceedings of the Sixth International Conferenceon Number Theory and Smarandache Notions held in Tianshui during April 24-25,2010. The organizers were Prof. Zhang Wenpeng and Prof. Wangsheng He from Tianshui Normal University. The conference was supported by Tianshui Normal University and there were more than 100 participants. Elsevier

Developed from the author's successful two-volume Calculus text this book presents Linear Algebra without emphasis on abstraction or formalization. To accommodate a variety of backgrounds, the text begins with a review of prerequisites divided into precalculus and calculus prerequisites. It continues to cover vector algebra, analytic geometry, linear spaces, determinants, linear differential equations and more.

Excursions in Number Theory MDPI

"This book is the first volume of a two-volume textbook for undergraduates and is indeed the crystallization of a course offered by the author at the California Institute of Technology to undergraduates without any previous knowledge of number theory. For this reason, the book starts with the most elementary properties of the natural integers. Nevertheless, the text succeeds in presenting an enormous amount of material in little more than 300 pages."-—MATHEMATICAL REVIEWS