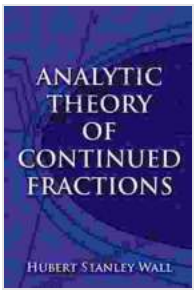
Unlock the Secrets of Continued Fractions with the Analytic Theory of Continued Fractions from Dover on Mathematics

Continued fractions, a fascinating and versatile subject in mathematics, have been studied for centuries. They find applications in various fields, including number theory, approximation theory, and complex analysis. The Analytic Theory of Continued Fractions, a classic work by H. S. Wall, provides a comprehensive and rigorous treatment of this intriguing topic.

What are Continued Fractions?

Continued fractions are a way of expressing a real number as an infinite series of fractions. For instance, the square root of 2 can be written as the continued fraction:



Analytic Theory of Continued Fractions (Dover Books on Mathematics) by Philip Martin McCaulay

4.3 out of 5

Language	: English
File size	: 94515 KB
Text-to-Speech	: Enabled
Screen Reader	: Supported
Enhanced typesetting	: Enabled
Print length	: 556 pages
Lending	: Enabled

$$\sqrt{2} = 1 + 1/(2 + 1/(2 + 1/(2 + ...)))$$

Each fraction in the series is called a partial quotient. By truncating the series at any point, we obtain a rational approximation to the original number.

The Analytic Theory of Continued Fractions

H. S. Wall's Analytic Theory of Continued Fractions is a seminal work that delves into the analytic aspects of continued fractions. The book covers a wide range of topics, including:

- The convergence of continued fractions
- The distribution of partial quotients
- The approximation of irrational numbers
- The connection between continued fractions and other areas of mathematics, such as number theory and complex analysis

Wall's approach is rigorous and systematic, providing readers with a deep understanding of the subject. The book is written in a clear and engaging style, making it accessible to both researchers and advanced students.

Applications of Continued Fractions

Continued fractions have a wide variety of applications across mathematics. Some of the most notable applications include:

- **Number theory:** Continued fractions are used to study the distribution of prime numbers and to solve Diophantine equations.
- **Approximation theory:** Continued fractions provide a powerful method for approximating irrational numbers and functions.

- **Complex analysis:** Continued fractions are used to study the convergence of infinite series and to evaluate integrals.
- **Computer science:** Continued fractions are used in algorithms for cryptography and coding theory.

Why Read the Analytic Theory of Continued Fractions?

The Analytic Theory of Continued Fractions is an essential resource for anyone interested in the theory and applications of continued fractions. The book provides a comprehensive and rigorous treatment of the subject, making it a valuable reference for researchers and advanced students.

Whether you are a mathematician working in number theory, approximation theory, or complex analysis, or a computer scientist interested in cryptography or coding theory, the Analytic Theory of Continued Fractions has something to offer.

Dover on Mathematics

Dover Publications is a leading publisher of high-quality, affordable books on a wide range of subjects, including mathematics, science, history, and literature. Dover on Mathematics is a renowned imprint that offers a vast collection of classic and contemporary works in mathematics.

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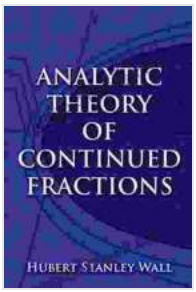
The Analytic Theory of Continued Fractions is a seminal work that provides a comprehensive and rigorous treatment of this intriguing topic. The book is a valuable resource for researchers and advanced students in mathematics, computer science, and other fields. If you are interested in the theory and applications of continued fractions, this book is a must-read.

Free Download your copy of the Analytic Theory of Continued Fractions from Dover on Mathematics today and unlock the secrets of this fascinating subject!



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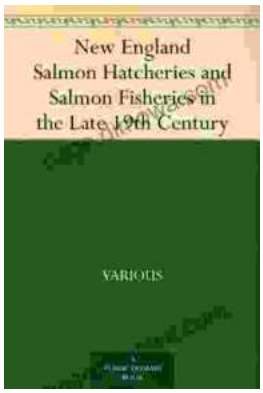

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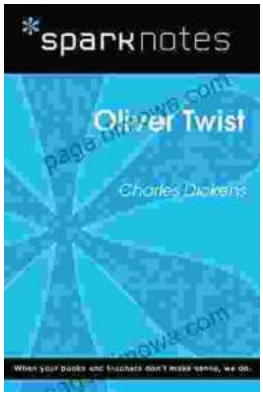

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