Riemann Surfaces, Several Complex Variables, Abelian Functions, Higher Modular Functions

A Comprehensive Guide to Higher Mathematics

This comprehensive and engaging book provides a deep dive into the fascinating world of Riemann surfaces, several complex variables, abelian functions, and higher modular functions. Written by renowned experts in the field, this volume is an indispensable resource for mathematicians, physicists, and engineers seeking to expand their knowledge and understanding of these complex topics.

A Journey Through Riemann Surfaces

The book begins with an exploration of Riemann surfaces, which are one-dimensional complex manifolds that play a fundamental role in mathematics and physics. Readers will gain a thorough understanding of the topological and geometric properties of Riemann surfaces, as well as their applications in algebraic geometry and complex analysis.
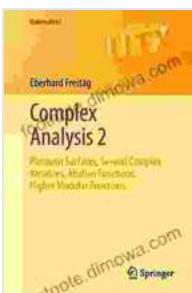
Complex Analysis 2: Riemann Surfaces, Several Complex Variables, Abelian Functions, Higher Modular Functions (Universitext) by Gernot Schaller

★★★★★ 5 out of 5

Language	: English
File size	: 9165 KB
Screen Reader	: Supported
Print length	: 519 pages
X-Ray for textbooks	: Enabled

Delving into Several Complex Variables

Next, the book ventures into the realm of several complex variables. Readers will learn about the theory of analytic functions in several variables, including their Cauchy-Riemann equations, singularities, and contour integrals. The book also covers the interplay between several complex variables and differential geometry.

Unveiling Abelian Functions

The book then delves into the fascinating world of abelian functions, which are meromorphic functions on Riemann surfaces that have certain periodicity properties. Readers will explore the theory of theta functions and their applications in the study of algebraic curves and modular forms.

Higher Modular Functions: A Deeper Dive

The final part of the book focuses on higher modular functions, which are generalizations of modular forms that involve multiple complex variables. Readers will gain insights into the intricate structure and applications of these functions in number theory, representation theory, and physics.

Key Features

- Comprehensive coverage of Riemann surfaces, several complex variables, abelian functions, and higher modular functions

- Written by world-renowned experts in the field

- Includes numerous exercises and examples to reinforce understanding

- Provides a solid foundation for further research in mathematics and physics

Whether you are a seasoned mathematician seeking to deepen your knowledge or a student eager to embark on a new mathematical adventure, this book is the perfect guide. Its clear and engaging writing style, combined with its in-depth coverage of the subject matter, makes it an invaluable resource for anyone interested in the complexities of higher mathematics.
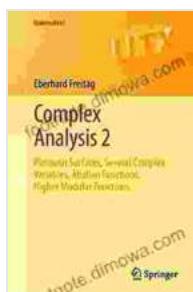
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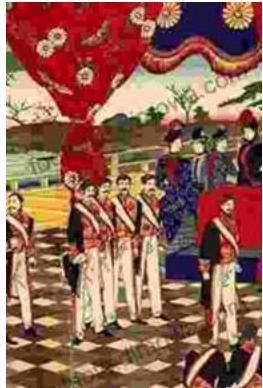
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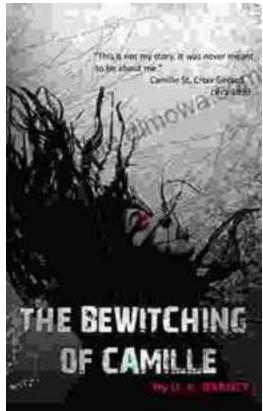
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