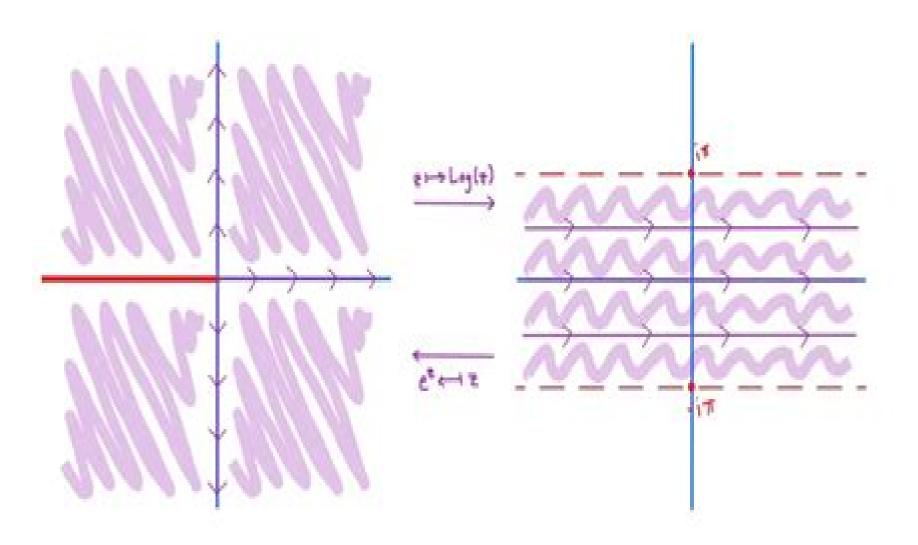
Functions of a complex variable



Applied Functions Of A Complex Variable

B. A. Fuchs, B. V. Shabat

Applied Functions Of A Complex Variable:

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Riemann zeta function the Riemann Hypothesis and a proof of the Prime Number Theorem Publisher Functions of a Complex Variable and Some of Their Applications B. A. Fuchs, B. V. Shabat, 1964-01-01 Functions of a Complex Variable and Some of Their Applications Volume I focuses on the fundamental ideas of the theory of functions of a complex variable This book consists of eight chapters Chapter I presents the fundamentals of complex analysis while Chapter II discusses the concept of conformal transformations The elementary functions are introduced in Chapter III In Chapter IV the complex potential for a plane vector field and application of the simplest methods of function theory are elaborated Chapter V deals with the basic integral theorems followed by a description of the expansions in series in Chapter VI Chapters VII and VIII are devoted to the analytical and geometric applications of the theory This volume is intended for undergraduate and postgraduate students of higher technical institutes and engineers aiming to increase their knowledge of theory **Applied Complex Variables** John W. Dettman, 2012-05-07 Fundamentals of analytic function theory plus lucid exposition of 5 important applications potential theory ordinary differential equations Fourier transforms Laplace transforms and asymptotic Applied Complex Variables for Scientists and Engineers Yue Kuen Kwok, 2010-06-24 This expansions Includes 66 figures introduction to complex variable methods begins by carefully defining complex numbers and analytic functions and proceeds to give accounts of complex integration Taylor series singularities residues and mappings Both algebraic and geometric tools are employed to provide the greatest understanding with many diagrams illustrating the concepts introduced The emphasis is laid on understanding the use of methods rather than on rigorous proofs Throughout the text many of the important theoretical results in complex function theory are followed by relevant and vivid examples in physical sciences This second edition now contains 350 stimulating exercises of high quality with solutions given to many of them Material has been updated and additional proofs on some of the important theorems in complex function theory are now included e g the Weierstrass Casorati theorem The book is highly suitable for students wishing to learn the elements of complex analysis in an applied context **Functions of a Complex Variable** Edgar Giraldus Phillips,1957 Handbook of Complex Variables Steven G. Krantz, 2012-12-06 This book is written to be a convenient reference for the working scientist student or engineer who needs to know and use basic concepts in complex analysis It is not a book of mathematical theory It is instead a book of mathematical practice All the basic ideas of complex analysis as well as many typical applications are treated Since we are not developing theory and proofs we have not been obliged to conform to a strict logical ordering of topics Instead topics have been organized for ease of reference so that cognate topics appear in one place Required background for reading the text is minimal a good ground ing in real variable calculus will suffice However the reader who gets maximum utility from the book will be that reader who has had a course in complex analysis at some time in his life This book is a handy compendium of all basic facts about complex variable theory But it is not a textbook and a person would be hard put to endeavor to learn the subject by reading this book Essential Mathematical Methods for Physicists, ISE Hans J. Weber, George B.

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analysis is assumed Advanced Mathematical Methods in Science and Engineering S.I. Hayek,2010-06-22 Classroom tested Advanced Mathematical Methods in Science and Engineering Second Edition presents methods of applied mathematics that are particularly suited to address physical problems in science and engineering Numerous examples illustrate the various methods of solution and answers to the end of chapter problems are included at the back of t

Introduction to Complex Analysis Michael E. Taylor, 2019-10-18 In this text the reader will learn that all the basic functions that arise in calculus such as powers and fractional powers exponentials and logs trigonometric functions and their inverses as well as many new functions that the reader will meet are naturally defined for complex arguments Furthermore this expanded setting leads to a much richer understanding of such functions than one could glean by merely considering them in the real domain For example understanding the exponential function in the complex domain via its differential equation provides a clean path to Euler's formula and hence to a self-contained treatment of the trigonometric functions Complex analysis developed in partnership with Fourier analysis differential equations and geometrical techniques leads to the development of a cornucopia of functions of use in number theory wave motion conformal mapping and other mathematical phenomena which the reader can learn about from material presented here This book could serve for either a one semester course or a two semester course in complex analysis for beginning graduate students or for well prepared undergraduates whose background includes multivariable calculus linear algebra and advanced calculus Computational Complex Analysis, Volume 3 Peter Henrici, 1993-04-16 Presents applications as well as the basic theory of analytic functions of one or several complex variables. The first volume discusses applications and basic theory of conformal mapping and the solution of algebraic and transcendental equations Volume Two covers topics broadly connected with ordinary differental equations special functions integral transforms asymptotics and continued fractions Volume Three details discrete fourier analysis cauchy integrals construction of conformal maps univalent functions potential theory in the plane and polynomial expansions Artificial Intelligence Methods in the Environmental Sciences Sue Ellen Haupt, Antonello Pasini, Caren Marzban, 2008-11-28 How can environmental scientists and engineers use the increasing amount of available data to enhance our understanding of planet Earth its systems and processes This book describes various potential approaches based on artificial intelligence AI techniques including neural networks decision trees genetic algorithms and fuzzy logic Part I contains a series of tutorials describing the methods and the important considerations in applying them In Part II many practical examples illustrate the power of these techniques on actual environmental problems International experts bring to life ways to apply AI to problems in the environmental sciences While one culture entwines ideas with a thread another links them with a red line Thus a red thread ties the book together weaving a tapestry that pictures the natural data driven AI methods in the light of the more traditional modeling techniques and demonstrating the power of these data based methods

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