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Qualitative and Quantitative Analysis of Nonlinear Systems - Michael Z. Zgurovsky 2017-07-11
Here, the authors present modern methods of analysis for nonlinear systems which may occur in fields such as physics, chemistry, biology, or economics. They concentrate on the following topics, specific for such systems: (a) constructive existence results and regularity theorems for all weak solutions; (b) convergence results for solutions and their approximations; (c) uniform global behavior of solutions in time; and (d) pointwise behavior of solutions for autonomous problems with possible gaps by the phase variables. The general methodology for the investigation of dissipative dynamical systems with several applications including nonlinear parabolic equations of divergent form, nonlinear stochastic equations of parabolic type, unilateral problems, nonlinear PDEs on Riemannian manifolds with or without boundary, contact problems as well as particular examples is established. As such, the book is addressed to a wide circle of mathematical, mechanical and engineering readers.
Mathematics Education in Africa - Brantina Chirinda 2022-11-28
This book is about mathematics teaching and learning in Africa during the Fourth Industrial Revolution. The Fourth Industrial Revolution (4IR) has evolved to utilize new technologies in the teaching and learning of Mathematics. It is characterized by the fusion of the biological, physical and digital worlds and embodies a new era of innovation in mathematics education, leading to the rapid emergence of new technologies for mathematics teaching and learning. Because 4IR in mathematics education is happening differently in various parts of Africa, the authors of the various chapters in this volume have positioned their work in their respective local contexts. The chapters address a wide variety of interests, concerns, and implications regarding 4IR and Mathematics Education in Africa. Additionally, a number of chapters address teaching mathematics in the context of the COVID-19 pandemic that has gripped the world. Other chapters discuss the implications of inequalities in Africa that effect mathematics education during 4IR. Chapters also incorporate arguments, observations, and suggestions to, improve and transform the teaching and learning of mathematics in Africa during the 4IR. This book highlights a new era of innovation in mathematics education in the context of the Fourth Industrial Revolution, leading to the rapid emergence of new technologies in mathematics teaching and learning. It is a valuable resource for graduate students, people with research interests in the fourth industrial revolution and mathematics educators at any level, including all mathematics teachers; mathematics education curriculum designers and policymakers.
Mathematical Systems Theory - G. Marchesini 2013-03-08
This volume is the record of lectures delivered at the Conference on Mathematical System Theory during the summer of 1975. The conference was held at the International Centre for Mechanical Sciences in Udine, Italy, and was supported by the Consiglio Nazionale delle Richerche of Italy and the International Centre for Mechanical Sciences. The aim of the conference was to encourage fruitful and active collaboration between researchers working in the diverse areas of system theory. It was also the hope of the organizers that mathematicians participating in the conference might become interested in the purely mathematical problems being raised by systems theory as a result of their participation. The success of the conference is to be measured by the extent to which these aims were fulfilled. Besides the formal programme of lectures recorded in this volume, many informal seminars were held. The cafes of Udine were often the scene of rich and varied discussions of recent developments in the field amongst the participants of the conference. Last but not least, listening to the ideas exposed in the lectures of others in a creative atmosphere was an important activity.
Entropy Methods for Diffusive Partial Differential Equations - Ansgar Jüngel 2016-06-17
This book presents a range of entropy methods for diffusive PDEs devised by many researchers in the course of the past few decades, which allow us to understand the qualitative behavior of solutions to diffusive equations (and Markov diffusion processes). Applications include the large-time asymptotics of solutions, the derivation of convex Sobolev inequalities, the existence and uniqueness of weak solutions, and the analysis of discrete and geometric structures of the PDEs. The purpose of the book is to provide readers an introduction to selected entropy methods that can be found in the research literature. In order to highlight the core concepts, the results are not stated in the widest generality and most of the arguments are only formal (in the sense that the functional setting is not specified or sufficient regularity is supposed). The text is also suitable for advanced master and PhD students and could serve as a textbook for special courses and seminars.
A Unified Computational Fluid Dynamics Framework from Rarefied to Continuum Regimes - Kun Xu 2021-06-10
This Element presents a unified computational fluid dynamics framework from rarefied to continuum regimes. The framework is based on the direct modelling of flow physics in a discretized space. The mesh size and time step are used as modelling scales in the construction of discretized governing equations. With the variation-of-cell Knudsen number, continuous modelling equations in different regimes have been obtained, and the Boltzmann and Navier-Stokes equations become two limiting equations in the kinetic and hydrodynamic scales. The unified algorithms include the discrete velocity method (DVM)–based unified gas-kinetic scheme (UGKS), the particlebased unified gas-kinetic particle method (UGKP), and the wave and particle–based unified gas-kinetic wave-particle method (UGKWP). The UGKWP is a multi-scale method with the particle for non-equilibrium transport and wave for equilibrium evolution. The particle dynamics in the rarefied regime and the hydrodynamic flow solver in the continuum regime have been unified according to the cell's Knudsen number.
Elliptic and Modular Functions from Gauss to Dedekind to Hecke - Ranjan Roy 2017-04-18
This thorough work presents the fundamental results of modular function theory as developed during the nineteenth and early-twentieth centuries. It features beautiful formulas and derives them using skillful and ingenious manipulations, especially classical methods often overlooked today. Starting with the work of Gauss, Abel, and Jacobi, the book then discusses the attempt by Dedekind to construct a theory of modular functions independent of elliptic functions. The latter part of the book explains how Hurwitz completed this task and includes one of Hurwitz's landmark papers, translated by the author, and delves into the work of Ramanujan, Mordell, and Hecke. For graduate students and experts in modular forms, this book demonstrates the relevance of these original sources and thereby provides the reader with new insights into contemporary work in this area.
Solvability, Regularity, and Optimal Control of Boundary Value Problems for PDEs - Pierluigi Colli 2017-11-03
This volume gathers contributions in the field of partial differential equations, with a focus on mathematical models in phase transitions, complex fluids and thermomechanics. These contributions are dedicated to Professor Gianni Gilardi on the occasion of his 70th birthday. It particularly develops the following thematic areas: nonlinear dynamic and stationary equations; well-posedness of initial and boundary value problems for systems of PDEs; regularity properties for the solutions; optimal control problems and optimality conditions; feedback stabilization and stability results. Most of the articles are presented in a self-contained manner, and describe new achievements and/or the state of the art in their line of research, providing interested readers with an overview of recent advances and future research directions in PDEs.

Mathematics and the Imagination - Edward Kasner 2013-04-22
With wit and clarity, the authors progress from simple arithmetic to calculus and non-Euclidean geometry. Their subjects: geometry, plane and fancy; puzzles that made mathematical history; tantalizing paradoxes; more. Includes 169 figures.
Logical Foundations of Computer Science - Sergei Artemov 2013-01-05
This book constitutes the refereed proceedings of the International Symposium on Logical Foundations of Computer Science, LFCS 2013, held in San Diego, CA, USA in January 2013. The volume presents 29 revised refereed papers carefully selected by the program committee. The scope of the Symposium is broad and includes constructive mathematics and type theory; logic, automata and automatic structures; computability and randomness; logical foundations of programming; logical aspects of computational complexity; logic programming and constraints; automated deduction and interactive theorem proving; logical methods in protocol and program verification; logical methods in program specification and extraction; domain theory logic; logical foundations of database theory; equational logic and term rewriting; lambda and combinatory calculi; categorical logic and topological semantics; linear logic; epistemic and temporal logics; intelligent and multiple agent system logics; logics of proof and justification; nonmonotonic reasoning; logic in game theory and social software; logic of hybrid systems; distributed system logics; mathematical fuzzy logic; system design logics; and other logics in computer science.
Issues in General and Specialized Mathematics Research: 2013 Edition - 2013-05-01
Issues in General and Specialized Mathematics Research: 2013 Edition is a ScholarlyEditions™ book that delivers timely, authoritative, and comprehensive information about General Mathematics. The editors have built Issues in General and Specialized Mathematics Research: 2013 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about General Mathematics in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in General and Specialized Mathematics Research: 2013 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.
MATHEMATICAL COMBINATORICS, Vol. 4 / 2017 - Linfan Mao
The Mathematical Combinatorics (International Book Series) is a fully refereed international book series with ISBN number on each issue, sponsored by the MADIS of Chinese Academy of Sciences and published in USA quarterly comprising 110-160 pages approx. per volume, which publishes original research papers and survey articles in all aspects of Smarandache multi-spaces, Smarandache geometries, mathematical combinatorics, non-euclidean geometry and topology and their applications to other sciences.
Hypergeometry, Integrability and Lie Theory - Erik Koelink 2022-08-30
This volume contains the proceedings of the virtual conference on Hypergeometry, Integrability and Lie Theory, held from December 7–11, 2020, which was dedicated to the 50th birthday of Jasper Stokman. The papers represent recent developments in the areas of representation theory, quantum integrable systems and special functions of hypergeometric type.
Algebraic Modeling of Topological and Computational Structures and Applications - Sofia Lambropoulou 2017-12-14
This interdisciplinary book covers a wide range of subjects, from pure mathematics (knots, braids, homotopy theory, number theory) to more applied mathematics (cryptography, algebraic specification of algorithms, dynamical systems) and concrete applications (modeling of polymers and ionic liquids, video, music and medical imaging). The main mathematical focus throughout the book is on algebraic modeling with particular emphasis on braid groups. The research methods include algebraic modeling using topological structures, such as knots, 3-manifolds, classical homotopy groups, and braid groups. The applications address the simulation of polymer chains and ionic liquids, as well as the modeling of natural phenomena via topological surgery. The treatment of computational structures, including finite fields and cryptography, focuses on the development of novel techniques. These techniques can be applied to the design of algebraic specifications for systems modeling and verification. This book is the outcome of a workshop in connection with the research project Thales on Algebraic Modeling of Topological and Computational Structures and Applications, held at the National Technical University of Athens, Greece in July 2015. The reader will benefit from the innovative approaches to tackling difficult questions in topology, applications and interrelated research areas, which largely employ algebraic tools.
Issues in Calculus, Mathematical Analysis, and Nonlinear Research: 2013 Edition - 2013-05-01
Issues in Calculus, Mathematical Analysis, and Nonlinear Research: 2013 Edition is a ScholarlyEditions™ book that delivers timely, authoritative, and comprehensive information about Mathematical Analysis. The editors have built Issues in Calculus, Mathematical Analysis, and Nonlinear Research: 2013 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Mathematical Analysis in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Calculus, Mathematical Analysis, and Nonlinear Research: 2013 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.
Recent Progress in the Theory of the Euler and Navier–Stokes Equations - James C. Robinson 2016-01-21
The rigorous mathematical theory of the Navier–Stokes and Euler equations has been a focus of intense activity in recent years. This volume, the product of a workshop in Venice in 2013, consolidates, surveys and further advances the study of these canonical equations. It consists of a number of reviews and a selection of more traditional research articles on topics that include classical solutions to the 2D Euler equation, modal dependency for the 3D Navier–Stokes equation, zero viscosity Boussinesq equations, global regularity and finite-time singularities, well-posedness for the diffusive Burgers equations, and probabilistic aspects of the Navier–Stokes equation. The result is an accessible summary of a wide range of active research topics written by leaders in their field, together with some exciting new results. The book serves both as a helpful overview for graduate students new to the area and as a useful resource for more established researchers.
Ready for Fall? Near-Term Effects of Voluntary Summer Learning Programs on Low-Income Students' Learning Opportunities and Outcomes - Jennifer Sloan McCombs 2014-12-16
As part of a randomized controlled trial study assessing the effect of district-run voluntary summer programs, this second report in a series looks at how summer programs affected student performance in certain categories in fall 2013.
Cross Diffusion Systems - Dung Le 2022-10-24
The introduction of cross diffusivity opens many questions in the theory of reactiondiffusion systems. This book will be the first to investigate such problems presenting new findings for researchers interested in studying parabolic and elliptic systems where classical methods are not applicable. In addition, The Gagliardo-Nirenberg inequality involving BMO norms is improved and new techniques are covered that will be of interest. This book also provides many open problems suitable for interested Ph.D students.
Nonsmooth Mechanics - Bernard Brogliato 2016-02-29
Now in its third edition, this standard reference is a comprehensive treatment of nonsmooth mechanical systems refocused to give more prominence to issues connected with control and modelling. It covers Lagrangian and Newton–Euler systems, detailing mathematical tools such as convex analysis and complementarity theory. The ways in which nonsmooth mechanics influence and are influenced by well-posedness analysis, numerical analysis and simulation, modelling and control are explained. Contact/impact laws, stability theory and trajectory-tracking control are given detailed exposition connected by a mathematical framework formed from complementarity systems and measure-differential inclusions. Links are established with electrical circuits with set-valued nonsmooth elements as well as with other nonsmooth dynamical systems like impulsive and piecewise linear systems. Nonsmooth Mechanics (third edition) retains the topical structure familiar from its predecessors but has been substantially rewritten, edited and updated to account for the significant body of results that have emerged in the twenty-first century—including developments in: the existence and uniqueness of solutions; impact models; extension of the

Lagrange–Dirichlet theorem and trajectory tracking; and well-posedness of contact complementarity problems with and without friction. Many figures (both new and redrawn to improve the clarity of the presentation) and examples are used to illustrate the theoretical developments. Material introducing the mathematics of nonsmooth mechanics has been improved to reflect the broad range of applications interest that has developed since publication of the second edition. The detail of some mathematical essentials is provided in four appendices. With its improved bibliography of over 1,300 references and wide-ranging coverage, Nonsmooth Mechanics (third edition) is sure to be an invaluable resource for researchers and postgraduates studying the control of mechanical systems, robotics, granular matter and relevant fields of applied mathematics. “The book’s two best features, in my view are its detailed survey of the literature... and its detailed presentation of many examples illustrating both the techniques and their limitations... For readers interested in the field, this book will serve as an excellent introductory survey.” Andrew Lewis in Automatica “It is written with clarity, contains the latest research results in the area of impact problems for rigid bodies and is recommended for both applied mathematicians and engineers.” Panagiotis D. Panagiotopoulos in Mathematical Reviews “The presentation is excellent in combining rigorous mathematics with a great number of examples... allowing the reader to understand the basic concepts.” Hans Troger in Mathematical Abstracts “/i>

Face To Face CAT 27 years Sectionwise & Topicwise solved paper 2020 - BS Sijwalii 2020-02-10

Common Aptitude Test or propularly known as CAT is dream and most popular exam amongst students who wants to persue career in management. But as common its name is, it is the toughest exam in India and needs thorough concept clarity and immense practice. CAT, today is doorway to some of the best B-Schools in India and hence thousands of students appear every year for the examination. The current edition of “Face To Face CAT” has been carefully and consciously revised to reinforce the conceptual clarity in the aspirants by providing the Sectionwise and Topicwise previous 27 Years’ (1993-2019) Questions along with the detailed solutions. The book is basically divided into 3 sections; Quantitative Aptitude, Data Interpretation and Logical Reasoning, and Verbal Ability and Reading Comprehension, which is exactly according to the paper pattern giving the complete coverage of the entire syllabus. 3 Previous Years’ Questions Papers [2019 -2017] are being provided right in the beginning of the book that gives the insight of the pattern of the examination which help candidates to prepare accordingly. Moreover 3 Practice Papers are also attached at the end of the book for thorough practice which also helps to track the self progress. With such voluminous set of questions that too in sectionwise and topicwise manner, it offers a robust tool to attune aspirants with constant self-evaluation to move on the way for success in this exam. TABLE OF CONTENTS Introduction: CAT (About the Exam & How to Succeed in it?), CAT Solved Paper 2019, CAT Solved Paper 2018, CAT Solved Paper 2017, SECTION-I: Quantitative Aptitude, SECTION-II: Data Interpretation and Logical Reasoning, SECTION-III: Verbal Ability and Reading Comprehension, Practice Sets (1-3).

Galois Theory of p-Extensions - Helmut Koch 2013-03-09

Helmut Koch's classic is now available in English. Competently translated by Franz Lemmermeyer, it introduces the theory of pro-p groups and their cohomology. The book contains a postscript on the recent development of the field written by H. Koch and F. Lemmermeyer, along with many additional recent references.

What is Mathematics? - Herbert Robbins Richard Courant (Ian Stewart) 1996

A discussion of fundamental mathematical principles from algebra to elementary calculus designed to promote constructive mathematical reasoning.

Oswaal ISC Question Bank Class 12 Physics, Chemistry, Mathematics, English Paper-1 & 2 (Set of 5 Books) (For 2023 Exam) - Oswaal Editorial Board 2022-05-26

This product covers the following: Strictly as per the Full syllabus for Board 2022-23 Exams Includes Questions of the both - Objective & Subjective Types Questions Chapterwise and Topicwise Revision Notes for in-depth study Modified & Empowered Mind Maps & Mnemonics for quick learning Concept videos for blended learning Previous Years’ Board Examination Questions and Marking scheme Answers with detailed explanation to facilitate exam-oriented preparation. Examiners comments & Answering Tips to aid in exam preparation. Includes Topics found Difficult & Suggestions for students. Includes Academically important Questions (AI) Dynamic QR code to keep the students updated for 2023 Exam paper or any further ISC notifications/circulars

Advanced Intelligent Computing Theories and Applications - De-Shuang Huang 2015-08-12

This book - in conjunction with the double volume LNCS 9225-9226 - constitutes the refereed proceedings of the 11th International Conference on Intelligent Computing, ICIC 2015, held in Fuzhou, China, in August 2015. The total of 191 full and 42 short papers presented in the three ICIC 2015 volumes was carefully reviewed and selected from 671 submissions. Original contributions related to this theme were especially solicited, including theories, methodologies, and applications in science and technology. This year, the conference concentrated mainly on machine learning theory and methods, soft computing, image processing and computer vision, knowledge discovery and data mining, natural language processing and computational linguistics, intelligent control and automation, intelligent communication networks and web applications, bioinformatics theory and methods, healthcare and medical methods, and information security.

Congruences for L-Functions - J. Urbanowicz 2013-03-09

In [Hardy and Williams, 1986] the authors exploited a very simple idea to obtain a linear congruence involving class numbers of imaginary quadratic fields modulo a certain power of 2. Their congruence provided a unified setting for many congruences proved previously by other authors using various means. The Hardy-Williams idea was as follows. Let d be the discriminant of a quadratic field. Suppose that d is odd and let d = PIP2· . . Pn be its unique decomposition into prime discriminants. Then, for any positive integer k coprime with d, the congruence holds trivially as each Legendre-Jacobi-Kronecker symbol (~) has the value + 1 or -1. Expanding this product gives ~ eld e:=l (mod4) where e runs through the positive and negative divisors of d and v (e) denotes the number of distinct prime factors of e. Summing this congruence for o

Fixed Point Theory and Graph Theory - Monther Alfuraidan 2016-06-20

Fixed Point Theory and Graph Theory provides an intersection between the theories of fixed point theorems that give the conditions under which maps (single or multivalued) have solutions and graph theory which uses mathematical structures to illustrate the relationship between ordered pairs of objects in terms of their vertices and directed edges. This edited reference work is perhaps the first to provide a link between the two theories, describing not only their foundational aspects, but also the most recent advances and the fascinating intersection of the domains. The authors provide solution methods for fixed points in different settings, with two chapters devoted to the solutions method for critically important non-linear problems in engineering, namely, variational inequalities, fixed point, split feasibility, and hierarchical variational inequality problems. The last two chapters are devoted to integrating fixed point theory in spaces with the graph and the use of retractions in the fixed point theory for ordered sets. Introduces both metric fixed point and graph theory in terms of their disparate foundations and common application environments Provides a unique integration of otherwise disparate domains that aids both students seeking to understand either area and researchers interested in establishing an integrated research approach Emphasizes solution methods for fixed points in non-linear problems such as variational inequalities, split feasibility, and hierarchical variational inequality problems that is particularly appropriate for engineering and core science applications

Spectral Theory of Operator Pencils, Hermite-Biehler Functions, and their Applications - Manfred Möller 2015-06-11

The theoretical part of this monograph examines the distribution of the spectrum of operator polynomials, focusing on quadratic operator polynomials with discrete spectra. The second part is devoted to applications. Standard spectral problems in Hilbert spaces are of the form A-λI for an operator A, and self-adjoint operators are of particular interest and importance, both theoretically and in terms of applications. A characteristic feature of self-adjoint operators is that their spectra are real, and many spectral problems in theoretical physics and engineering can be described by using them. However, a large class of problems, in particular vibration problems with boundary conditions depending on the spectral parameter, are represented by operator polynomials that are quadratic in the eigenvalue parameter and whose coefficients are self-adjoint operators. The spectra of such operator polynomials are in general no more real, but still exhibit certain patterns. The distribution of these spectra is the main focus of the present volume. For some classes of quadratic operator polynomials, inverse problems are also considered. The connection between the spectra of such quadratic

operator polynomials and generalized Hermite-Biehler functions is discussed in detail. Many applications are thoroughly investigated, such as the Regge problem and damped vibrations of smooth strings, Stieltjes strings, beams, star graphs of strings and quantum graphs. Some chapters summarize advanced background material, which is supplemented with detailed proofs. With regard to the reader's background knowledge, only the basic properties of operators in Hilbert spaces and well-known results from complex analysis are assumed.

Introduction to Singularities - Shihoko Ishii 2018-09-21

This book is an introduction to singularities for graduate students and researchers. Algebraic geometry is said to have originated in the seventeenth century with the famous work Discours de la méthode pour bien conduire sa raison, et chercher la vérité dans les sciences by Descartes. In that book he introduced coordinates to the study of geometry. After its publication, research on algebraic varieties developed steadily. Many beautiful results emerged in mathematicians' works. First, mostly non-singular varieties were studied. In the past three decades, however, it has become clear that singularities are necessary for us to have a good description of the framework of varieties. For example, it is impossible to formulate minimal model theory for higher-dimensional cases without singularities. A remarkable fact is that the study of singularities is developing and people are beginning to see that singularities are interesting and can be handled by human beings. This book is a handy introduction to singularities for anyone interested in singularities. The focus is on an isolated singularity in an algebraic variety. After preparation of varieties, sheaves, and homological algebra, some known results about 2-dimensional isolated singularities are introduced. Then a classification of higher-dimensional isolated singularities is shown according to plurigenera and the behavior of singularities under a deformation is studied. In the second edition, brief descriptions about recent remarkable developments of the researches are added as the last chapter.

International Journal of Mathematical Combinatorics, Volume 4, 2017 - Linfan Mao

Topics in detail to be covered are: Smarandache multi-spaces with applications to other sciences, such as those of algebraic multi-systems, multi-metric spaces; Smarandache geometries; Differential Geometry; Geometry on manifolds; Topological graphs; Algebraic graphs; Random graphs; Combinatorial maps; Graph and map enumeration; Combinatorial designs; Combinatorial enumeration; Low Dimensional Topology; Differential Topology; Topology of Manifolds; Geometrical aspects of Mathematical Physics and Relations with Manifold Topology; Applications of Smarandache multi-spaces to theoretical physics; Applications of Combinatorics to mathematics and theoretical physics.

Elliptic–Hyperbolic Partial Differential Equations - Thomas H. Otway 2015-07-08

This text is a concise introduction to the partial differential equations which change from elliptic to hyperbolic type across a smooth hypersurface of their domain. These are becoming increasingly important in diverse sub-fields of both applied mathematics and engineering, for example: • The heating of fusion plasmas by electromagnetic waves • The behaviour of light near a caustic • Extremal surfaces in the space of special relativity • The formation of rapids; transonic and multiphase fluid flow • The dynamics of certain models for elastic structures • The shape of industrial surfaces such as windshields and airfoils • Pathologies of traffic flow • Harmonic fields in extended projective space They also arise in models for the early universe, for cosmic acceleration, and for possible violation of causality in the interiors of certain compact stars. Within the past 25 years, they have become central to the isometric embedding of Riemannian manifolds and the prescription of Gauss curvature for surfaces: topics in pure mathematics which themselves have important applications. Elliptic−Hyperbolic Partial Differential Equations is derived from a mini-course given at the ICMS Workshop on Differential Geometry and Continuum Mechanics held in Edinburgh, Scotland in June 2013. The focus on geometry in that meeting is reflected in these notes, along with the focus on quasilinear equations. In the spirit of the ICMS workshop, this course is addressed both to applied mathematicians and to mathematically-oriented engineers. The emphasis is on very recent applications and methods, the majority of which have not previously appeared in book form.

Issues in Applied Mathematics: 2013 Edition - 2013-05-01

Issues in Applied Mathematics / 2013 Edition is a ScholarlyEditions™ book that delivers timely, authoritative, and comprehensive information about Mathematical Physics. The editors have built Issues in Applied Mathematics: 2013 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Mathematical Physics in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Applied Mathematics: 2013 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

Oswaal ISC Physics, Chemistry & Maths Class 12 Sample Question Papers + Question Bank (Set of 6 Books) for 2023 Board Exam (based on the latest CISCE/ICSE Specimen Paper) - Oswaal Editorial Board 2022-11-03

ISC Class 12 sample Paper for Physics, Chemistry & Maths 2022-2023 is one of the best ISC reference books for class 12 Physics, Chemistry & Maths board exams. The ISC specimen sample paper class 12 maths 2022-23 includes latest solved board specimen papers which were released in July 2022. Along with ISC Class 12 sample Paper for Physics, Chemistry & Maths 2022-2023, 5 sample question papers are available for free on Oswaal 360 website. It contains ISC board specimen paper analysis to provide students with better exam insight. The ISC Class 12 sample Paper for Physics, Chemistry & Maths 2022-2023 includes 10 sample papers which comprise 5 solved papers & 5 self-assessment papers which are designed as per the latest ISC board specimen paper 2023. The ISC specimen sample paper class 12 Physics, Chemistry & Maths 2022-23 also contains on-tips notes and revision notes for quick revision and robust learning. To top it all, advanced learning tools such as Mind Maps & Mnemonics for 1000+concepts are also included in the ISC specimen sample paper class 12 Physics, Chemistry & Maths 2022-23 for blended learning. The best ISC reference book for class 12 Physics, Chemistry & Maths board exams contains 200+MCQs and objective type questions for enhanced practice. ISC Class 12 sample Paper for Physics, Chemistry & Maths 2022-2023 is designed to offer a better understanding of the topics and concepts to score maximum in ISC class 12 board exams 2023. Students are required to get this ISC Class 12 sample Paper for Physics, Chemistry & Maths 2022-2023 to boost their confidence about a particular topic or the entire chapter according to their needs. It is to assist in understanding the board examination scheme and clarity of concepts for exam preparations.

Oswaal CBSE English, Science, Social Science & Mathematics Class 9 Sample Question Papers (Set of 4 Books) (For 2023 Exam) - Oswaal Editorial Board 2022-11-02

CBSE Sample Paper Class 9 English, Science, Social Science & Mathematics for exams 2022-2023 is one of the best CBSE Reference Books for Class 9 exams 2022-23.It includes Latest Solved Sample Papers with Marking scheme 2022- 2023 which were released on 16th September 2022 for advanced learning. On top of that, 5 Sample Question Papers with high chances of appearing in the CBSE class 9 exam 2023 are included in this best CBSE Reference Book for Class 9 exams 2022-23. These 5 sample question papers are available for free on Oswaal 360 website for students. CBSE Sample Paper Class 9 English, Science, Social Science & Mathematics for exams 2022-2023 contains 10 Sample Papers which further comprises of 5 Solved & 5 Self-Assessment Papers. This Best CBSE Reference Book for Class 9 exams 2022-23 is strictly designed as per the latest CBSE Sample Paper released by CBSE to keep students updated with CBSE guidelines. CBSE Sample Paper Class 9 English, Science, Social Science & Mathematics for exams 2022-2023 analysis to provide enhanced exam clarity to the students. It includes On-Tips Notes & Revision Notes for students to have robust preparation. The best CBSE reference Books for Class 9 exams 2022-23 contains some of the best advanced learning tools such as Mind Maps & Mnemonics with 1000+ concepts to make learning easier and advanced for students. To top it all, 500+ Questions are also included for practice in the CBSE Sample Paper Class 9. The right amount of practice with CBSE Sample Paper Class 9 English, Science, Social Science & Mathematics for exams 2022-2023 will lead to desired results for class 9 students. The Best CBSE Reference Books for Class 9 exams 2022-23 when practised with focus and precision will produce desired results. When the students practice with this best CBSE Sample Paper Class 9 English, Science, Social Science & Mathematics for exams 2022-2023 for a good amount of time then they will ahead of the competition by scoring highest marks.

Papers in Honour of Bernhard Banaschewski - Guillaume Brümmer

2013-11-11
Proceedings of the BB Fest 96, a conference held at the University of Cape Town, 15-20 July 1996, on Category Theory and its Applications to Topology, Order and Algebra
Pristine Perspectives on Logic, Language and Computation - Margot Colinet 2014-07-10
The European Summer School in Logic, Language and Information (ESSLLI) is organized every year by the Association for Logic, Language and Information (FoLLI) in different sites around Europe. The main focus of ESSLLI is on the interface between linguistics, logic and computation. ESSLLI offers foundational, introductory and advanced courses, as well as workshops, covering a wide variety of topics within the three areas of interest: Language and Computation, Language and Logic, and Logic and Computation. The 16 papers presented in this volume have been selected among 44 papers presented by talks or posters at the Student Sessions of the 24th and 25th editions of ESSLLI, held in 2012 in Opole, Poland, and 2013 in Düsseldorf, Germany. The papers are extended versions of the versions presented, and have all been subjected to a second round of blind peer review.
Magic and Antimagic Graphs - Martin Bača 2019-09-14
Magic and antimagic labelings are among the oldest labeling schemes in graph theory. This book takes readers on a journey through these labelings, from early beginnings with magic squares up to the latest results and beyond. Starting from the very basics, the book offers a detailed account of all magic and antimagic type labelings of undirected graphs. Long-standing problems are surveyed and presented along with recent results in classical labelings. In addition, the book covers an assortment of variations on the labeling theme, all in one self-contained monograph. Assuming only basic familiarity with graphs, this book, complete with carefully written proofs of most results, is an ideal introduction to graph labeling for students learning the subject. More than 150 open problems and conjectures make it an invaluable guide for postgraduate and early career researchers, as well as an excellent reference for established graph theorists.
Singularities, Mirror Symmetry, and the Gauged Linear Sigma Model - Tyler J. Jarvis 2021-02-26
This volume contains the proceedings of the workshop Crossing the Walls in Enumerative Geometry, held in May 2018 at Snowbird, Utah. It features a collection of both expository and research articles about mirror symmetry, quantized singularity theory (FJRW theory), and the gauged linear sigma model. Most of the expository works are based on introductory lecture series given at the workshop and provide an approachable introduction for graduate students to some fundamental topics in mirror symmetry and singularity theory, including quasimaps, localization, the gauged linear sigma model (GLSM), virtual classes, cosection localization, p-fields, and Saito's primitive forms. These articles help readers bridge the gap from the standard graduate curriculum in algebraic geometry to exciting cutting-edge research in the field. The volume also contains several research articles by leading researchers, showcasing new developments in the field.
Fractal Geometry and Dynamical Systems in Pure and Applied Mathematics: Fractals in pure mathematics - David Carfi 2013-10-22
This volume contains the proceedings from three conferences: the PISRS 2011 International Conference on Analysis, Fractal Geometry, Dynamical Systems and Economics, held November 8-12, 2011 in Messina, Italy; the AMS Special Session on Fractal Geometry in Pure and Applied Mathematics, in memory of Benoit Mandelbrot, held January 4-7, 2012, in Boston, MA; and the AMS Special Session on Geometry and Analysis on Fractal Spaces, held March 3-4, 2012, in Honolulu, HI. Articles in this volume cover fractal geometry (and some aspects of dynamical systems) in pure mathematics. Also included are articles discussing a variety of connections of fractal geometry with other fields of mathematics, including probability theory, number theory, geometric measure theory, partial differential equations, global analysis on non-smooth spaces, harmonic analysis and spectral geometry. The companion volume (Contemporary Mathematics, Volume 601) focuses on applications of fractal geometry and dynamical systems to other sciences, including physics, engineering, computer science, economics, and finance.
Oswaal CBSE English, Science, Social Science & Mathematics Class 9 Sample Question Papers + Question Bank (Set of 8 Books) (For 2023 Exam) - Oswaal Editorial Board 2022-11-02
CBSE Sample Paper Class 9 English, Science, Social Science & Mathematics for exams 2022-2023 is one of the best CBSE Reference Books for Class 9 exams 2022-23.It includes Latest Solved Sample Papers with Marking scheme 2022- 2023 which were released on 16th September 2022 for advanced learning. On top of that, 5 Sample Question Papers with high chances of appearing in the CBSE class 9 exam 2023 are included in this best CBSE Reference Book for Class 9 exams 2022-23. These 5 sample question papers are available for free on Oswaal 360 website for students. CBSE Sample Paper Class 9 English, Science, Social Science & Mathematics for exams 2022-2023 contains 10 Sample Papers which further comprises of 5 Solved & 5 Self-Assessment Papers. This Best CBSE Reference Book for Class 9 exams 2022-23 is strictly designed as per the latest CBSE Sample Paper released by CBSE to keep students updated with CBSE guidelines. CBSE Sample Paper Class 9 English, Science, Social Science & Mathematics for exams 2022-2023 analysis to provide enhanced exam clarity to the students. It includes On-Tips Notes & Revision Notes for students to have robust preparation. The best CBSE reference Books for Class 9 exams 2022-23 contains some of the best advanced learning tools such as Mind Maps & Mnemonics with 1000+ concepts to make learning easier and advanced for students. To top it all, 500+ Questions are also included for practice in the CBSE Sample Paper Class 9. The right amount of practice with CBSE Sample Paper Class 9 English, Science, Social Science & Mathematics for exams 2022-2023 will lead to desired results for class 9 students. The Best CBSE Reference Books for Class 9 exams 2022-23 when practised with focus and precision will produce desired results. When the students practice with this best CBSE Sample Paper Class 9 English, Science, Social Science & Mathematics for exams 2022-2023 for a good amount of time then they will ahead of the competition by scoring highest marks.
Combinatorial Image Analysis - Reneta P. Barneva 2016-01-05
This volume constitutes the refereed proceedings of the 17th International Workshop on Combinatorial Image Analysis, IWCIA 2015, held in Kolkata, India, in November 2015. The 24 revised full papers and 2 invited papers presented were carefully reviewed and selected from numerous submissions. The workshop provides theoretical foundations and methods for solving problems from various areas of human practice. In contrast to traditional approaches to image analysis which implement continuous models, float arithmetic and rounding, combinatorial image analysis features discrete modelsusing integer arithmetic. The developed algorithms are based on studying combinatorial properties of classes of digital images, and often appear to be more efficient and accurate than those based on continuous models.
Studies in Pure Mathematics - ERDÖS 2013-12-01
This volume, written by his friends, collaborators and students, is offered to the memory of Paul Tunin. Most of the papers they contributed discuss subjects related to his own fields of research. The wide range of topics reflects the versatility of his mathematical activity. His work has inspired many mathematicians in analytic number theory, theory of functions of a complex variable, interpolation and approximation theory, numerical algebra, differential equations, statistical group theory and theory of graphs. Beyond the influence of his deep and important results he had the exceptional ability to communicate to others his enthusiasm for mathematics. One of the strengths of Turan was to ask unusual questions that became starting points of many further results, sometimes opening up new fields of research. We hope that this volume will illustrate this aspect of his work adequately. Born in Budapest, on August 28, 1910, Paul Turan obtained his Ph. D. under L. Fejer in 1935. His love for mathematies enabled him to work even under inhuman circumstances during the darkest years of the Second World War. One of his major achievements, his power sum method originated in this period. After the war he was visiting professor in Denmark and in Princeton. In 1949 he became professor at the Eotvos Lorand University of Budapest, a member of the Hungarian Academy of Sciences and a leading figure of the Hungarian mathematical community.