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 A Short Account of the History of Mathematics  
 Noetherian and Non-Noetherian Perspectives  
 Mathematics and Theoretical Physics  
 Fluid Dynamics  
 Automorphisms of Riemann Surfaces, Subgroups of Mapping Class Groups and Related Topics  
 The Official Journal of the Mathematical Association of America  
 Supplement  
 Biological Fluid Dynamics: Modeling, Computations, and Applications  
 Oklahoma Teacher  
 Foundations and Fundamental Concepts of Mathematics  
 The Relationship Between Knowledge, Practice, and Student Learning  
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 Mathematics in Victorian Britain  
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 The Danish-Swedish Analysis Seminar, 1995  
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 The Lincoln Library of Essential Information an Up to Date Manual for Daily Reference, for Self Instruction, and for General Culture Named in Appreciative Remembrance of Abraham Lincoln, the Foremost American Exemplar of Self Education  
 Numerical Mathematics Singapore 1988  
 Bryn Mawr College Calendar  
 Complex Algebraic Varieties Algebraic Curves and Their Jacobians  
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 In Honor of the 65th Birthday of Antonio Greco, Palermo, Italy, 5-7 June 2006  
 Proceedings of the International Conference on Numerical Mathematics held at the National University of Singapore, May 31-June 4, 1988  
 Asymptotic Theory of Separated Flows  
 Canadian Mathematical Bulletin  
 Sobolev Spaces in Mathematics II  
 Social Sciences and Humanities Index  
 Partial Differential Equations and Mathematical Physics  
 Methods of Numerical Integration  
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 Series and Products in the Development of Mathematics: Volume 2  
 Applications in Analysis and Partial Differential Equations  
 The American Mathematical Monthly

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### **SANAA CASSIUS**

*Hearings, Eighty-ninth Congress, Second Session* Oxford University Press  
 During the Victorian era, industrial and economic growth led to a phenomenal rise in productivity and invention. That spirit of creativity and ingenuity was reflected in the massive expansion in scope and complexity of many scientific disciplines during this time, with subjects evolving rapidly and the creation of many new disciplines. The subject of mathematics was no exception and many of the advances made by mathematicians during the Victorian period are still familiar today; matrices, vectors, Boolean algebra, histograms, and standard deviation were just some of the innovations pioneered by these mathematicians. This book constitutes perhaps the first general survey of the mathematics of the Victorian period. It assembles in a single source research on the history of Victorian mathematics that would otherwise be out of the reach of the general reader. It charts the growth and institutional development of mathematics as a profession through the course of the 19th century in England, Scotland, Ireland, and across the British Empire. It then focuses on developments in specific mathematical areas, with chapters ranging from developments in pure mathematical topics (such as geometry, algebra, and logic) to Victorian work in the applied side of the subject (including statistics, calculating machines, and astronomy). Along the way, we encounter a host of mathematical scholars, some very well known (such as Charles Babbage, James Clerk Maxwell, Florence Nightingale, and Lewis Carroll), others largely forgotten, but who all contributed to the development of Victorian mathematics.  
*A Short Account of the History of Mathematics* American Mathematical Society

Understanding the knowledge that teachers must bring to their classrooms is critical to the advancement of the field of teacher education. Understanding how teacher knowledge impacts various aspects of teacher practice is also critical. Understanding the interplay between teacher knowledge and practice, and consequently the result that this relationship has on student learning is most important. This dissertation attempts to advance our collective understanding of the complex relationship between teacher knowledge, teacher practice, and student learning in the field of elementary mathematics. Four third-grade teachers were followed as they taught a subset of lessons in a unit on fractions. The study first investigates the types of knowledge that the teachers brought to their classrooms. Then, an examination is conducted of the way in which these types of knowledge impacted their teaching practice. Finally, the student learning that resulted over the course of these lessons is discussed. This study supports the widespread belief that teacher knowledge is important to instruction. The descriptions of the case study teachers highlight that their varying levels of knowledge resulted in unique aspects of practice being emphasized in their classrooms. This dissertation documents the differences in teaching practice and the trade-offs that produce differences in student learning. Interesting student learning patterns emerged, based on qualitative student interviews. Medium students from classrooms in which teachers focused for more sustained periods on mathematical concepts seemed to demonstrate greater procedural fluency and deeper conceptual understanding than their peers in the other classrooms. Low students in classrooms where fluency was the focus seemed to show slightly greater procedural fluency, though less conceptual understanding, than their peers in the classrooms that spent more time on concepts. High students showed no appreciable difference across all classrooms. This study adds to the field by introducing a new construct, the conceptual threshold, to offer an explanation of these student learning trends.  
*Noetherian and Non-Noetherian Perspectives* Springer

Automorphism groups of Riemann surfaces have been widely studied for almost 150 years. This area has persisted in part because it has close ties to many other topics of interest such as number theory, graph theory, mapping class groups, and geometric and computational group theory. In recent years there has been a major revival in this area due in part to great advances in computer algebra systems and progress in finite group theory. This volume provides a concise but thorough introduction for newcomers to the area while at the same time highlighting new developments for established researchers. The volume starts with two expository articles. The first of these articles gives a historical perspective of the field with an emphasis on highly symmetric surfaces, such as Hurwitz surfaces. The second expository article focuses on the future of the field, outlining some of the more popular topics in recent years and providing 78 open research problems across all topics. The remaining articles showcase new developments in the area and have specifically been chosen to cover a variety of topics to illustrate the range of diversity within the field.

**Mathematics and Theoretical Physics** CRC Press

This book brings together several contributions from leading experts in the field of nonlinear wave propagation. This field, which during the last three decades has seen important breakthroughs from the theoretical point of view, has recently acquired increased relevance due to advances in the technology of fluids e.g. at microscale or nanoscale and the recognition of crucial applications to the understanding of biological phenomena. Nonlinear wave theory requires the use of disparate approaches, including formal and rigorous asymptotic methods, Lie group theory, energy methods, numerical analysis, and bifurcation theory. This book presents a unique blend in which different aspects of the theory are enlightened and several real-life applications are investigated. The book will be a valuable resource for applied scientists interested in some of the most recent advances in the theory and in the applications of wave propagation, shock formation, nonequilibrium thermodynamics and energy methods.

**Fluid Dynamics** Cambridge University Press

This book is a tribute to Professor Ian Hugh Sloan on the occasion of his 80th birthday. It consists of nearly 60 articles written by international leaders in a diverse range of areas in contemporary computational mathematics. These papers highlight the impact and many achievements of Professor Sloan in his distinguished academic career. The book also presents state of the art knowledge in many computational fields such as quasi-Monte Carlo and Monte Carlo methods for multivariate integration, multi-level methods, finite element methods, uncertainty quantification, spherical designs and integration on the sphere, approximation and interpolation of multivariate functions, oscillatory integrals, and in general in information-based complexity and tractability, as well as in a range of other topics. The book also tells the life story of the renowned mathematician, family man, colleague and friend, who has been an inspiration to many of us. The reader may especially enjoy the story from the perspective of his family, his wife, his daughter and son, as well as grandchildren, who share their views of Ian. The clear message of the book is that Ian H. Sloan has been a role model in science and life.

**Automorphisms of Riemann Surfaces, Subgroups of Mapping Class Groups and Related Topics** Oxford University Press

This is the second volume of a two-volume work that traces the development of series and products from 1380 to 2000 by presenting and explaining the interconnected concepts and results of hundreds of unsung as well as celebrated mathematicians. Some chapters deal with the work of primarily one mathematician on a pivotal topic, and other chapters chronicle the progress over time of a given topic. This updated second edition of Sources in the Development of Mathematics adds extensive context, detail, and primary source material, with many sections rewritten to more clearly reveal the significance of key developments and arguments. Volume 1, accessible even to advanced undergraduate students, discusses the development of the methods in series and products that do not employ complex analytic methods or sophisticated machinery. Volume 2 examines more recent results, including deBranges' resolution of Bieberbach's conjecture and Nevanlinna's theory of meromorphic functions.

**The Official Journal of the Mathematical Association of America** American Mathematical Soc.

This book presents the asymptotic theory of separate flows in a systematic account.

**Supplement** Birkhäuser

On March 17-19 and May 19-21, 1995, analysis seminars were organized jointly at the universities of Copenhagen and Lund, under the heading "Danish-Swedish Analysis Seminar". The main topic was partial differential equations and related problems of mathematical physics. The lectures given are presented in this volume, some as short abstracts and some as quite complete expositions or survey papers. They span over a large variety of topics. The most frequently occurring theme is the use of microlocal analysis which is now important also in the study of non-linear differential equations although it originated entirely within the linear theory. Perhaps it is less surprising that microlocal analysis has proved to be useful in the study of mathematical problems of classical quantum mechanics, for it received a substantial input of ideas from that field. The scientific committee for the invitation of speakers consisted of Gerd Grubb in Copenhagen, Lars Hormander and Anders MeHn in Lund, and Johannes Sjostrand in Paris. Lars Hormander and Anders Melin have edited the proceedings. They were hosts of the seminar days in Lund while Gerd Grubb was the host in Copenhagen. Financial support was obtained from the mathematics departments in Copenhagen and Lund, CNRS in France, the Danish and Swedish National Research Councils, Gustaf Sigurd Magnuson's foundation at the Royal Swedish Academy of Sciences, and the Wenner-Gren foundation in Stockholm. We want to thank all these organisations for their support

**Biological Fluid Dynamics: Modeling, Computations, and Applications** Stanford University

Commutative algebra is a rapidly growing subject that is developing in many different directions. This volume presents several of the most recent results from various areas related to both Noetherian and non-Noetherian commutative algebra. This volume contains a collection of invited survey articles by some of the leading experts in the field. The authors of these chapters have been carefully selected for their important contributions to an area of commutative-algebraic research. Some topics presented in the volume include: generalizations of cyclic modules, zero divisor graphs, class semigroups, forcing algebras, syzygy bundles, tight closure, Gorenstein dimensions, tensor products of algebras over fields, as well as many others. This book is intended for researchers and graduate students interested in studying the many topics related to commutative algebra.

Springer Science & Business Media

Author and subject index to a selected list of periodicals not included in the Readers' guide, and to composite books.

**Oklahoma Teacher** Walter de Gruyter

This volume contains the Proceedings of the AMS Special Session on Biological Fluid Dynamics: Modeling, Computation, and Applications, held on October 13, 2012, at Tulane University, New Orleans, Louisiana. In recent years, there has been increasing interest in the development and application of advanced computational techniques for simulating fluid motion driven by immersed flexible structures. That interest is motivated, in large part, by the multitude of applications in physiology and biology. In some biological systems, fluid motion is driven by active biological tissues, which are typically constructed of fibers that are surrounded by fluid. Not only do the fibers hold the tissues together, they also transmit forces that ultimately result in fluid motion. In other examples, the fluid may flow through conduits such as blood vessels or airways that are flexible or active. That is, those conduits may react to and affect the fluid dynamics. This volume responds to the widespread interest among mathematicians, biologists, and engineers in fluid-structure interactions problems. Included are expository and review articles in biological fluid dynamics. Applications that are considered include ciliary motion, upside-down jellyfish, biological feedback in the kidney, peristalsis and dynamic suction pumping, and platelet cohesion and adhesion.

**Foundations and Fundamental Concepts of Mathematics** Elsevier

The Handbook of Research Design in Mathematics and Science Education is based on results from an NSF-supported project (REC 9450510) aimed at clarifying the nature of principles that govern the effective use of emerging new research designs in mathematics and science education. A primary goal is to describe several of the most important types of research designs that: \* have been pioneered recently by mathematics and science educators; \* have distinctive characteristics when they are used in projects that focus on mathematics and science education; and \* have proven to be especially productive for investigating the kinds of complex, interacting, and adapting systems that underlie the development of mathematics or science students and teachers, or for the development, dissemination, and implementation of innovative programs of mathematics or science instruction. The volume emphasizes research designs that are intended to radically increase the relevance of research to practice, often by involving practitioners in the identification and formulation of the problems to be addressed or in other key roles in the research process. Examples of such research designs include teaching experiments, clinical interviews, analyses of videotapes, action research studies, ethnographic observations, software development studies (or curricula development studies, more generally), and computer modeling studies. This book's second goal is to begin discussions about the nature of appropriate and productive criteria for assessing (and increasing) the quality of research proposals, projects, or publications that are based on the preceding kind of research designs. A final objective is to describe such guidelines in forms that will be useful to graduate students and others who are novices to the fields of mathematics or science education research. The NSF-supported project from which this book developed involved a series of mini conferences in which leading researchers in mathematics and science education developed detailed specifications for the book, and planned and revised chapters to be included. Chapters were also field tested and revised during a series of doctoral research seminars that were sponsored by the University of Wisconsin's OERI-supported National Center for Improving Student Learning and Achievement in Mathematics and Science. In these seminars, computer-based videoconferencing and www-based discussion groups were used to create interactions in which authors of potential chapters served as "guest discussion leaders" responding to questions and comments from doctoral students and faculty members representing more than a dozen leading research universities throughout the USA and abroad. A Web site with additional resource materials related to this book can be found at <http://www.soe.purdue.edu/smsc/lesh/> This internet site includes directions for enrolling in seminars, participating in ongoing discussion groups, and submitting or downloading resources which range from videotapes and transcripts, to assessment instruments or theory-based software, to publications or data samples related to the research designs being discussed.

**The Relationship Between Knowledge, Practice, and Student Learning** Springer

This third edition of a popular, well-received text offers undergraduates an opportunity to obtain an overview of the historical roots and the evolution of several areas of mathematics. The selection of topics conveys not only their role in this historical development of mathematics but also their value as bases for understanding the changing nature of mathematics. Among the topics covered in this wide-ranging text are: mathematics before Euclid, Euclid's Elements, non-Euclidean geometry, algebraic structure, formal axiomatics, the real numbers system, sets, logic and philosophy and more. The emphasis on axiomatic procedures provides important background for studying and applying more advanced topics, while the inclusion of the historical roots of both algebra and geometry provides essential information for prospective teachers of school mathematics. The readable style and sets of challenging exercises from the popular earlier editions have been continued and extended in the present edition, making this a very welcome and useful version of a classic treatment of the foundations of mathematics. "A truly satisfying book." — Dr. Bruce E. Meserve, Professor Emeritus, University of Vermont.

**Asymptotic Methods in Nonlinear Wave Phenomena** Springer Science & Business Media

Includes section "Recent publications."

Academic Press

8th Grade PSSA Math Exercise Book Review of Essential Skills and Concepts With 2 PSSA Math Practice Tests WWW.MathNotion.com

**Review of Essential Skills and Concepts With 2 PSSA Math Practice Tests** Courier Corporation

Methods of Numerical Integration, Second Edition describes the theoretical and practical aspects of major methods of numerical integration.

Numerical integration is the study of how the numerical value of an integral can be found. This book contains six chapters and begins with a discussion of the basic principles and limitations of numerical integration. The succeeding chapters present the approximate integration rules and formulas over finite and infinite intervals. These topics are followed by a review of error analysis and estimation, as well as the application of functional analysis to numerical integration. A chapter describes the approximate integration in two or more dimensions. The final chapter looks into the goals and processes of automatic integration, with particular attention to the application of Tschebyscheff polynomials. This book will be of great value to theoreticians and computer programmers.

**Mathematics in Victorian Britain** 8th Grade PSSA Math Exercise Book Review of Essential Skills and Concepts With 2 PSSA Math Practice Tests

This book closes the gap between standard undergraduate texts on fluid mechanics and monographical publications devoted to specific aspects of viscous fluid flows. Each chapter serves as an introduction to a special topic that will facilitate later application by readers in their research work.

*Catalog* Oxford University Press

During the past 20 years, there has been enormous productivity in theoretical as well as computational integration. Some attempts have been made to find an optimal or best numerical method and related computer code to put to rest the problem of numerical integration, but the research is continuously ongoing, as this problem is still very much open-ended. The importance of numerical integration in so many areas of science and technology has made a practical, up-to-date reference on this subject long overdue. The Handbook of Computational Methods for Integration discusses quadrature rules for finite and infinite range integrals and their applications in differential and integral equations, Fourier integrals and transforms, Hartley transforms, fast Fourier and Hartley transforms, Laplace transforms and wavelets. The practical, applied perspective of this book makes it unique among the many theoretical books on numerical integration and quadrature. It will be a welcomed addition to the libraries of applied mathematicians, scientists, and engineers in virtually every discipline.

**The Danish-Swedish Analysis Seminar, 1995** Springer Science & Business Media

Handbook of Algebra

**Elementary and Secondary Education Act of 1966** World Scientific

Sobolev spaces become the established and universal language of partial differential equations and mathematical analysis. Among a huge variety of problems where Sobolev spaces are used, the following important topics are the focus of this volume: boundary value problems in domains with singularities, higher order partial differential equations, local polynomial approximations, inequalities in Sobolev-Lorentz spaces, function spaces in cellular domains, the spectrum of a Schrodinger operator with negative potential and other spectral problems, criteria for the complete integration of systems of differential equations with applications to differential geometry, some aspects of differential forms on Riemannian manifolds related to Sobolev inequalities, Brownian motion on a Cartan-Hadamard manifold, etc. Two short biographical articles on the works of Sobolev in the 1930s and the foundation of Akademgorodok in Siberia, supplied with unique archive photos of S. Sobolev are included.