Problem Solution Topics

Word Equations and Related TopicsProblem Solving a Basic Mathematics GoalLectures on Topics in Finite Element Solution of Elliptic ProblemsTopics In Interpolation TheoryThe Problem of Problems, and Its Various Solutions, Or, Atheism, Darwinism, and TheismA Place for BirdsSolving Math ProblemsTopics in Finite ElasticityNonlinear Problems in Mathematical Physics and Related TopicsHandbook of Research on Learning Design and Learning Objects: Issues, Applications, and TechnologiesProblem Solving in Mathematics EducationCurrent Topics in Artificial IntelligenceProblem-Solving and Selected Topics in Number TheoryThe Irish Question; Its Essence, Course, Solution, and the Issues it Involves for Ireland and for EnglandComments and Topics on Smarandache Notions and ProblemsOptimization and Related TopicsTopics in Engineering MathematicsPRICAI 2000 Topics in Artificial IntelligenceTopics in Artificial IntelligenceCreative Problem SolvingGeotechnical Problem SolvingConference Proceedings. New Perspectives in Science EducationMethods and Applications for Advancing Distance Education Technologies: International Issues and SolutionsTopics in Industrial MathematicsI'm Not Afraid of GDPI: Group Discussion and Personal InterviewProblem-Solving and Selected Topics in Euclidean GeometryProblem-solving in mathematicsTopics in Semidefinite and Interior-Point MethodsNonlinear Optimization and Related TopicsAdvanced Topics in Artificial IntelligenceTopics in Finite FieldsOptimization Theory and Related TopicsMathematical Problem SolvingSprintOperation Research:

Miscellaneous TopicsThe Psychology of Problem SolvingThe International Handbook of Educational Research in the Asia-Pacific RegionCurrent Scientific and Industrial RealityTeaching Problem Solving Through Children's LiteratureSelected Topics in Nonlinear Wave Mechanics

Word Equations and Related Topics

This book is devoted to some analytical and numerical methods for analyzing industrial problems related to emerging technologies such as digital image processing, material sciences and financial derivatives affecting banking and financial institutions. Case studies are based on industrial projects given by reputable industrial organizations of Europe to the Institute of Industrial and Business Mathematics, Kaiserslautern, Germany. Mathematical methods presented in the book which are most reliable for understanding current industrial problems include Iterative Optimization Algorithms, Galerkin's Method, Finite Element Method, Boundary Element Method, Quasi-Monte Carlo Method, Wavelet Analysis, and Fractal Analysis. The Black-Scholes model of Option Pricing, which was awarded the 1997 Nobel Prize in Economics, is presented in the book. In addition, basic concepts related to modeling are incorporated in the book. Audience: The book is appropriate for a course in Industrial Mathematics for upper-level undergraduate or beginning graduate-level students of mathematics or any branch

of engineering.

Problem Solving a Basic Mathematics Goal

Creative problem solving (CPS) is a six-step process designed to help people systematically resolve nonroutine, ambiguous types of problems. Because most organizational problems tend to be nonroutine, skill in using CPS process can confer a significant competitive advantage. Creative Problem Solving gives training managers the information they need to develop and teach a course on CPS. VanGundy provides an overview of the process, elements of the creative climate needed to foster CPS and innovative thinking, creative thinking exercises designed to illustrate specific CPS principles, and easy-to-follow descriptions of proven idea-generated methods.

Lectures on Topics in Finite Element Solution of Elliptic Problems

Topics In Interpolation Theory

This book is addressed to people with research interests in the nature of

mathematical thinking at any level, to people with an interest in "higher-order thinking skills" in any domain, and to all mathematics teachers. The focal point of the book is a framework for the analysis of complex problem-solving behavior. That framework is presented in Part One, which consists of Chapters 1 through 5. It describes four qualitatively different aspects of complex intellectual activity: cognitive resources, the body of facts and procedures at one's disposal; heuristics, "rules of thumb" for making progress in difficult situations; control, having to do with the efficiency with which individuals utilize the knowledge at their disposal; and belief systems, one's perspectives regarding the nature of a discipline and how one goes about working in it. Part Two of the book, consisting of Chapters 6 through 10, presents a series of empirical studies that flesh out the analytical framework. These studies document the ways that competent problem solvers make the most of the knowledge at their disposal. They include observations of students, indicating some typical roadblocks to success. Data taken from students before and after a series of intensive problem-solving courses document the kinds of learning that can result from carefully designed instruction. Finally, observations made in typical high school classrooms serve to indicate some of the sources of students' (often counterproductive) mathematical behavior.

The Problem of Problems, and Its Various Solutions, Or, Atheism, Darwinism, and Theism

Devised with a focus on problem solving, Geotechnical Problem Solving bridges the gap between geotechnical and soil mechanics material covered in university Civil Engineering courses and the advanced topics required for practicing Civil, Structural and Geotechnical engineers. By giving newly qualified engineers the information needed to apply their extensive theoretical knowledge, and informing more established practitioners of the latest developments, this book enables readers to consider how to confidently approach problems having thought through the various options available. Where various competing solutions are proposed, the author systematically leads through each option, weighing up the benefits and drawbacks of each, to ensure the reader can approach and solve real-world problems in a similar manner The scope of material covered includes a range of geotechnical topics, such as soil classification, soil stresses and strength and soil self-weight settlement. Shallow and deep foundations are analyzed, including special articles on laterally loaded piles, retaining structures including MSE and Tieback walls, slope and trench stability for natural, cut and fill slopes, geotechnical uncertainty, and geotechnical LRFD (Load and Resistance Factor Design).

A Place for Birds

This survey book reviews four interrelated areas: (i) the relevance of heuristics in problem-solving approaches – why they are important and what research tells us

about their use; (ii) the need to characterize and foster creative problem-solving approaches – what type of heuristics helps learners devise and practice creative solutions; (iii) the importance that learners formulate and pursue their own problems; and iv) the role played by the use of both multiple-purpose and ad hoc mathematical action types of technologies in problem-solving contexts – what ways of reasoning learners construct when they rely on the use of digital technologies, and how technology and technology approaches can be reconciled.

Solving Math Problems

Topics in Finite Elasticity

Contains 40 ready-to-use plans promote cooperation and shared problem-solving. Each lesson focuses on a children's literature character that is faced with a problem-solving situation. Through discussion questions and other activities, students will learn problem-solving strategies that can be applied to any situation.

Nonlinear Problems in Mathematical Physics and Related Topics

This volume contains the proceedings of the 11th International Conference on Finite Fields and their Applications (Fq11), held July 22-26, 2013, in Magdeburg, Germany. Finite Fields are fundamental structures in mathematics. They lead to interesting deep problems in number theory, play a major role in combinatorics and finite geometry, and have a vast amount of applications in computer science. Papers in this volume cover these aspects of finite fields as well as applications in coding theory and cryptography.

Handbook of Research on Learning Design and Learning Objects: Issues, Applications, and Technologies

Provides communication technologies, intelligent technologies, and quality educational pedagogy for advancing distance education for both teaching and learning.

Problem Solving in Mathematics Education

This book is devoted primarily to topics in interpolation for scalar, matrix and operator valued functions. About half the papers are based on lectures which were delivered at a conference held at Leipzig University in August 1994 to commemorate the 80th anniversary of the birth of Vladimir Petrovich Potapov. The

volume also contains the English translation of several important papers relatively unknown in the West, two expository papers written especially for this volume, and historical material based on reminiscences of former colleagues, students and associates of V.P. Potapov. Numerous examples of interpolation problems of the Nevanlinna-Pick and CarathA(c)odory-FejA(c)r type are included as well as moment problems and problems of integral representation in assorted settings. The major themes cover applications of the Potapov method of fundamental matrix inequalities, multiplicative decompositions of J-inner matrix valued functions, the abstract interpolation problem, canonical systems of differential equations and interpolation in spaces with an indefinite metric. This book should appeal to a wide range of readers: mathematicians specializing in pure and applied mathematics and engineers who work in systems theory and control. The book will be of use to graduate students and mathematicians interested in functional analysis.

Current Topics in Artificial Intelligence

From three design partners at Google Ventures, a unique five-day process--called the sprint--for solving tough problems using design, prototyping, and testing ideas with customers.

Problem-Solving and Selected Topics in Number Theory

This book constitutes the thoroughly refereed joint post-proceedings of the 10th Conference of the Spanish Association for Artificial Intelligence, CAEPIA 2003, and the 5th Conference on Technology Transfer, TTIA 2003, held in San Sebastián, Spain, in November 2003. The 66 revised full papers presented together with one invited paper were carefully selected during two rounds of reviewing and improvement from an initial total of 214 submissions. The papers span the entire spectrum of artificial intelligence and advanced applications in various fields.

The Irish Question; Its Essence, Course, Solution, and the Issues it Involves for Ireland and for England

This book gives an overview ofthe current state of nonlinear wave mechanics with emphasis on strong discontinuities (shock waves) and localized self preserving shapes (solitons) in both elastic and fluid media. The exposition is intentionallyat a detailed mathematical and physical level, our expectation being that the reader will enjoy coming to grips in a concrete manner with advances in this fascinating subject. Historically, modern research in nonlinear wave mechanics began with the famous 1858 piston problem paper of Riemann on shock waves and con tinued into the early part of the last century with the work of Hadamard, Rankine, and Hugoniot. After WWII, research into nonlinear propagation of dispersive waves rapidly accelerated with the advent of computers. Works of particular importance

in the immediate post-war years include those of von Neumann, Fermi, and Lax. Later, additional contributions were made by Lighthill, Glimm, Strauss, Wendroff, and Bishop. Dispersion alone leads to shock fronts of the propagating waves. That the nonlinearity can com pensate for the dispersion, leading to propagation with a stable wave having constant velocity and shape (solitons) came as a surprise. A solitary wave was first discussed by J. Scott Russell in 1845 in "Report of British Asso ciations for the Advancement of Science. " He had, while horseback riding, observed a solitary wave travelling along a water channel and followed its unbroken progress for over a mile.

Comments and Topics on Smarandache Notions and Problems

This volume presents refereed papers presented at the workshop Semidefinite Programming and Interior-Point Approaches for Combinatorial Problems: held at The Fields Institute in May 1996. Semidefinite programming (SDP) is a generalization of linear programming (LP) in that the non-negativity constraints on the variables is replaced by a positive semidefinite constraint on matrix variables. Many of the elegant theoretical properties and powerful solution techniques follow through from LP to SDP. In particular, the primal-dual interior-point methods, which are currently so successful for LP, can be used to efficiently solve SDP problems. In addition to the theoretical and algorithmic questions, SDP has found many important applications in combinatorial optimization, control theory and other

areas of mathematical programming. The papers in this volume cover a wide spectrum of recent developments in SDP. The volume would be suitable as a textbook for advanced courses in optimization. It is intended for graduate students and researchers in mathematics, computer science, engineering and operations.

Optimization and Related Topics

Topics in Engineering Mathematics

This volume contains papers presented at the second International Workshop on Word Equations and Related Topics (IWWERT '91), held at the University ofRouen in October 1991. The papers are on the following topics: general solution of word equations, conjugacy in free inverse monoids, general A- and AX-unification via optimized combination procedures, wordequations with two variables, a conjecture about conjugacy in free groups, acase of termination for associative unification, theorem proving by combinatorial optimization, solving string equations with constant restriction, LOP (toward a new implementation of Makanin's algorithm), word unification and transformation of generalizedequations, unification in the combination of disjoint theories, on the subsets of rank two in a free monoid (a fast decision algorithm), and a solution of the complement problem in associative-

commutative theories.

PRICAI 2000 Topics in Artificial Intelligence

This book constitutes the refereed proceedings of the 12th Australian Joint Conference on Artificial Intelligence, AI'99, held in Sydney, Australia in December 1999. The 39 revised full papers presented together with 15 posters were carefully reviewed and selected from more than 120 submissions. The book is divided in topical sections on machine learning, neural nets, knowledge representation, natural language processing, belief revision, adaptive algorithms, automated reasonning, neural learning, heuristics, and applications

Topics in Artificial Intelligence

The aim of the Handbook is to present readily accessible, but scholarly sources of information about educational research in the Asia-Pacific region. The scale and scope of the Handbook is such that the articles included in it provide substantive contributions to knowledge and understanding of education in the Asia region. In so doing, the articles present the problems and issues facing education in the region and the findings of research conducted within the region that contribute to the resolution of these problems and issues. Moreover, since new problems and

issues are constantly arising, the articles in the Handbook also indicate the likely directions of future developments. The different articles within the Handbook seek to conceptualize the problems in each specific content area under review, provide an integration of the research conducted within that area, the theoretical basis of the research the practical implications of the research and the contribution of the research towards the resolution of the problems identified. Thus, the articles do not involve the reporting of newly conducted research, but rather require a synthesis of the research undertaken in a particular area, with reference to the research methods employed and the theoretical frameworks on which the research is based. In general, the articles do not advocate a single point of view, but rather, present alternative points of view and comment on the debate and disagreements associated with the conduct and findings of the research. Furthermore, it should be noted, that the Handbook is not concerned with research methodology, and only considers the methods employed in inquiry in so far as the particular methods of research contribute to the effective investigation of problems and issues that have arisen in the conduct and provision of education at different levels within the region.

Creative Problem Solving

Problems are a central part of human life. The Psychology of Problem Solving organizes in one volume much of what psychologists know about problem solving

and the factors that contribute to its success or failure. There are chapters by leading experts in this field, including Miriam Bassok, Randall Engle, Anders Ericsson, Arthur Graesser, Keith Stanovich, Norbert Schwarz, and Barry Zimmerman, among others. The Psychology of Problem Solving is divided into four parts. Following an introduction that reviews the nature of problems and the history and methods of the field, Part II focuses on individual differences in, and the influence of, the abilities and skills that humans bring to problem situations. Part III examines motivational and emotional states and cognitive strategies that influence problem solving performance, while Part IV summarizes and integrates the various views of problem solving proposed in the preceding chapters.

Geotechnical Problem Solving

Conference Proceedings. New Perspectives in Science Education

Methods and Applications for Advancing Distance Education Technologies: International Issues and Solutions

Topics in Industrial Mathematics

This volume contains the proceedings of the workshop on Optimization Theory and Related Topics, held in memory of Dan Butnariu, from January 11-14, 2010, in Haifa, Israel. An active researcher in various fields of applied mathematics, Butnariu published over 80 papers. His extensive bibliography is included in this volume. The articles in this volume cover many different areas of Optimization Theory and its applications: maximal monotone operators, sensitivity estimates via Lyapunov functions, inverse Newton transforms, infinite-horizon Pontryagin principles, singular optimal control problems with state delays, descent methods for mixed variational inequalities, games on MV-algebras, ergodic convergence in subgradient optimization, applications to economics and technology planning, the exact penalty property in constrained optimization, nonsmooth inverse problems, Bregman distances, retraction methods in Banach spaces, and iterative methods for solving equilibrium problems. This volume will be of interest to both graduate students and research mathematicians.

I'm Not Afraid of GDPI: Group Discussion and Personal Interview

Presents a selection of expository papers on various topics in engineering

mathematics. The papers concern model problems relating to, amongst others, the automobile and shipping industries, transportation networks and wave propagation.

Problem-Solving and Selected Topics in Euclidean Geometry

PRICAI 2000, held in Melbourne, Australia, is the sixth Pacific Rim Interna tional Conference on Artificial Intelligence and is the successor to the five earlier PRICAIs held in Nagoya (Japan), Seoul (Korea), Beijing (China), Cairns (Aus tralia) and Singapore in the years 1990, 1992, 1994, 1996 and 1998 respectively. PRICAI is the leading conference in the Pacific Rim region for the presenta tion of research in Artificial Intelligence, including its applications to problems of social and economic importance. The objectives of PRICAI are: To provide a forum for the introduction and discussion of new research results, concepts and technologies; To provide practising engineers with exposure to and an evaluation of evolving research, tools and practices; To provide the research community with exposure to the problems of practical applications of AI; and To encourage the exchange of AI technologies and experience within the Pacific Rim countries. PRICAI 2000 is a memorial event in the sense that it is the last one in the 20"" century. It reflects what researchers in this region believe to be promising for their future AI research activities. In fact, some salient features can be seen in the papers accepted. We have 12 papers on agents, while PRICAI 96 and 98 had no more than two or three. This suggests to us

one of the directions in which AI research is going in the next century. It is true that agent research provides us with a wide range of research subjects from basic ones to applications.

Problem-solving in mathematics

Topics in Semidefinite and Interior-Point Methods

"Problem-Solving and Selected Topics in Euclidean Geometry: in the Spirit of the Mathematical Olympiads" contains theorems which are of particular value for the solution of geometrical problems. Emphasis is given in the discussion of a variety of methods, which play a significant role for the solution of problems in Euclidean Geometry. Before the complete solution of every problem, a key idea is presented so that the reader will be able to provide the solution. Applications of the basic geometrical methods which include analysis, synthesis, construction and proof are given. Selected problems which have been given in mathematical olympiads or proposed in short lists in IMO's are discussed. In addition, a number of problems proposed by leading mathematicians in the subject are included here. The book also contains new problems with their solutions. The scope of the publication of the present book is to teach mathematical thinking through Geometry and to provide

inspiration for both students and teachers to formulate "positive" conjectures and provide solutions.

Nonlinear Optimization and Related Topics

Why are birds in danger, and how can we help? A perfect nonfiction book for budding birders and nature lovers from the award-winning A Place for series by celebrated science writer Melissa Stewart. A teacher and classroom favorite! Outstanding Science Trade Books for Students K-12 —NSTA/CBC CCBC Choices (The Natural World) Best Children's Books of the Year —Bank Street College of Education Green Earth Book Award (Honor Book, Picture Book) NSTA Recommends North America has almost three billion fewer birds now than it had fifty years ago. Can you believe it? Birds are in danger, and they are calling for our help. But humans are often the source of the harm! What can we do to help save them? In simple yet compelling language, Melissa Stewart showcases twelve North American birds, from the familiar eastern bluebird to the rare Kirtland's warbler. Her clear narrative shows the threats these birds face, and informative sidebars describe a wide variety of efforts to save them. In addition, remarkable full-color illustrations vividly and accurately depict the birds within the ecosystems that support their survival. Range maps and additional bird facts are also included. This nonfiction picture book is part of a prize-winning series designed to inform young readers about a wide range of environmental issues and to present ways people

can help protect animals and their natural habitats. An ideal choice for birders, scientists, environmentalists, and nature lovers. Also available: A Place for Bats A Place for Butterflies A Place for Fish A Place for Frogs A Place for Turtles Teacher's Guide available.

Advanced Topics in Artificial Intelligence

"This book provides an overview of current research and development activity in the area of learning designs"--Provided by publisher.

Topics in Finite Fields

This book on Operation Research has been specially written to meet the requirements of the M.Sc. and M.B.A. students for all Universities. The subject matter has been discussed in such a simple way that the students will find no difficulty to understand it. The proof of various theorems and examples has been given with minute details. Each chapter of this book contains complete theory and fairly large number of solved examples, sufficient problems have also been selected from various universities examination papers. Contents: Dynamics Programming, Convex Sets, Dual Simplex Method, Variation of Analysis Problems, Decision Theory, Trees, Games and Investment Analysis.

Optimization Theory and Related Topics

This volume contains, in part, a selection of papers presented at the sixth Australian Optimization Day Miniconference (Ballarat, 16 July 1999), and the Special Sessions on Nonlinear Dynamics and Optimization and Operations Re search - Methods and Applications, which were held in Melbourne, July 11-15 1999 as a part of the Joint Meeting of the American Mathematical Society and Australian Mathematical Society. The editors have strived to present both con tributed papers and survey style papers as a more interesting mix for readers. Some participants from the meetings mentioned above have responded to this approach by preparing survey and 'semi-survey' papers, based on presented lectures. Contributed paper, which contain new and interesting results, are also included. The fields of the presented papers are very large as demonstrated by the following selection of key words from selected papers in this volume: • optimal control, stochastic optimal control, MATLAB, economic models, implicit constraints, Bellman principle, Markov process, decision-making under uncertainty, risk aversion, dynamic programming, optimal value function. • emergent computation, complexity, traveling salesman problem, signal estimation, neural networks, time congestion, teletraffic. • gap functions, nonsmooth variational inequalities, derivative-free algo rithm, Newton's method. • auxiliary function, generalized penalty function, modified Lagrange func tion. • convexity, quasiconvexity, abstract convexity.

Mathematical Problem Solving

This book presents the refereed proceedings of the 4th Congress of the Italian Association for Artificial Intelligence, AI*IA '95, held in Florence, Italy, in October 1995. The 31 revised full papers and the 12 short presentations contained in the volume were selected from a total of 101 submissions on the basis of a careful reviewing process. The papers are organized in sections on natural language processing, fuzzy systems, machine learning, knowledge representation, automated reasoning, cognitive models, robotics and planning, connectionist models, model-based reasoning, and distributed artificial intelligence.

Sprint

More than fifty years ago, Professor R. S. Rivlin pioneered developments in both the theory and experiments of rubber elasticity. These together with his other fundamental studies contributed to a revitalization of the theory of finite elasticity, which had been dormant, since the basic understanding was completed in the nineteenth century. This book with chapters on foundation, models, universal results, wave propagation, qualitative theory and phase transitions, indicates that the subject he reinvigorated has remainded remarkably vibran and has continued to present significant deep mathematical and experimental challenges.

Operation Research: Miscellaneous Topics

This volume contains the edited texts of the lectures presented at the Workshop on Nonlinear Optimization held in Erice, Sicily, at the "G. Stampacchia" School of Mathematics of the "E. Majorana" Centre for Scientific Culture, June 23 -July 2, 1998. In the tradition of these meetings, the main purpose was to review and discuss recent advances and promising research trends concerning theory, algorithms and innovative applications in the field of Nonlinear Optimization, and of related topics such as Convex Optimization, Nonsmooth Optimization, Variational Inequalities and Complementarity Problems. The meeting was attended by 83 people from 21 countries. Besides the lectures, several formal and informal discussions took place. The result was a wide and deep knowledge of the present research tendencies in the field. We wish to express our appreciation for the active contribution of all the par ticipants in the meeting. Our gratitude is due to the Ettore Majorana Centre in Erice, which offered its facilities and rewarding environment: its staff was certainly instrumental for the success of the meeting. Our gratitude is also due to Francisco Facchinei and Massimo Roma for the effort and time devoted as members of the Organising Committee. We are indebted to the Italian National Research Council, and in particular to the Group on Functional Analysis and its Applications and to the Committees on Engineering Sciences and on Information Sciences and Technolo gies for their financial support. Finally, we address our thanks to Kluwer Academic Publishers for having offered to publish this

volume.

The Psychology of Problem Solving

I'm Not Afraid of GDPI: Group Discussion and Personal Interview is carefully designed to guide you to face the compelling challenges of career building in the current scenario of cut-throat competition. This book offers several valuable sutras to aid an all-round development of one's personality. It discusses different ways to hone the career management skills such as writing a persuasive bio-data, presenting oneself convincingly in the interviews, tackling GDPI and dealing with time management stress. Neatly divided into two parts and eleven engaging chapters, the book comprehensively deals with every aspect of personal grooming required to be successful. Right front the positive mindset to correct attitude, and impressive body-language to acquiring 'officer-like qualities', this book can teach you the an of winning.

The International Handbook of Educational Research in the Asia-Pacific Region

THESE NOTES SUMMARISE a course on the finite element solution of Elliptic problems, which took place in August 1978, in Bangalore. I would like to thank

Professor Ramanathan without whom this course would not have been possible, and Dr. K. Balagangadharan who welcomed me in Bangalore. Mr. Vijayasundaram wrote these notes and gave them a much better form that what I would have been able to. Finally, I am grateful to all the people I met in Bangalore since they helped me to discover the smile of India and the depth of Indian civilization. Bertrand Mercier Paris, June 7, 1979. 1. SOBOLEV SPACES IN THIS CHAPTER the notion of Sobolev space Hl(n) is introduced. We state the Sobolev imbedding theorem, Rellich theorem, and Trace theorem for Hl(n), without proof. For the proof of the theorems the reader is r~ferred to ADAMS [1]. n 1. 1. NOTATIONS. Let n em (n = 1, ~ or 3) be an open set. Let r denote the boundary of 0, it is lSSlimed to be bounded and smooth. Let 2 2 L (n) = {f: Jlfl dx

Current Scientific and Industrial Reality

The main topics in this volume reflect the fields of mathematics in which Professor O.A. Ladyzhenskaya obtained her most influential results. One of the main topics considered is the set of Navier-Stokes equations and their solutions.

Teaching Problem Solving Through Children's Literature

Selected Topics in Nonlinear Wave Mechanics

The book provides a self-contained introduction to classical Number Theory. All the proofs of the individual theorems and the solutions of the exercises are being presented step by step. Some historical remarks are also presented. The book will be directed to advanced undergraduate, beginning graduate students as well as to students who prepare for mathematical competitions (ex. Mathematical Olympiads and Putnam Mathematical competition).

ROMANCE ACTION & ADVENTURE MYSTERY & THRILLER BIOGRAPHIES & HISTORY CHILDREN'S YOUNG ADULT FANTASY HISTORICAL FICTION HORROR LITERARY FICTION NON-FICTION SCIENCE FICTION