

# Graph Theory Mathematical Olympiad Series

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**Problem-Solving Methods in Combinatorics** - Pablo Soberón 2013-03-20

Every year there is at least one combinatorics problem in each of the major international mathematical olympiads. These problems can only be solved with a very high level of wit and creativity. This book explains all the problem-solving techniques necessary to tackle these problems, with clear examples from recent contests. It also includes a large problem section for each topic, including hints and full solutions so that the reader can practice the material covered in the book. The material will be useful not only to participants in the olympiads and their coaches but also in university courses on combinatorics.

**Discrete Mathematics** - László Lovász 2006-05-11

Aimed at undergraduate mathematics and computer science students, this book is an excellent introduction to a lot of problems of discrete mathematics. It discusses a number of selected results and methods, mostly from areas of combinatorics and graph theory, and it uses proofs and problem solving to help students understand the solutions to problems. Numerous examples, figures, and exercises are spread throughout the book.

**An Excursion through Elementary Mathematics, Volume III** - Antonio Caminha Muniz Neto 2018-04-17

This book provides a comprehensive, in-depth overview of elementary mathematics as explored in Mathematical Olympiads around the world. It expands on topics usually encountered in high school and could even be used as preparation for a first-semester undergraduate course. This third and last volume covers Counting, Generating Functions, Graph Theory, Number Theory, Complex Numbers, Polynomials, and much more. As part of a collection, the book differs from other publications in this field by not being a mere selection of questions or a set of tips and tricks that applies to specific problems. It starts from the most basic theoretical principles, without being either too general or too axiomatic. Examples and problems are discussed only if they are helpful as applications of the theory. Propositions are proved in detail and subsequently applied to Olympic problems or to other problems at the Olympic level. The book also explores some of the hardest problems presented at National and International Mathematics Olympiads, as well as many essential theorems related to the content. An extensive Appendix offering hints on or full solutions for all difficult problems rounds out the book.

**Combinatorial Extremization** - Yuefeng Feng 2016

In China, lots of excellent students who are good at maths takes an active part in various maths contests and the best six senior high school students will be selected to form the IMO National Team to compete in the International Mathematical Olympiad. In the past ten years China's IMO Team has achieved outstanding results -- they have won the first place almost every year. The author is one of the coaches of China's IMO National Team, whose students have won many gold medals many times in IMO. This book is part of the Mathematical Olympiad Series which discusses several aspects related to maths contests, such as algebra, number theory, combinatorics, graph theory and geometry. The book

elaborates on methods of discrete extremization, such as inequality control, repeated extremum, partial adjustment, exploiting symmetry, polishing transform, space estimates, etc.

**Geometric Inequalities** - Gangsong Leng 2015-10-21

In China, lots of excellent maths students take an active interest in various maths contests and the best six senior high school students will be selected to form the IMO National Team to compete in the International Mathematical Olympiad. In the past ten years China's IMO Team has achieved outstanding results -- they won the first place almost every year. The author is one of the coaches of China's IMO National Team, whose students have won many gold medals many times in IMO. This book is part of the Mathematical Olympiad Series which discusses several aspects related to maths contests, such as algebra, number theory, combinatorics, graph theory and geometry. The book elaborates on Geometric Inequality problems such as inequality for the inscribed quadrilateral, the area inequality for special polygons, linear geometric inequalities, etc.

**Lecture Notes On Mathematical Olympiad Courses: For Senior Section - Volume 2** - Jiagu Xu 2012-03-21

Olympiad mathematics is not a collection of techniques of solving mathematical problems but a system for advancing mathematical education. This book is based on the lecture notes of the mathematical Olympiad training courses conducted by the author in Singapore. Its scope and depth not only covers and beyond the usual syllabus, but introduces a variety of concepts and methods in modern mathematics as well. In each lecture, the concepts, theories and methods are taken as the core. The examples serve to explain and enrich their intentions and to indicate their applications. Besides, appropriate number of test questions is available for the readers' practice and testing purpose. Their detailed solutions are also conveniently provided. The examples are not very complicated so readers can easily understand. There are many real competition questions included which students can use to verify their abilities. These test questions originate from many countries all over the world. This book will serve as a useful textbook of mathematical Olympiad courses, a self-study lecture notes for students, or as a reference book for related teachers and researchers.

**Introduction to Math Olympiad Problems** - Michael A. Radin 2021-06-24

Introduction to Math Olympiad Problems aims to introduce high school students to all the necessary topics that frequently emerge in international Math Olympiad competitions. In addition to introducing the topics, the book will also provide several repetitive-type guided problems to help develop vital techniques in solving problems correctly and efficiently. The techniques employed in the book will help prepare students for the topics they will typically face in an Olympiad-style event, but also for future college mathematics courses in Discrete Mathematics, Graph Theory, Differential Equations, Number Theory and Abstract Algebra. Features: Numerous problems designed to embed good practice in readers, and build underlying reasoning, analysis and problem-solving skills Suitable for advanced high school

students preparing for Math Olympiad competitions  
**Combinatorial Extremization** - Yuefeng Feng 2016

**Graph Theory** - Bin Xiong 2010

Trouble in the Barker's Class

**Problems of Number Theory in Mathematical Competitions** - Hong-Bing Yu 2010

Number theory is an important research field of mathematics. In mathematical competitions, problems of elementary number theory occur frequently. These problems use little knowledge and have many variations. They are flexible and diverse. In this book, the author introduces some basic concepts and methods in elementary number theory via problems in mathematical competitions. Readers are encouraged to try to solve the problems by themselves before they read the given solutions of examples. Only in this way can they truly appreciate the tricks of problem-solving.

**Selected Problems of the Vietnamese Mathematical Olympiad (1962-2009)** - Hai Chau Le 2010

Vietnam has actively organized the National Competition in Mathematics and since 1962, the Vietnamese Mathematical Olympiad (VMO). On the global stage, Vietnam has also competed in the International Mathematical Olympiad (IMO) since 1974 and constantly emerged as one of the top ten. To inspire and further challenge readers, we have gathered in this book selected problems of the VMO from 1962 to 2008. A number of Selection Test problems are also included to aid in the formation and training of a national team for IMO. The book is highly useful for high school students and teachers, coaches and instructors preparing for mathematical olympiads, as well as non-experts simply interested in having the edge over their opponents in mathematical competitions.

**Extremal Graph Theory** - Bela Bollobas 2013-07-02

The ever-expanding field of extremal graph theory encompasses a diverse array of problem-solving methods, including applications to economics, computer science, and optimization theory. This volume, based on a series of lectures delivered to graduate students at the University of Cambridge, presents a concise yet comprehensive treatment of extremal graph theory. Unlike most graph theory treatises, this text features complete proofs for almost all of its results. Further insights into theory are provided by the numerous exercises of varying degrees of difficulty that accompany each chapter. Although geared toward mathematicians and research students, much of Extremal Graph Theory is accessible even to undergraduate students of mathematics. Pure mathematicians will find this text a valuable resource in terms of its unusually large collection of results and proofs, and professionals in other fields with an interest in the applications of graph theory will also appreciate its precision and scope.

**The Math Olympian** - Richard Hoshino 2015-01-26

BETHANY MACDONALD HAS TRAINED SIX LONG YEARS FOR THIS MOMENT. SHE'LL TRY TO SOLVE FIVE QUESTIONS IN THREE HOURS, FOR ONE IMPROBABLE DREAM. THE DREAM OF REPRESENTING HER COUNTRY, AND BECOMING A MATH OLYMPIAN. As a small-town girl in Nova Scotia bullied for liking numbers more than boys, and lacking the encouragement of her unsupportive single mother who frowns at her daughter's unrealistic ambition, Bethany's road to the International Math Olympiad has been marked by numerous challenges. Through persistence, perseverance, and the support of innovative mentors who inspire her with a love of learning, Bethany confronts these challenges and develops the creativity and confidence to reach her potential. In training to become a world-champion "mathlete", Bethany discovers the heart of mathematics - a subject that's not about memorizing formulas, but rather about problem-solving and detecting patterns to uncover truth, as well as learning how to apply the deep

and unexpected connections of mathematics to every aspect of her life, including athletics, spirituality, and environmental sustainability. As Bethany reflects on her long journey and envisions her exciting future, she realizes that she has shattered the misguided stereotype that only boys can excel in math, and discovers a sense of purpose that through mathematics, she can and she will make an extraordinary contribution to society.

**103 Trigonometry Problems** - Titu Andreescu 2006-03-06

\* Problem-solving tactics and practical test-taking techniques provide in-depth enrichment and preparation for various math competitions \* Comprehensive introduction to trigonometric functions, their relations and functional properties, and their applications in the Euclidean plane and solid geometry \* A cogent problem-solving resource for advanced high school students, undergraduates, and mathematics teachers engaged in competition training

**102 Combinatorial Problems** - Titu Andreescu 2013-11-27

"102 Combinatorial Problems" consists of carefully selected problems that have been used in the training and testing of the USA International Mathematical Olympiad (IMO) team. Key features: \* Provides in-depth enrichment in the important areas of combinatorics by reorganizing and enhancing problem-solving tactics and strategies \* Topics include: combinatorial arguments and identities, generating functions, graph theory, recursive relations, sums and products, probability, number theory, polynomials, theory of equations, complex numbers in geometry, algorithmic proofs, combinatorial and advanced geometry, functional equations and classical inequalities The book is systematically organized, gradually building combinatorial skills and techniques and broadening the student's view of mathematics. Aside from its practical use in training teachers and students engaged in mathematical competitions, it is a source of enrichment that is bound to stimulate interest in a variety of mathematical areas that are tangential to combinatorics.

**Handbook of Research on Urban and Humanitarian Logistics** - Gonzalez-Feliu, Jesus 2019-06-28

City logistics is one of the most popular fields of transportation sciences, dealing with sustainably supplying cities and at the same time reducing congestion and pollution related to goods transport in urban areas. Recently, humanitarian, emergency, and crises logistics has been a subject of increasing interest, often seen from an international viewpoint. However, some of the recent natural crises have shown the importance of resilience and reliability of the current urban logistics systems. The Handbook of Research on Urban and Humanitarian Logistics is a critical scholarly publication that addresses urban logistics and resilience, sustainable urban logistics, humanitarian logistics in urban areas both for crisis or long-term, and planning for resilient urban development. Featuring a broad range of topics that discuss the new and future trends in urban logistics and resilient cities, this publication is ideal for public planners; urban planners; company managers in logistics and transport; consulting agencies; regional, national, and international institutions and organizations; researchers; academicians; and students.

**Principles and Techniques in Combinatorics** - Chuan-Chong Chen 1992

A textbook suitable for undergraduate courses. The materials are presented very explicitly so that students will find it very easy to read. A wide range of examples, about 500 combinatorial problems taken from various mathematical competitions and exercises are also included.

**Geometric Inequalities** - Gangsong Leng 2015

**Inequalities** - Radmila Bulajich Manfrino 2010-01-01

This book is intended for the Mathematical Olympiad

students who wish to prepare for the study of inequalities, a topic now of frequent use at various levels of mathematical competitions. In this volume we present both classic inequalities and the more useful inequalities for confronting and solving optimization problems. An important part of this book deals with geometric inequalities and this fact makes a big difference with respect to most of the books that deal with this topic in the mathematical olympiad. The book has been organized in four chapters which have each of them a different character. Chapter 1 is dedicated to present basic inequalities. Most of them are numerical inequalities generally lacking any geometric meaning. However, where it is possible to provide a geometric interpretation, we include it as we go along. We emphasize the importance of some of these inequalities, such as the inequality between the arithmetic mean and the geometric mean, the Cauchy-Schwarz inequality, the rearrangement inequality, the Jensen inequality, the Muirhead theorem, among others. For all these, besides giving the proof, we present several examples that show how to use them in mathematical olympiad problems. We also emphasize how the substitution strategy is used to deduce several inequalities.

**Combinatorial Problems in Mathematical Competitions** - Yao Zhang 2011

Annotation. This text provides basic knowledge on how to solve combinatorial problems in mathematical competitions, and also introduces important solutions to combinatorial problems and some typical problems with often-used solutions.

**A Second Step to Mathematical Olympiad Problems** - Derek Allan Holton 2011

The International Mathematical Olympiad (IMO) is an annual international mathematics competition held for pre-collegiate students. It is also the oldest of the international science olympiads, and competition for places is particularly fierce. This book is an amalgamation of the booklets originally produced to guide students intending to contend for placement on their country's IMO team. See also *A First Step to Mathematical Olympiad Problems* which was published in 2009. The material contained in this book provides an introduction to the main mathematical topics covered in the IMO, which are: Combinatorics, Geometry and Number Theory. In addition, there is a special emphasis on how to approach unseen questions in Mathematics, and model the writing of proofs. Full answers are given to all questions. Though *A Second Step to Mathematical Olympiad Problems* is written from the perspective of a mathematician, it is written in a way that makes it easily comprehensible to adolescents. This book is also a must-read for coaches and instructors of mathematical competitions.

**A First Step to Mathematical Olympiad Problems** - Derek Holton 2009-07-30

See also *A SECOND STEP TO MATHEMATICAL OLYMPIAD PROBLEMS*  
The International Mathematical Olympiad (IMO) is an annual international mathematics competition held for pre-collegiate students. It is also the oldest of the international science olympiads, and competition for places is particularly fierce. This book is an amalgamation of the first 8 of 15 booklets originally produced to guide students intending to contend for placement on their country's IMO team. The material contained in this book provides an introduction to the main mathematical topics covered in the IMO, which are: Combinatorics, Geometry and Number Theory. In addition, there is a special emphasis on how to approach unseen questions in Mathematics, and model the writing of proofs. Full answers are given to all questions. Though *A First Step to Mathematical Olympiad Problems* is written from the perspective of a mathematician, it is written in a way that makes it easily comprehensible to adolescents. This book is also a must-read for coaches

and instructors of mathematical competitions.

**Graph Theory** - Radu Bumbacea 2020-03-30

**Mathematical Olympiad in China (2007-2008)** - Bin Xiong 2009

The International Mathematical Olympiad (IMO) is a competition for high school students. China has taken part in the IMO 21 times since 1985 and has won the top ranking for countries 14 times, with a multitude of golds for individual students. The six students China has sent every year were selected from 20 to 30 students among approximately 130 students who took part in the annual China Mathematical Competition during the winter months. This volume comprises a collection of original problems with solutions that China used to train their Olympiad team in the years from 2006 to 2008.

Mathematical Olympiad problems with solutions for the years 2002-2006 appear in an earlier volume, *Mathematical Olympiad in China*.

**Problem-Solving Strategies** - Arthur Engel 2008-01-19

A unique collection of competition problems from over twenty major national and international mathematical competitions for high school students. Written for trainers and participants of contests of all levels up to the highest level, this will appeal to high school teachers conducting a mathematics club who need a range of simple to complex problems and to those instructors wishing to pose a "problem of the week", thus bringing a creative atmosphere into the classrooms. Equally, this is a must-have for individuals interested in solving difficult and challenging problems. Each chapter starts with typical examples illustrating the central concepts and is followed by a number of carefully selected problems and their solutions. Most of the solutions are complete, but some merely point to the road leading to the final solution. In addition to being a valuable resource of mathematical problems and solution strategies, this is the most complete training book on the market.

**Mathematical Olympiads 2000-2001** - Titu Andreescu 2003-10-16

This book is a continuation of *Mathematical Olympiads 1999-2000: Problems and Solutions From Around the World*, published by the Mathematical Association of America. It contains solutions to the problems from 27 national and regional contests featured in the earlier book, together with selected problems (without solutions) from national and regional contests given during 2001. In many cases multiple solutions are provided in order to encourage students to compare different problem-solving strategies. The editors have tried to present a wide variety of problems, especially from those countries that have often done well at the IMO. The problems themselves should provide much enjoyment for all those fascinated by solving challenging mathematics questions.

**Combinatorics** - Pavle Mladenović 2019-03-13

This text provides a theoretical background for several topics in combinatorial mathematics, such as enumerative combinatorics (including partitions and Burnside's lemma), magic and Latin squares, graph theory, extremal combinatorics, mathematical games and elementary probability. A number of examples are given with explanations while the book also provides more than 300 exercises of different levels of difficulty that are arranged at the end of each chapter, and more than 130 additional challenging problems, including problems from mathematical olympiads. Solutions or hints to all exercises and problems are included. The book can be used by secondary school students preparing for mathematical competitions, by their instructors, and by undergraduate students. The book may also be useful for graduate students and for researchers that apply combinatorial methods in different areas.

**The Mathematical Coloring Book** - Alexander Soifer 2008-10-13

This book provides an exciting history of the discovery of Ramsey Theory, and contains new research along with rare photographs of the mathematicians who developed this theory, including Paul Erdős, B.L. van der Waerden, and Henry Baudet.

Combinatorial Problems In Mathematical Competitions - Yao Zhang 2011-03-10

This book focuses on combinatorial problems in mathematical competitions. It provides basic knowledge on how to solve combinatorial problems in mathematical competitions, and also introduces important solutions to combinatorial problems and some typical problems with often-used solutions. Some enlightening and novel examples and exercises are well chosen in this book. With this book, readers can explore, analyze and summarize the ideas and methods of solving combinatorial problems. Their mathematical culture and ability will be improved remarkably after reading this book.

**Methods and Techniques for Proving Inequalities** - Yong Su 2015

In China, lots of excellent maths students take an active interest in various maths contests and the best six senior high school students will be selected to form the IMO National Team to compete in the International Mathematical Olympiad. In the past ten years China's IMO Team has achieved outstanding results -- they won the first place almost every year. The authors are coaches of China's IMO National Team, whose students have won many gold medals many times in IMO. This book is part of the Mathematical Olympiad Series which discusses several aspects related to maths contests, such as algebra, number theory, combinatorics, graph theory and geometry. The book explains many basic techniques for proving inequalities such as direct comparison, method of magnifying and reducing, substitution method, construction method, and so on.

**Probability and Expectation** - Zun Shan 2016-07-14

In China, lots of excellent students who are good at maths take an active part in various maths contests and the best six senior high school students will be selected to form the IMO National Team to compete in the International Mathematical Olympiad. In the past ten years China's IMO Team has achieved outstanding results -- they have won the first place almost every year. The author is one of the senior coaches of China's IMO National Team, whose students have won many gold medals many times in IMO. This book is part of the Mathematical Olympiad Series which discusses several aspects related to maths contests, such as algebra, number theory, combinatorics, graph theory and geometry. This book will, in an interesting problem-solving way, explain what probability theory is: its concepts, methods and meanings; particularly, two important concepts -- probability and mathematical expectation (briefly expectation) -- are emphasized. It consists of 65 problems, appended by 107 exercises and their answers.

A First Course in Graph Theory - Gary Chartrand 2013-05-20

Written by two prominent figures in the field, this comprehensive text provides a remarkably student-friendly approach. Its sound yet accessible treatment emphasizes the history of graph theory and offers unique examples and lucid proofs. 2004 edition.

The Colorado Mathematical Olympiad and Further Explorations - Alexander Soifer 2011-04-11

This updated printing of the first edition of Colorado Mathematical Olympiad: the First Twenty Years and Further Explorations gives the interesting history of the competition as well as an outline of all the problems and solutions that have been created for the contest over the years. Many of the essay problems were inspired by Russian mathematical folklore and written to suit the young audience; for example, the 1989 Sugar problem was written in a pleasant Lewis Carroll-like story. Some other entertaining problems involve olde

Victorian map colourings, King Arthur and the knights of the round table, rooks in space, Santa Claus and his elves painting planes, football for 23, and even the Colorado Springs subway system.

Graphs and Matrices - Ravindra B. Bapat 2014-09-19

This new edition illustrates the power of linear algebra in the study of graphs. The emphasis on matrix techniques is greater than in other texts on algebraic graph theory. Important matrices associated with graphs (for example, incidence, adjacency and Laplacian matrices) are treated in detail. Presenting a useful overview of selected topics in algebraic graph theory, early chapters of the text focus on regular graphs, algebraic connectivity, the distance matrix of a tree, and its generalized version for arbitrary graphs, known as the resistance matrix. Coverage of later topics include Laplacian eigenvalues of threshold graphs, the positive definite completion problem and matrix games based on a graph. Such an extensive coverage of the subject area provides a welcome prompt for further exploration. The inclusion of exercises enables practical learning throughout the book. In the new edition, a new chapter is added on the line graph of a tree, while some results in Chapter 6 on Perron-Frobenius theory are reorganized. Whilst this book will be invaluable to students and researchers in graph theory and combinatorial matrix theory, it will also benefit readers in the sciences and engineering.

Graph Theory - Bin Xiong 2010-03-17

In 1736, the mathematician Euler invented graph theory while solving the Königsberg seven-bridge problem. Over 200 years later, graph theory remains the skeleton content of discrete mathematics, which serves as a theoretical basis for computer science and network information science. This book introduces some basic knowledge and the primary methods in graph theory by many interesting problems and games.

**Graph Theory** - Daniel A. Marcus 2020-02-04

Graph Theory presents a natural, reader-friendly way to learn some of the essential ideas of graph theory starting from first principles. The format is similar to the companion text, *Combinatorics: A Problem Oriented Approach* also by Daniel A. Marcus, in that it combines the features of a textbook with those of a problem workbook. The material is presented through a series of approximately 360 strategically placed problems with connecting text. This is supplemented by 280 additional problems that are intended to be used as homework assignments. Concepts of graph theory are introduced, developed, and reinforced by working through leading questions posed in the problems. This problem-oriented format is intended to promote active involvement by the reader while always providing clear direction. This approach figures prominently on the presentation of proofs, which become more frequent and elaborate as the book progresses. Arguments are arranged in digestible chunks and always appear along with concrete examples to keep the readers firmly grounded in their motivation. Spanning tree algorithms, Euler paths, Hamilton paths and cycles, planar graphs, independence and covering, connections and obstructions, and vertex and edge colorings make up the core of the book. Hall's Theorem, the König-Egervary Theorem, Dilworth's Theorem and the Hungarian algorithm to the optional assignment problem, matrices, and latin squares are also explored.

Problems and Solutions in Mathematical Olympiad (High School 3) - Hong-Bing Yu 2022-04-18

The series is edited by the head coaches of China's IMO National Team. Each volume, catering to different grades, is contributed by the senior coaches of the IMO National Team. The Chinese edition has won the award of Top 50 most influential educational brand in China. The series is in line with the mathematics cognition and intellectual development level of the students in the corresponding grade. The volume lines up the topics in

each chapter and introduces a variety of concepts and methods to provide with the knowledge, then gradually transitions to the competition level. The content covers all the hot topics of the competition. In each chapter, there are packed with many problems including some real competition questions which students can use to verify their abilities. Selected detailed answers are provided. Some of the solutions are from national training team and national team members, their wonderful solutions being the feature of this series.

Euclidean Geometry in Mathematical Olympiads - Evan Chen  
2021-08-23

This is a challenging problem-solving book in Euclidean geometry, assuming nothing of the reader other than a good deal of courage. Topics covered included cyclic quadrilaterals, power of a point, homothety, triangle centers; along the way the reader will meet such classical gems as the nine-point circle, the Simson line, the symmedian and the mixtilinear incircle, as well as the theorems of Euler, Ceva, Menelaus, and Pascal. Another part is dedicated to the use of complex numbers and barycentric coordinates, granting the reader both a traditional and computational viewpoint of the material. The final part consists of some more advanced topics, such as inversion in the plane, the cross ratio and projective transformations, and the theory of the complete quadrilateral. The exposition is friendly and relaxed, and accompanied by over 300 beautifully drawn figures. The emphasis of this book is placed squarely on the problems. Each chapter contains carefully chosen worked examples, which explain not only the solutions to the problems but also describe in close detail how one would invent the solution to begin with. The text contains a selection of 300 practice problems of varying difficulty from contests around the world, with extensive hints and selected solutions. This book is especially suitable for students preparing for national or international mathematical olympiads or for teachers looking for a text for an honor class.

Introduction to Counting and Probability - David Patrick  
2007-08-01

**Lecture Notes on Mathematical Olympiad Courses** - Jiagu Xu 2010

Olympiad mathematics is not a collection of techniques of solving mathematical problems but a system for advancing mathematical education. This book is based on the lecture notes of the mathematical Olympiad training courses conducted by the author in Singapore. Its scope and depth not only covers and exceeds the usual syllabus, but introduces a variety concepts and methods in modern mathematics. In each lecture, the concepts, theories and methods are taken as the core. The examples are served to explain and enrich their intension and to indicate their applications. Besides, appropriate number of test questions is available for reader's practice and testing purpose. Their detailed solutions are also conveniently provided. The examples are not very complicated so that readers can easily understand. There are many real competition questions included which students can use to verify their abilities. These test questions are from many countries, e.g. China, Russia, USA, Singapore, etc. In particular, the reader can find many questions from China, if he is interested in understanding mathematical Olympiad in China. This book serves as a useful textbook of mathematical Olympiad courses, or as a reference book for related teachers and researchers. Errata(s). Errata. Sample Chapter(s).  
Lecture 1: Operations on Rational Numbers (145k).  
Request Inspection Copy. Contents: .: Operations on Rational Numbers; Linear Equations of Single Variable; Multiplication Formulae; Absolute Value and Its Applications; Congruence of Triangles; Similarity of Triangles; Divisions of Polynomials; Solutions to Testing Questions; and other chapters. Readership: Mathematics students, school teachers, college lecturers, university professors; mathematics enthusiasts