Mathematical Olympiad Series

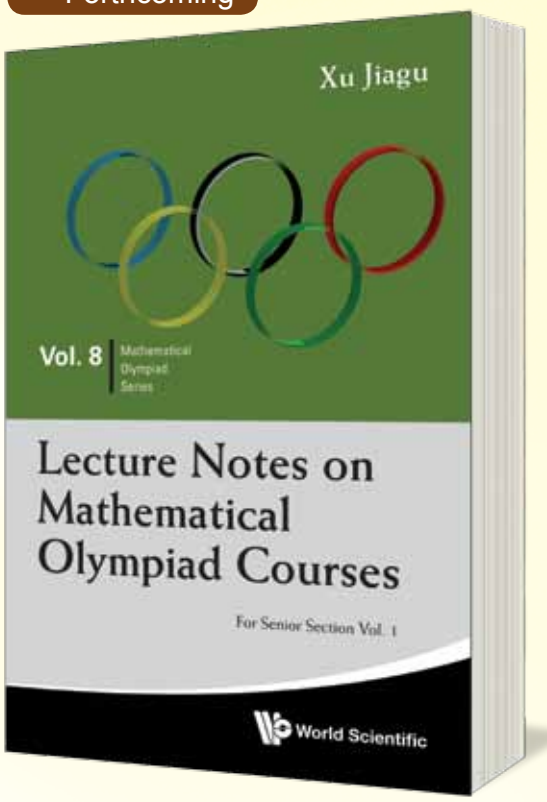
LECTURE NOTES ON MATHEMATICAL OLYMPIAD COURSES

by **Jiagu Xu** *(Former Professor of Mathematics, Fudan University, China)*

Olympiad mathematics is not a collection of techniques of solving mathematical problems but a system for advancing mathematical education. These two books are 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.

:: Forthcoming



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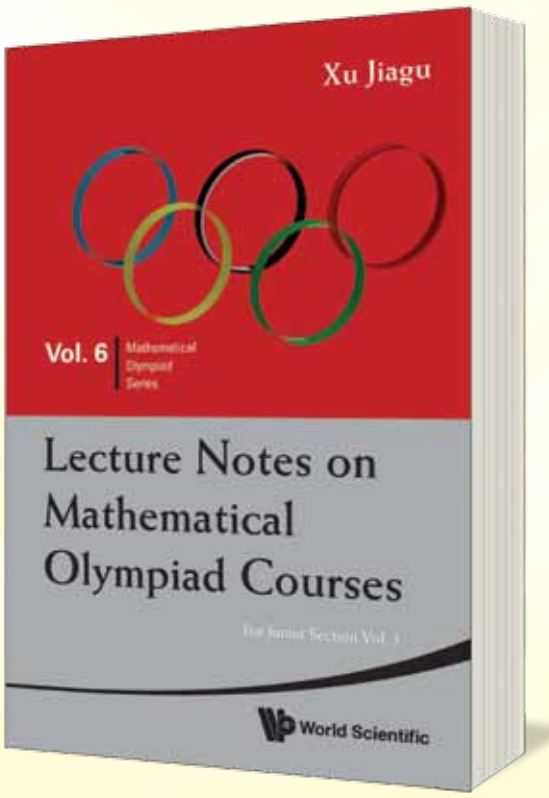

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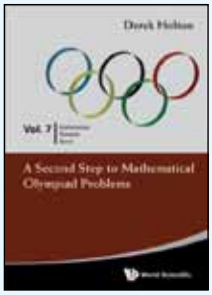
Vol. 7

A SECOND STEP TO MATHEMATICAL OLYMPIAD PROBLEMS

by **Derek Holton** *(University of Otago, New Zealand & University of Melbourne, Australia)*



This book is an amalgamation of the 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 this book 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.

312pp **Jun 2011**
978-981-4327-87-9(pbk) **US$38 £24**

Vol. 1

A FIRST STEP TO MATHEMATICAL OLYMPIAD PROBLEMS

by **Derek Holton** *(University of Otago, New Zealand & University of Melbourne, Australia)*

"This book continues the tradition making national and international mathematical competition problems available to a wider audience and is bound to appeal to anyone interested in mathematical problem solving. The reviewer recommends this book to all students curious about elementary mathematics and how to learn it through solving problems. Teachers would find this book to be a welcome resource for organizing their activities at a high level."

Zentralblatt MATH

292pp **Jul 2009**
978-981-4273-87-9(pbk) **US$35 £26**

Vol. 5

SELECTED PROBLEMS OF THE VIETNAMESE MATHEMATICAL OLYMPIAD (1962–2009)

by **Le Hai Chau** *(Ministry of Education and Training, Vietnam)* & **Le Hai Khoi** *(Nanyang Technological University, Singapore)*

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 problems of various degrees of difficulty of the VMO from 1962 to 2009.

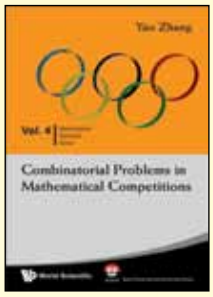
The book is highly useful for high school students and teachers, coaches and instructors preparing for mathematical olympiads, as well as non-experts simply interested in having the edge over their opponents in mathematical competitions.

332pp **Sep 2010**
978-981-4289-59-7(pbk) **US$39 £24**

Vol. 4

COMBINATORIAL PROBLEMS IN MATHEMATICAL COMPETITIONS

by **Yao Zhang** *(Hunan Normal University, China)*



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.

304pp **Mar 2011**
978-981-283-949-7(pbk) **US$34 £22**

Vol. 3

GRAPH THEORY

by **Bin Xiong** *(East China Normal University, China)*, **Zhongyi Zheng** *(High School Attached to Fudan University, China)*, translated by **Ruifang Liu**, **Mingqing Zhai** & **Yuanqing Lin** *(East China Normal University, China)*

In 1736, the mathematician Euler invented graph theory while solving the Konigsberg 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.

156pp **Mar 2010**
978-981-4271-12-7(pbk) **US$32 £21**

Vol. 2

PROBLEMS OF NUMBER THEORY IN MATHEMATICAL COMPETITIONS

by **Hong-Bing Yu** *(Suzhou University, China)* & translated by **Lei Lin** *(East China Normal University, China)*

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.

116pp **Sep 2009**
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