

ZMATH 2013e.00639

Soberón Bravo, Pablo

Problem-solving methods in combinatorics. An approach to Olympiad problems.

New York, NY: Birkhäuser/Springer (ISBN 978-3-0348-0596-4/pbk; 978-3-0348-0597-1/ebook). ix, 174 p. (2013).

Traditionally, one or more problems in combinatorics are included in the fix final selected problem at every IMO, and usually are the most difficult. Many authors have tried to present the necessary methods for solving them, but the theoretical background needed reduces the usability of such a book. The structure of the present book introduce in a very clever and direct way almost all the necessary notions, while involving the reader to a problem-solving methodology in order to confront very demanding tasks in combinatorics. The necessary notions: combinatorial principles, graph theory, generating functions and partitions are shortly but very successfully presented in Chapters 1, 2, and 4–7. A very interesting chapter concerning invariants in combinatorics is included, along with a chapter which should be used by the readers with proposed limits for the problems. The book is concluded with the full solutions of the problems. *Panayiotis Vlamos (Athens)*

Classification: K20 U40 D50

Keywords: problems in combinatorics; combinatorial principles; graph theory; generating functions; partitions; invariant; problem-solving methodology

doi:10.1007/978-3-0348-0597-1