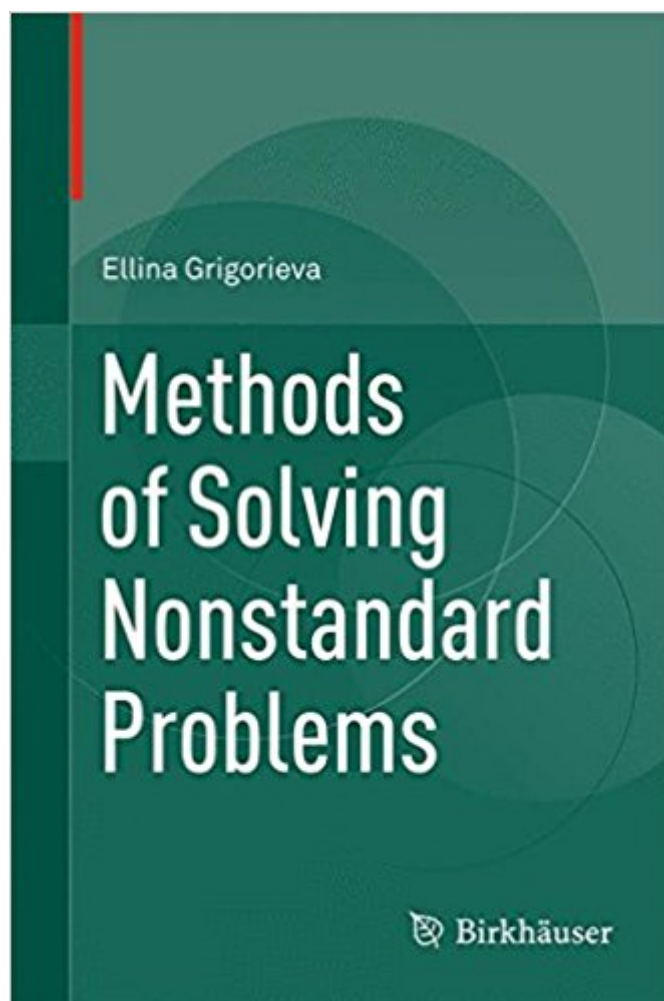




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Methods Of Solving Nonstandard Problems



Synopsis

This book, written by an accomplished female mathematician, is the second to explore nonstandard mathematical problems – those that are not directly solved by standard mathematical methods but instead rely on insight and the synthesis of a variety of mathematical ideas. It promotes mental activity as well as greater mathematical skills, and is an ideal resource for successful preparation for the mathematics Olympiad. Numerous strategies and techniques are presented that can be used to solve intriguing and challenging problems of the type often found in competitions. The author uses a friendly, non-intimidating approach to emphasize connections between different fields of mathematics and often proposes several different ways to attack the same problem. Topics covered include functions and their properties, polynomials, trigonometric and transcendental equations and inequalities, optimization, differential equations, nonlinear systems, and word problems. Over 360 problems are included with hints, answers, and detailed solutions. *Methods of Solving Nonstandard Problems* will interest high school and college students, whether they are preparing for a math competition or looking to improve their mathematical skills, as well as anyone who enjoys an intellectual challenge and has a special love for mathematics. Teachers and college professors will be able to use it as an extra resource in the classroom to augment a conventional course of instruction in order to stimulate abstract thinking and inspire original thought.

Book Information

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Customer Reviews

“Students with an interest in problem-solving (particularly students who like to take Olympiad-style contests) will find suggestions, techniques and examples here that will serve them well. Students who are studying, or want to brush up on, basic algebra or trigonometry should also find material of interest here. Instructors of basic algebra, trigonometry, calculus, and even number theory or combinatorics may also find some interesting problems in this book to present to this class either in lecture or as homework.” (Mark Hunacek, MAA Reviews, maa.org, December, 2015)

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I got this for my daughter (high school) but spent almost the entire night reading it myself. In general, competition problem books are just a collection of problems categorized by some loose theme. In this book, the author shows you how to solve problems that at first seem to be almost impossible to solve by constructing a general problem solving approach for different classes of problems. This has the remarkable effect of automatically making the student think about problems from a different perspective and not get nervous when they see unfamiliar problems. Typically, one rarely uses words such as "suspenseful," "breath-taking," etc. when talking about math books. But, at many

occasions, I couldn't wait to see how the author approaches these problems. In many cases, I thought that the algebra would be long and tedious but on every occasion was pleasantly surprised to see how the techniques taught in the book actually made the solutions unfold naturally and elegantly. You will really learn problem solving skills from this book. This book will be a shining gem in your bookshelf.

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