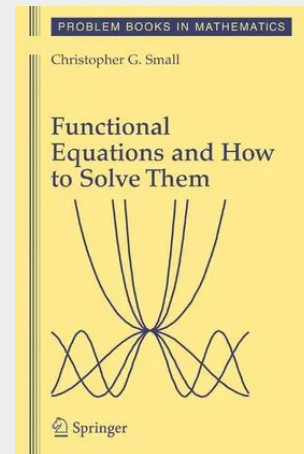


Functional Equations and How to Solve Them

Over the years, a number of books have been written on the theory of functional equations. However, very little has been published which helps readers to solve functional equations in mathematics competitions and mathematical problem solving. This book fills that gap. The student who encounters a functional equation on a mathematics contest will need to investigate solutions to the equation by finding all solutions, or by showing that all solutions have a particular property. The emphasis here will be on the development of those tools which are most useful in assigning a family of solutions to each functional equation in explicit form.

At the end of each chapter, readers will find a list of problems associated with the material in that chapter. The problems vary greatly, with the easiest problems being accessible to any high school student who has read the chapter carefully. The most difficult problems will be a reasonable challenge to advanced students studying for the International Mathematical Olympiad at the high school level or the William Lowell Putnam Competition for university undergraduates. The book ends with an appendix containing topics that provide a springboard for further investigation of the concepts of limits, infinite series and continuity.

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