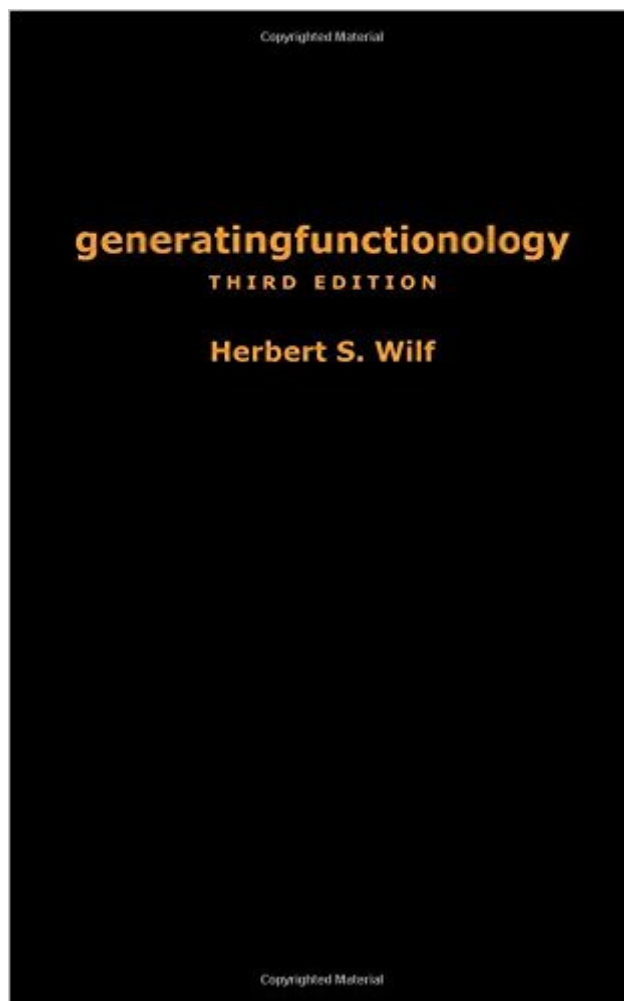


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# Generatingfunctionology: Third Edition



## Synopsis

Generating functions, one of the most important tools in enumerative combinatorics, are a bridge between discrete mathematics and continuous analysis. Generating functions have numerous applications in mathematics, especially in - Combinatorics - Probability Theory - Statistics - Theory of Markov Chains - Number Theory One of the most important and relevant recent applications of combinatorics lies in the development of Internet search engines whose incredible capabilities dazzle even the mathematically trained user.

## Book Information

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## Customer Reviews

Interested readers should be made aware that if a person does a net search for "Herbert Wilf's Home Page", and then goes to that site, the author has this book (and a number of other things) available for FREE downloading. That might be a great way to preview the book, even if you later decide to spend the money to get a nicely bound traditional copy here.

Generatingfunctionology is, in my opinion, one of the best mathematics books ever written. If you want to read one mathematics book that really makes a difference, this is it! I read the book twice, and I plan to read it again. I went from being rather inept at solving combinatorial problems to being a virtual "master" almost overnight! Wilf's writing style is clear, concise, and even humorous at times. Reading this book is like being blind and then having your eyes opened for the first time. Generating functions are an extremely powerful tool in number theory and combinatorics. Don't

pass up this book! You may never become an Euler, but you sure can come close!

This book is freely available online, but it is so good that it is worth buying a hard-copy of, and it's reasonably priced too. I would advise potential buyers to check it out online; you'll probably find that you like it, and you'll probably buy it after you get tired of staring at your screen or making printouts. Wilf is an outstanding writer, among the best writers in mathematics; this book is a true pleasure to read. His explanations are lucid and he has a great sense of humor. This book is not particularly advanced, although it is one of those texts that you can keep coming back to; it takes quite some time to exhaust the material in it and I have certainly not come close to doing so. It covers generating functions in the form of ordinary power series, exponential power series, and Dirichlet series, and it touches on a few other types of generating functions as well. There is a chapter on the exponential formula and a chapter which explores a more systematic approach to counting. The last chapter is on analytic methods to study asymptotic approximations to counting functions. The book is well organized; topics flow naturally, and yet it is easy to skip topics and move around freely. The exercises are immensely useful. They start simple, but there are many of them and they become progressively more difficult in a natural way. This book would be suitable for an undergraduate course in combinatorics, and it also makes a good supplementary text for anyone studying combinatorics or possibly complex analysis at the graduate level. I find this book is excellent for self-study at any level as well. Check it out for yourself!

This is a well-organized cookbook of generating function techniques. The emphasis is on combinatorial methods (breaking down the generating function into simpler, known functions). There is also a chapter on analytic methods (Lagrange reversion, contour integration, analysis of poles). The chapter on exponential generating functions is especially good; these are used when counting items that have "labelled components" in some sense. The book includes solutions of many difficult combinatorial problems by using generating functions. I think generating functions are an under-appreciated technique. Studying this book is a relatively painless way to learn about generating functions and their applications.

Wonderful, friendly introduction to generating functions. Wilf has a great writing style. In particular, his presentation of the exponential formula in terms of cards, hands, and decks made it much more digestible than in the abstract. My only criticism is that his treatment of series occasionally lacks rigor, especially concerning the algebraic aspects of formal power series (namely convergence in

the ring of formal power series).

A good introduction to the theory of generating functions and their uses. In fact, the only readable introduction I could find. It is NOT one of those many generation functions books written by mathematicians for mathematicians. Shows lots and lots of neat tricks that become available for a "generatingfunctionologist" in the fields of combinatorics and probability. All the material is presented in a very clean, organized way, with good examples. I use it as a hands-on reference book.

Generatingfunctionology is a classic that should be in any mathematician's library. Wilf approaches generating functions from every angle you can think of, from evaluating infinite series to counting abstract objects, and even to analytic methods for series. Each concept is explained clearly and plenty of thought-provoking exercises are available at the end of each chapter. Even though there is a free online version available from the author, I recommend buying the hard copy just to support Wilf for such a useful resource.

I did download this book for free from Dr. Wilf's homepage, but I've dog-eared my printouts so many times I thought I would buy a hard-bound copy. If you enjoy mathematical puzzles and games, if modern algebra seems too abstract (and possibly pointless) or if you have always wanted to study combinatorics, then I am sure you will love this book. It is advanced, Dr. Wilf is a master, but it is written in a friendly, motivated manner that sucks you in and pushes you along.

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