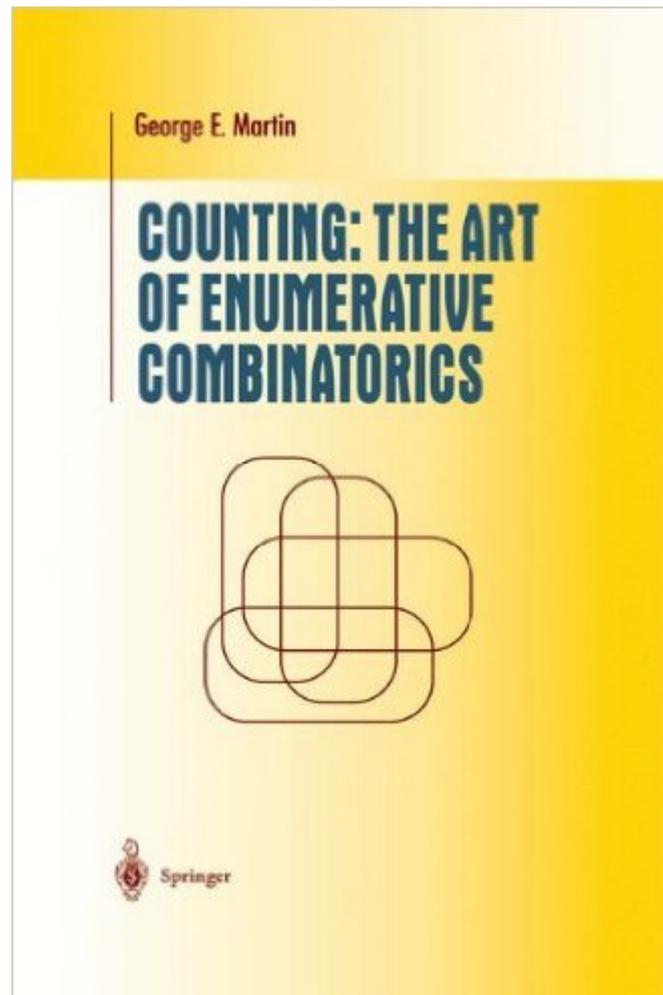


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# Counting: The Art Of Enumerative Combinatorics (Undergraduate Texts In Mathematics)



## Synopsis

This book provides an introduction to discrete mathematics. At the end of the book the reader should be able to answer counting questions such as: How many ways are there to stack  $n$  poker chips, each of which can be red, white, blue, or green, such that each red chip is adjacent to at least 1 green chip? The book can be used as a textbook for a semester course at the sophomore level. The first five chapters can also serve as a basis for a graduate course for in-service teachers.

## Book Information

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## Customer Reviews

This book is a good introduction to counting (combinatoric type counting). The book has answers to most of it's problems and recommends you try the problems before looking at the answers. Most of the problems are simple, and hit hard on the idea the section of the book is trying to get across. It covers simple counting, groups, generating functions, recurrence relations and mathematical induction. The book concludes with graph theory. Some chapter sections get a little hard to understand, hence the 4 star and not 5 star rating (2 stars is what I'd give a decent book, so this one is a shining star). Most of the book is clear cut.

This is a fun book to read. Contains lots of exercises (with solutions). The best part of the book is the one in which the author explains Polya's pattern inventory without taxing the reader with too many definitions. He uses coloring a dodecahedron to illustrate the theorem and one can easily

appreciate the power of the technique through this well chosen example. One glaring error is presenting the Lagrange's theorem (order of a subgroup divides the order of the group) as Legendre's theorem. The answers at the end of the book are detailed and very helpful for the student.

This book uniquely combines comprehensiveness and rigor with conciseness and a friendly, accessible tone. From the point of view of someone interested in computer science, all the key stuff is covered: perms/combs, pigeonhole, inclusion/exclusion, Stirling, Bell, Catalan, Fibonacci, recurrences, generating functions, induction, etc. There are lots of worked out examples and plenty of excellent, instructive problems with useful hints and solutions in the "back of the book" section (which comprises over 60 pages). As the author explains in the preface, chapters 1-3 plus 6 (recurrences) form a good CS course, to which I would add chapter 7 on induction. The final chapter on graph theory is necessarily incomplete, but still worth reading. Chapters 4 and 5 discuss symmetry groups and Polya theory, and are treated equally well for those who wish to delve into these subjects. Top notch stuff.

The book was a wonderful introduction to combinatorics for me. I taught myself combinatorics through this book. The book provided enough examples and answers for me to dive into combinatorics. I look forward to more combinatorics in the future thanks to this book!

This is a charming text on elementary combinatorics. Counting, or enumerative combinatorics, is-as the writer says-hard, but after you have gone through this very readable book, it becomes less hard and more interesting-so much so that you will want more of it. The reader is very much helped by the Back of the Book section which provides answers and, in many cases, solutions as well.

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