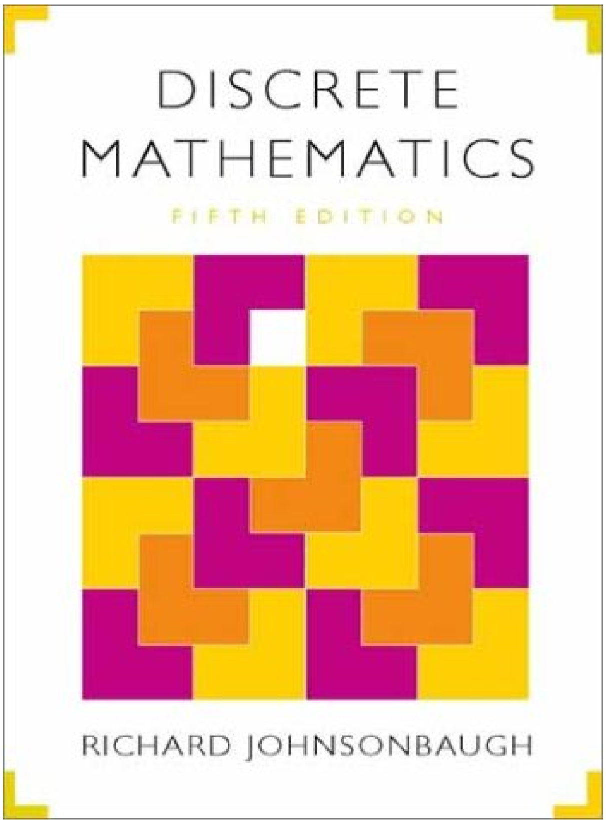
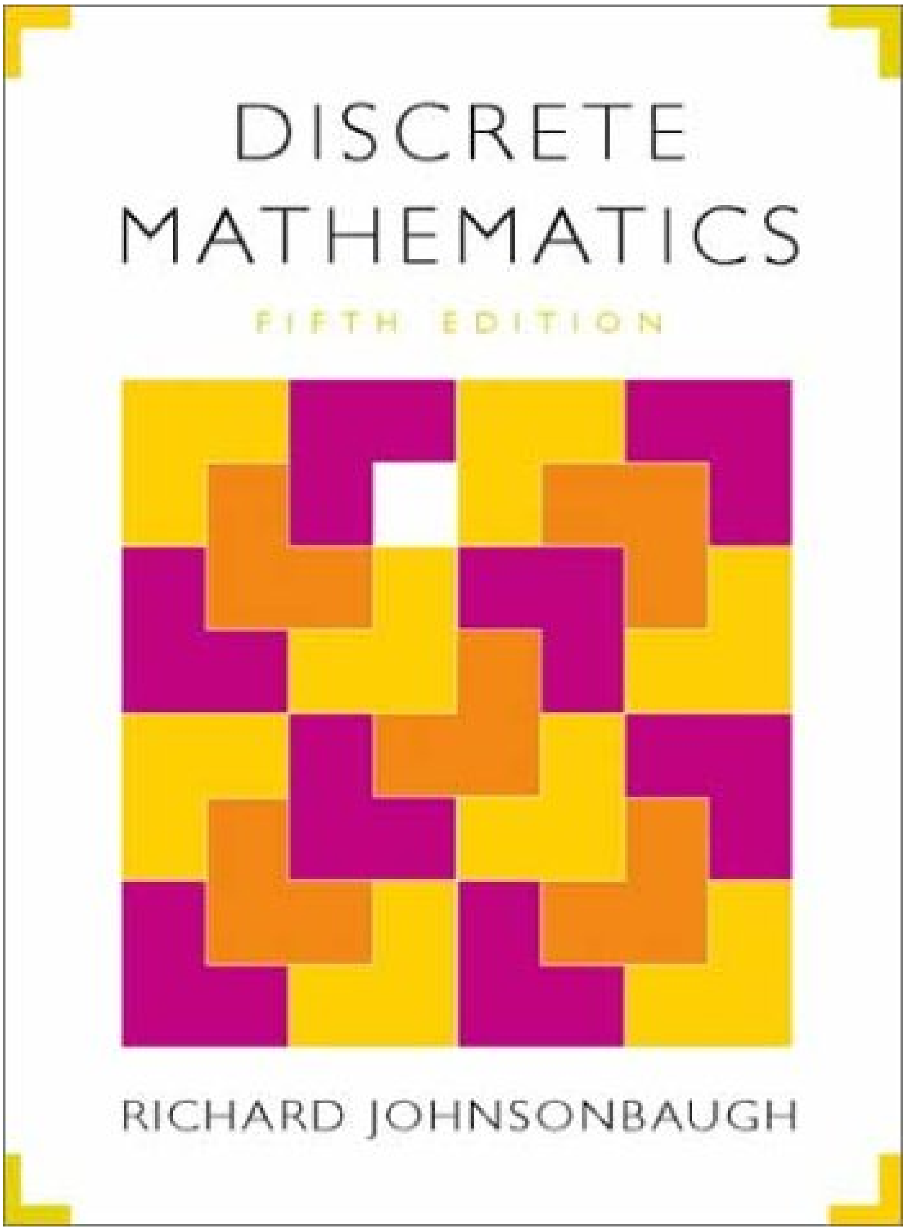
DISCRETE MATHEMATICS (5TH EDITION) BY RICHARD JOHNSONBAUGH

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MATHEMATICS
FIFTH EDITION
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From the Inside Flap
PREFACE

This book is intended for a one- or two-term introductory course in discrete mathematics, based on my experience in teaching this course over a 20-year period. Formal mathematics prerequisites are minimal; calculus is not required. There are no computer science prerequisites. The book includes examples, exercises, figures, tables, sections on problem-solving, section reviews, notes, chapter reviews, self-tests, and computer exercises to help the reader master introductory discrete mathematics. In addition, an Instructor's Guide and World Wide Web site are available.

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78 of 84 people found the following review helpful.

This book is as worthless as it is expensive

By A Customer

I taught a discrete math course in a major US university based on this book. Having been adopted by most US universities over the years, there was no choice.

There is no clear line of exposition in this book. Knowing what it should be about, it is repulsive to see how unstructured the content is, and how truly beautiful mathematics is made ugly beyond recognition. There exist far more insightful and shorter proofs than many of those given here.

Instead of developing a choice of key topics cleanly, transparently, and in detail, a large collection of loosely related facts are glued together in a supremely uninspired way. Some topics which are far too advanced for this level of exposition are mentioned over several pages, without any rigorous treatment, of course, while

many important topics are left away that could have been included.
The elegance quotient of this book is zero. Students should learn how to present a proof. They should learn to pin down the key ideas, and to write a proof in the clearest and most transparent language as possible. Whoever takes this text as her/his stylistic guide will do her/himself great harm.
I am a research mathematician. It is my job to know precisely what good mathematics looks like, and also to know when something smells really bad. Believe me, this one smells beyond rotten.
There are beautiful treatises on the same material on the internet, and one may also look at a small book for roughly 10 $ by Balakrishnan, from Dover publishers (available on Amazon, "Introductory discr math"). It doesn't contain as much material, but is so much more worth the money. A diligently made choice of topics is presented in clear, concise words that are to the point.
There is also the book by Laszlo Lovasz, a master of the field. The clarity, inspiration and transparence of the exposition is absolutely exemplary. The paperback version costs around 35$ on Amazon.
If you read those texts, you will understand what Johnsonbaugh is trying to put into clumsy words, illiterate proofs, boring examples, and silly pictures.
What really hurts me is to see students, some of whom are not rich, paying 100 $ for this convoluted mess.
My main message to every student using Mr. Johnsonbaugh's oeuvre is: If you don't understand this mess, it may be because you have mathematical talent. Go and look for a better, cheaper text. Save your time, it's not worth trying to figure out what the author intends to say.

44 of 47 people found the following review helpful.
Why?
By Home Recordist
Why must so many universities foist this abomination upon their CS students as a required text? Is there really nothing better available, or does Johnsonbaugh possess incriminating photos of every school's Dean of ENGR in the country?
This is, without a doubt, the WORST textbook I have EVER encountered -- in any subject. It might qualify as the worst textbook OF ALL TIME. Yes, it's really that horrible. It's verbose. It's dull. Many of the examples are longer than necessary (and more than occasionally, misleading). Like many texts on this topic, it features Solutions to Selected Exercises in the back, but what's the point in displaying the final answer to an involved problem if you don't demonstrate how you arrived at it? If you're going to print an answer, PLEASE provide us with the COMPLETE answer.
I have searched (largely in vain) for another text or two to use as study aids. If you're thinking about Schaum's, hang onto your money (Note to Schaum's: Why publish a separate book of "Solved Problems" if you're merely recycling the same examples from the Outlines book?). Susanna S. Epp's textbook is much better in most places -- most notably the section on graphs.
Bottom line: if your school adopts Johnsonbaugh as the required text for your course, hang onto your money and rely on your lecture notes. This book is a waste of trees.

21 of 24 people found the following review helpful.
Garbage
By Amazon Customer
This book epitomizes the common flaw in higher education today-expecting that an "expert in a field" makes them an "expert teacher". Bull. This book is written by someone who has decided to write a book 6 levels above the education of their readers just so they can prove a point at how smart they are. I'll bet Johnsonbaugh is the kind of guy that just stands at the board writing his notes that he could just give to you, just so he can hear the glory of his own voice. I have taken 4 semesters of calculus as an undergrad, as well as various science graduate courses and am LOST when reading this book. This book may be good for math "majors," but for people looking in other fields (Computer science, for example) it is terrible.

School administrators, take note: Find another book for your students. Just because this guy is an expert, doesn't mean he can come close to making everyone else one. Spend time studying the impact of this book, and you will see that this book is as effective in educating as a ruler to the knuckles.

Johnsonbaugh should stay where he belongs-in the lab, solving the world's math problems and leave teaching up to the teachers.

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A large number of applications, especially applications to computer science. Over 3500 exercises, with answers to about one-third of them in the back of the book. (Exercises with numbers in color have an answer in the back of the book.) Figures and tables to illustrate concepts, to show how algorithms work, to elucidate proofs, and to motivate the material. Several figures illustrate proofs of theorems. The captions of these figures provide additional explanation and insight into the proofs. Section reviews. Notes sections with suggestions for further reading. Chapter reviews. Chapter self-tests. Computer exercises. A reference section containing 150 references. Front and back endpapers that summarize the mathematical and algorithm notation used in the book. CHANGES FROM THE FOURTH EDITION The first chapter on logic and proofs is considerably enhanced. Several new motivating examples have been added. A logic game, which offers an alternative way to determine whether a quantified propositional function is true or false, is discussed in Example 1.3.17. Section 1.4 now includes rules of inference for both propositions and quantified statements. The number of exercises in this chapter has been increased from 232 to 391. Arrow diagrams have been added to give a pictorial view of the definition of a function, one-to-one functions, onto functions, inverse functions, and the composition of functions (see Section 2.8). Graphs of functions have been added to give yet another view of functions (see Section 2.8). Two optional sections (Sections 4.4 and 4.5) have been added on discrete probability. We discuss the fundamental terminology (e.g., experiment, event), the use of counting techniques to compute probabilities, basic formulas, mutually exclusive events, conditional probability, independent events, and Bayes' Theorem and its use in pattern recognition. The setting for the Problem-Solving Corner in Chapter 5 has been changed to a more inviting and contemporary setting: sorting in a spreadsheet. The fourth edition's Section 8.5 on Petri nets has been moved to the Web site that accompanies this book. Appendix B, which reviews basic algebra, has been added. The topics treated are rules for combining and simplifying expressions, fractions, exponents, factoring, quadratic equations, inequalities, and logarithms. A number of computer examples now show actual computer screens to help connect the theory to practical applications. Several new examples have been added dealing with Searching the World Wide Web, with a real example using the AltaVista search engine and Boolean expressions (Example 1.1.14) A logic game (Example 1.3.17) Using the matrix of a relation to determine whether the relation is transitive (Example 2.6.7) Pseudorandom number generators (Example 2.8.14) The Melissa virus (as an example of combinatorial explosion) (Example 4.1.2) The birthday problem (Example 4.5.7) Telemarketing (Example 4.5.21) Detecting the HIV virus (Example 4.5.22) Computer file systems (Example 7.1.6). The new section reviews, which precede the exercises in every section, consist of exercises with answers in the back of the book. These exercises review the key concepts, definitions, theorems, techniques, and so on, of the section. Although intended for reviews of the sections, section reviews can also be used for placement and pretesting. Computer exercises

From the Back Cover

This best-selling book provides an accessible introduction to discrete mathematics through an algorithmic approach that focuses on problem- solving techniques. This edition has the techniques of proofs woven into the text as a running theme and each chapter has the problem-solving corner. The text provides complete coverage of: Logic and Proofs; Algorithms; Counting Methods and the Pigeonhole Principle; Recurrence Relations; Graph Theory; Trees; Network Models; Boolean Algebra and Combinatorial Circuits; Automata, Grammars, and Languages; Computational Geometry. For individuals interested in mastering introductory discrete mathematics.

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