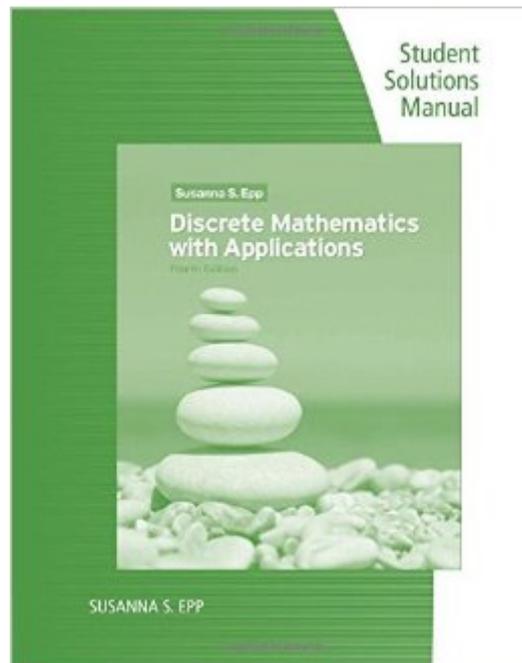# Discrete Mathematics With Applications: Student Solutions Manual

Synopsis

Susanna Epp's DISCRETE MATHEMATICS WITH APPLICATIONS, FOURTH EDITION provides a clear introduction to discrete mathematics. Renowned for her lucid, accessible prose, Epp explains complex, abstract concepts with clarity and precision. This book presents not only the major themes of discrete mathematics, but also the reasoning that underlies mathematical thought. Students develop the ability to think abstractly as they study the ideas of logic and proof. While learning about such concepts as logic circuits and computer addition, algorithm analysis, recursive thinking, computability, automata, cryptography, and combinatorics, students discover that the ideas of discrete mathematics underlie and are essential to the science and technology of the computer age. Overall, Epp's emphasis on reasoning provides students with a strong foundation for computer science and upper-level mathematics courses. --This text refers to the Hardcover edition.

Book Information

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Customer Reviews

I used an earlier edition of this textbook in a discrete mathematics class that was required for those of us with a non-CS background enrolled in a MSCS program at Virginia Tech, and I found this to be an excellent and complete book on the subject. If you find yourself enrolled in a class using this book, you can be sure of two things - your instructor knows how to select good textbooks and also it won't matter if your instructor is a good teacher since this book does all of the work for him/her.If you are enrolled in a class on discrete math and this textbook is not assigned, might I suggest you get a used copy of the previous edition. It is just as good as this current edition and used copies can easily be found dirt cheap. If you buy a copy of a previous edition the topics you'd be missing that are new to this edition would be expected value, conditional probability, Bayes' theorem, modular

arithmetic, Fermat's little theorem and the Chinese remainder theorem, and RSA cryptography.The author has included illuminating examples of all concepts throughout the textbook, defined all terms, and makes sure that each new concept introduced builds on previously explained material. Subjects covered include the logic of computation, including the predicate logic that is necessary for fully understanding artificial intelligence, methods of proof including the method of induction and also the terminology of sequences, number theory and combinatorics, O-notation and the calculation of the efficiency of algorithms, graph theory and discrete structures, and an introduction to concepts from the theory of computation. There are many exercises included, with the solutions to selected exercises in the back of the book.

I've taught discrete math from the 3rd Edition of this book at least 6 times, and struggled with several issues. (The textbook for our Discrete Math course is chosen by a committee in our department.) Much of a discrete math course involves looking closely at some very simple mathematics. Most of the mathematics is already known to a typical university freshman; what a set is, what a prime is, what an ordered pair is, etc. Of course they have had little rigor in these elementary topics, but still, they have the notions and vocabulary. The 3rd Edition pretended that sets, e.g., did not exist until one finally arrived at the chapter on sets. It's unnatural to lecture one's way through two chapters on logic and a chapter on techniques of proof, without being able to draw on simple examples from set theory. One gets tired quickly of examples of dogs and cats in highly artificial situations, and would like to say something about primes or the set of even integers.The 4th Edition corrects this problem by the addition of an introductory chapter which fixes the vocabulary and notation. This was a needed change. The 3rd Edition required considerable acrobatics in avoiding words like "is an element of" until Chapter 5 (Set Theory.) Really? I'm supposed to cover the proof technique of "division into cases" and I can't say "the set of integers of the form 4k+1?" So good change.Every semester, I get e-mails from my students asking if the previous edition of the text will suffice for my course. Usually, I say yes. In the case of my discrete math course, I'll have to say no. The modifications of this text are substantial. Besides the above, the old Chapter 8 (Recursion) is now incorporated into the new (much expanded) Chapter 5 (Sequences and Induction.

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