

<<离散数学>>

图书基本信息

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## 前言

This updated edition is intended for a one- or two-term introductory course in discrete mathematics, based on my experience in teaching this course over many years and requests from users of previous editions. 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, sections containing problem-solving tips, 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 website are available. In the early 1980s there were few textbooks appropriate for an introductory course in discrete mathematics. However, there was a need for a course that extended students' mathematical maturity and ability to deal with abstraction, which also included useful topics such as combinatorics, algorithms, and graphs. The original edition of this book ( 1984 ) addressed this need and significantly influenced the development of discrete mathematics courses. Subsequently, discrete mathematics courses were endorsed by many groups for several different audiences, including mathematics and computer science majors. A panel of the Mathematical Association of America ( MAA ) endorsed a year-long course in discrete mathematics. The Educational Activities Board of the Institute of Electrical and Electronics Engineers ( IEEE ) recommended a freshman discrete mathematics course. The Association for Computing Machinery ( ACM ) and IEEE accreditation guidelines mandated a discrete mathematics course. This edition, like its predecessors, includes topics such as algorithms, combinatorics, sets, functions, and mathematical induction endorsed by these groups. It also addresses understanding and constructing proofs and, generally, expanding mathematical maturity.

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### 内容概要

本书从算法分析和问题求解的角度，全面系统地介绍了离散数学的基础概念及相关知识，并在其前一版的基础上进行了修改与扩展。

书中通过大量实例，深入浅出地讲解了数理逻辑、组合算法、图论、布尔代数、网络模型、形式语言与自动机理论等与计算机科学密切相关的前沿课题，既着重于各部分内容之间的紧密联系，又深入探讨了相关的概念、理论、算法和实际应用。

本书内容叙述严谨、推演详尽，各章配有相当数量的习题与书后的提示和答案，为读者迅速掌握相关知识提供了有效的帮助。

本书既可作为计算机科学及计算数学等专业的本科生和研究生教材，也可作为工程技术人员和相关人员的参考书。

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