Combinatorics of finite sets, Ian Anderson (Ph. D.), Clarendon Press, 1987, 0198533675, 9780198533672, 250 pages. The combinatorial study of finite set systems is a lively area of research unified by the gradual discovery of structural insights and widely applicable proof techniques. This book is the first coherent and up-to-date account of the basic methods and results of this study. Much of the material in the book concerns subsets of a set, but chapters also cover more general partially ordered sets. For example, the Clements-Lindstrom extension of the Kruskal-Katona theorem to multisets is discussed, as is the Greene-Kleitman result concerning k-saturated chain partitions of general partially ordered sets. Connections with Dilworth's theorem, the marriage problem, and probability are presented. Each chapter ends with a collection of exercises for which outline solutions are provided, and there is an extensive bibliography. The work is important for postgraduate students and researchers in discrete mathematics and related subjects.

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Sperner Theory , Konrad Engel, Jan 28, 1997, Mathematics, 417 pages. Emphasises the powerful methods arising from the fusion of combinatorial techniques with programming, linear algebra, and probability theory..


Combinatorial Set Theory , , Jan 1, 1977, Combinatorial set theory, 208 pages. This work presents the most important combinatorial ideas in partition calculus and discusses ordinary partition relations for cardinals without the assumption of the ....

Classic Set Theory For Guided Independent Study, Derek Goldrei, Jan 1, 1996, Mathematics, 287 pages. Designed for undergraduate students of set theory, this text includes the definition of the real numbers in terms of rational numbers and ultimately in terms of natural numbers ....


Higher combinatorics proceedings of the NATO Advanced Study Institute held in Berlin (West Germany), September 1-10, 1976, Martin Aigner, 1977, Mathematics, 256 pages.
Inferring Phylogenies, Joseph Felsenstein, 2004, 664 pages. Phylogenies, or evolutionary trees, are the basic structures necessary to think about and analyze differences between species. Statistical, computational, and algorithmic work ....


Coherent treatment provides comprehensive view of basic methods and results of the combinatorial study of finite set systems. The Clements-Lindstrom extension of the Kruskal-Katona theorem to multisets is explored, as is the Greene-Kleitman result concerning k-saturated chain partitions of general partially ordered sets. Connections with Dilworth's theorem, the marriage problem, and probability are also discussed.

When one thinks of combinatorics of finite sets, he or she might first think of codes and designs. But this book introduced me to an area of combinatorics which I knew very little about, namely extremal set problems and their solutions which fall under famous Theorems by famous mathematicians: Erdos-Ko-Rado, Sperner, and Kruskal-Katona to name a few. I found these topics fascinating and fun to think about, which is in large part due to the author's coherent style, organization, explanation, and expertise of the subject-matter. Moreover, the author provided solutions to *every* one of the 150+ problems!!! How many math books can boast such a claim? Aside from may be a rough presentation of Lemma 4.3.2 the rest of the book is a masterpiece which I hope will gain more recognition within the next twenty years.

I highly recommend this book to both mathematicians and computer scientists. Although the book has very few "algorithms" in it, the thinking and reasoning about discrete structures (e.g. families of finite sets and multisets) will do wonders in developing the mind of a computer scientist, whether advanced or undergraduate. Yet it is quite sad that many cs departments (and math for that matter) invest little if any curriculum in discrete mathematics. Hopely this will change at least to the point where the cs major will take two or three semesters of discrete math instead of two or three of calculus. For, as this book demonstrates, calculus is not a prerequisite for engaging one's mind in some quite fascinating mathematical problems related to finite sets.

Finally, it should be noted that Bela Bollobas also has an interesting book titled "Combinatorics: Set Systems, etc...." which significantly intersects with this book, but not to the degree where the reader should think they are interchangeable. I recommend both, and to read Anderson's book first; as I believe this book lays a better foundation than the latter.

This book provides excellent coverage of sperners theorem including multiple proofs ,like the original one by sperner and more concise proofs using closely related concepts. The various proofs of sperners theorem provides a firm understanding of its connections with many other fundamental topics in finite combinatorial mathematics.Great book for those that have a good grasp on algebraic concepts.

Ajrf antichain of subsets antichain s& basic elements binomial coefficients blocks chain partition collection of subsets consider consists contain contradicting Corollary corresponding cyclic permutation Daykin define denote the number denote the set Dilworth's theorem disjoint distributive lattice downset EKR theorem elements at level example Exercise exists fc-sets fc-union fc-vectors following theorem given Greene and Kleitman Griggs induction hypothesis integer intersecting antichain intersecting family Kruskal-Katona theorem l)-sets l)-subsets lattice least Lemma Let jrf Let s& lexicographic order Littlewood-Offord problem log concave LYM inequality marriage theorem
maximal elements maximum maximum-sized antichain members of s& multisets n-set n-tuples non-negative normalized matching property Note number of sets obtain pairs permutation poset of divisors proof of Theorem ranked poset replace result S(kl sequence set of subsets sets in s& Sperner's theorem squashed antichain squashed order symmetric chain decomposition union vectors

Page ix - ... said the Buddha, is a sin. The American people have committed the sin of wilful ignorance against the people of Palestine. Thus, it is for America that this book has been written, and to the Americans, my people, it is dedicated in the hope that they may discover the truth.

ACKNOWLEDGEMENTS Many people have helped and encouraged me in the writing of this book and to them all I am deeply indebted. I am particularly grateful to Walid Khalidi who first suggested that I undertake this study for publication....â€Ž

The combinatorial study of finite set systems is a lively area of research unified by the gradual discovery of structural insights and widely applicable proof techniques. This book is the first coherent and up-to-date account of the basic methods and results of this study. Much of the material in the book concerns subsets of a set, but chapters also cover more general partially ordered sets. For example, the Clements-Lindstrom extension of the Kruskal-Katona theorem to multisets is discussed, as is the Greene-Kleitman result concerning k-saturated chain partitions of general partially ordered sets. Connections with Dilworth's theorem, the marriage problem, and probability are presented. Each chapter ends with a collection of exercises for which outline solutions are provided, and there is an extensive bibliography. The work is important for postgraduate students and researchers in discrete mathematics and related subjects.

Anderson (U. of Glasgow) explores collections of subsets of a finite set where the collection is described in terms of intersection, union, or inclusive conditions. He also considers more general partially ordered sets. The 1989 edition, published by University Press, Oxford, has been slightly corrected. Annotation c. Book News, Inc., Portland, OR