

1. Record Nr.	UNINA9910143188103321
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Titolo	The probabilistic method // Noga Alon, Joel H. Spencer
Pubbl/distr/stampa	New York : , : Interscience Publishers, , [2000] ©2000
ISBN	1-280-27276-7 9786610272761 0-470-31228-9 0-471-72215-4
Edizione	[Second edition.]
Descrizione fisica	1 online resource (322 p.)
Collana	Wiley-Interscience series in discrete mathematics and optimization
Disciplina	511.6
Soggetti	Combinatorial analysis Probabilities
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"A Wiley-Interscience publication."
Nota di bibliografia	Includes bibliographical references (p. 283-293) and indexes.
Nota di contenuto	Dedication; Preface; Acknowledgments; Contents; Part I: METHODS; 1 The Basic Method; 1.1 The Probabilistic Method; 1.2 Graph Theory; 1.3 Combinatorics; 1.4 Combinatorial Number Theory; 1.5 Disjoint Pairs; 1.6 Exercises; The Probabilistic Lens: The Erdos-Ko-Rado Theorem; 2 Linearity of Expectation; 2.1 Basics; 2.2 Splitting Graphs; 2.3 Two Quickies; 2.4 Balancing Vectors; 2.5 Unbalancing Lights; 2.6 Without Coin Flips; 2.7 Exercises; The Probabilistic Lens: Bregman's Theorem; 3 Alterations; 3.1 Ramsey Numbers; 3.2 Independent Sets; 3.3 Combinatorial Geometry; 3.4 Packing; 3.5 Recoloring 3.6 Continuous Time3.7 Exercises; The Probabilistic Lens: High Girth and High Chromatic Number; 4 The Second Moment; 4.1 Basics; 4.2 Number Theory; 4.3 More Basics; 4.4 Random Graphs; 4.5 Clique Number; 4.6 Distinct Sums; 4.7 The Rodl Nibble; 4.8 Exercises; The Probabilistic Lens: Hamiltonian Paths; 5 The Local Lemma; 5.1 The Lemma; 5.2 Property B and Multicolored Sets of Real Numbers; 5.3 Lower Bounds for Ramsey Numbers; 5.4 A Geometric Result; 5.5 The Linear Arboricity of Graphs; 5.6 Latin Transversals; 5.7 The Algorithmic Aspect; 5.8 Exercises; The Probabilistic Lens: Directed Cycles 6 Correlation Inequalities6.1 The Four Functions Theorem of Ahlswede

and Daykin; 6.2 The FKG Inequality; 6.3 Monotone Properties; 6.4 Linear Extensions of Partially Ordered Sets; 6.5 Exercises; The Probabilistic Lens: Turan's Theorem; 7 Martingales and Tight Concentration; 7.1 Definitions; 7.2 Large Deviations; 7.3 Chromatic Number; 7.4 Two General Settings; 7.5 Four Illustrations; 7.6 Talagrand's Inequality; 7.7 Applications of Talagrand's Inequality; 7.8 Kim-Vu Polynomial Concentration; 7.9 Exercises; The Probabilistic Lens: Weierstrass Approximation Theorem; 8 The Poisson Paradigm 8.1 The Janson Inequalities 8.2 The Proofs; 8.3 Brun's Sieve; 8.4 Large Deviations; 8.5 Counting Extensions; 8.6 Counting Representations; 8.7 Further Inequalities; 8.8 Exercises; The Probabilistic Lens: Local Coloring; 9 Pseudorandomness; 9.1 The Quadratic Residue Tournaments; 9.2 Eigenvalues and Expanders; 9.3 Quasi Random Graphs; 9.4 Exercises; The Probabilistic Lens: Random Walks; Part II: TOPICS; 10 Random Graphs; 10.1 Subgraphs; 10.2 Clique Number; 10.3 Chromatic Number; 10.4 Branching Processes; 10.5 The Giant Component; 10.6 Inside the Phase Transition; 10.7 Zero-One Laws 10.8 Exercises The Probabilistic Lens: Counting Subgraphs; 11 Circuit Complexity; 11.1 Preliminaries; 11.2 Random Restrictions and Bounded-Depth Circuits; 11.3 More on Bounded-Depth Circuits; 11.4 Monotone Circuits; 11.5 Formulae; 11.6 Exercises; The Probabilistic Lens: Maximal Antichains; 12 Discrepancy; 12.1 Basics; 12.2 Six Standard Deviations Suffice; 12.3 Linear and Hereditary Discrepancy; 12.4 Lower Bounds; 12.5 The Beck-Fiala Theorem; 12.6 Exercises; The Probabilistic Lens: Unbalancing Lights; 13 Geometry; 13.1 The Greatest Angle among Points in Euclidean Spaces 13.2 Empty Triangles Determined by Points in the Plane

Sommario/riassunto

The leading reference on probabilistic methods in combinatorics-now expanded and updated When it was first published in 1991, The Probabilistic Method became instantly the standard reference on one of the most powerful and widely used tools in combinatorics. Still without competition nearly a decade later, this new edition brings you up to speed on recent developments, while adding useful exercises and over 30% new material. It continues to emphasize the basic elements of the methodology, discussing in a remarkably clear and informal style both algorithmic and classical methods as well
