

1. Record Nr.	UNINA9910789897403321
Autore	Watkins John J
Titolo	Across the board [[electronic resource] ] : the mathematics of chessboard problems // John J. Watkins
Pubbl/distr/stampa	Princeton, : Princeton University Press, c2004
ISBN	1-283-25606-1 0-691-11503-6 9786613256065 1-4008-4092-9
Edizione	[Course Book]
Descrizione fisica	1 online resource (270 p.)
Collana	Princeton Puzzlers
Disciplina	793.74
Soggetti	Mathematical recreations Chess
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (p. 247-249) and index.
Nota di contenuto	Frontmatter -- Contents -- Preface -- Chapter One. Introduction -- Chapter Two. Knight's Tours -- Chapter Three. The Knight's Tour Problem -- Chapter Four. Magic Squares -- Chapter Five. The Torus and the Cylinder -- Chapter Six. The Klein Bottle and Other Variations -- Chapter Seven. Domination -- Chapter Eight. Queens Domination -- Chapter Nine. Domination on Other Surfaces -- Chapter Ten. Independence -- Chapter Eleven. Other Surfaces, Other Variations -- Chapter Twelve. Eulerian Squares -- Chapter Thirteen. Polyominoes -- References -- Index
Sommario/riassunto	Across the Board is the definitive work on chessboard problems. It is not simply about chess but the chessboard itself--that simple grid of squares so common to games around the world. And, more importantly, the fascinating mathematics behind it. From the Knight's Tour Problem and Queens Domination to their many variations, John Watkins surveys all the well-known problems in this surprisingly fertile area of recreational mathematics. Can a knight follow a path that covers every square once, ending on the starting square? How many queens are needed so that every square is targeted or occupied by one of the queens? Each main topic is treated in depth from its historical

conception through to its status today. Many beautiful solutions have emerged for basic chessboard problems since mathematicians first began working on them in earnest over three centuries ago, but such problems, including those involving polyominoes, have now been extended to three-dimensional chessboards and even chessboards on unusual surfaces such as toruses (the equivalent of playing chess on a doughnut) and cylinders. Using the highly visual language of graph theory, Watkins gently guides the reader to the forefront of current research in mathematics. By solving some of the many exercises sprinkled throughout, the reader can share fully in the excitement of discovery. Showing that chess puzzles are the starting point for important mathematical ideas that have resonated for centuries, *Across the Board* will captivate students and instructors, mathematicians, chess enthusiasts, and puzzle devotees.

---