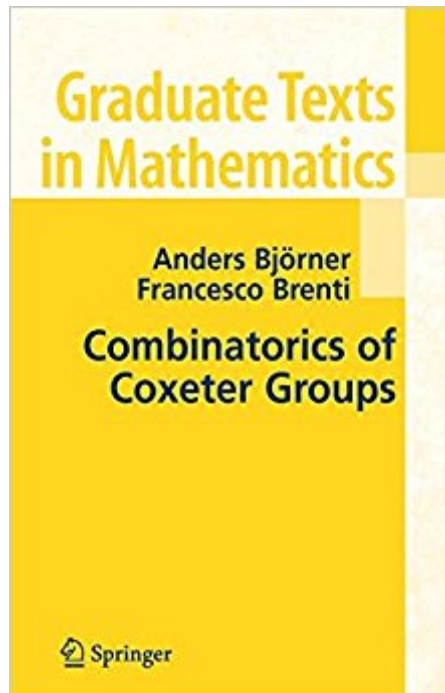




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# Combinatorics Of Coxeter Groups (Graduate Texts In Mathematics)



## Synopsis

Includes a rich variety of exercises to accompany the exposition of Coxeter groups. Coxeter groups have already been explicated from algebraic and geometric perspectives, but this book will be presenting the combinatorial aspects of Coxeter groups.

## Book Information

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## Customer Reviews

From the reviews: "Coxeter groups are groups which are generated by involutions.  $\tilde{A}_n$  are written in a very expository manner, and serve as a very nice introduction to the subject which a graduate student would be able to follow.  $\tilde{A}_n$  chapters are self-contained, and the book has several appendices to help the reader who does not have the full background." (Darren Glass, MathDL, May, 2005) "The book under review presents the combinatorial aspects in the theory of Coxeter groups.  $\tilde{A}_n$  Plenty of exercises are provided in each chapter, ranging from easier ones to more difficult ones and open problems.  $\tilde{A}_n$  More than 500 references related to the above topics are attached at the end of the book. Thus the book is suitable both as a graduate textbook (particularly Part I) and as a research monograph (particularly Part II) for the combinatorics of Coxeter groups." (Jian-yi Shi, Mathematical Reviews, Issue 2006 d) "This is the first one to focus mainly on the combinatorial aspects of Coxeter groups.  $\tilde{A}_n$  A wide variety of exercises, ranging from easy to quite difficult are also included. The book will serve graduate students as well as researchers." (L'Enseignement Mathématique, Vol. 51 (3-4), 2005) "The general theory of

Coxeter groups naturally involves combinatorics, geometry and algebra. The aim of the book under review is to present the core combinatorial aspects of the theory of Coxeter groups. Endnotes to each chapter provide historical connections and for related materials, including the algebraic and geometric aspects of the topics. Four appendices and a comprehensive bibliography containing 559 entries complete this book to a useful research monograph. The book is also well suited to serve as a graduate textbook." (Herman J. Servatius, Zentralblatt MATH, Vol. 1110 (12), 2007)

Coxeter groups are of central importance in several areas of algebra, geometry, and combinatorics. This is a clear and rigorous exposition focuses on the combinatorial aspects of Coxeter groups, such as reduced expressions, partial order of group elements, enumeration, associated graphs and combinatorial cell complexes, and connections with combinatorial representation theory. While Coxeter groups have already been expounded from algebraic and geometric perspectives, this text is the first one to focus mainly on the combinatorial aspects of Coxeter groups. The first part of the book provides a self-contained introduction to combinatorial Coxeter group theory. The emphasis here is on the combinatorics of reduced decompositions, Bruhat order, weak order, and some aspects of root systems. The second part deals with more advanced topics, such as Kazhdan-Lusztig polynomials and representations, enumeration, and combinatorial descriptions of the classical finite and affine Weyl groups. A wide variety of exercises, ranging from easy to quite difficult are also included. The book will serve graduate students as well as researchers. Anders Björner is Professor of Mathematics at the Royal Institute of Technology in Stockholm, Sweden. Francesco Brenti is Professor of Mathematics at the University of Rome.

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