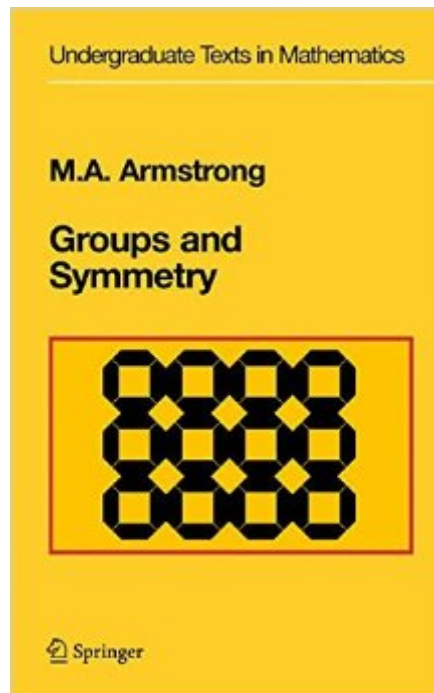


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# Groups And Symmetry (Undergraduate Texts In Mathematics)



## Synopsis

This is a gentle introduction to the vocabulary and many of the highlights of elementary group theory. Written in an informal style, the material is divided into short sections, each of which deals with an important result or a new idea. Includes more than 300 exercises and approximately 60 illustrations.

## Book Information

Series: Undergraduate Texts in Mathematics

Hardcover: 187 pages

Publisher: Springer; 1st ed. 1988. Corr. 2nd printing 1997 edition (February 27, 1997)

Language: English

ISBN-10: 0387966757

ISBN-13: 978-0387966755

Product Dimensions: 6.1 x 0.5 x 9.2 inches

Shipping Weight: 1 pounds (View shipping rates and policies)

Average Customer Review: 3.9 out of 5 stars [See all reviews](#) (11 customer reviews)

Best Sellers Rank: #926,339 in Books (See Top 100 in Books) #128 in [Books > Science & Math > Mathematics > Pure Mathematics > Group Theory](#) #154 in [Books > Science & Math > Mathematics > Pure Mathematics > Algebra > Abstract](#) #447 in [Books > Science & Math > Mathematics > Applied > Differential Equations](#)

## Customer Reviews

This was the textbook for my first course in abstract algebra and the first "yellow book" that I read. I found it an excellent book: rather than starting with axioms and dryly deriving everything, it gets one to contemplate the meaning and motivation behind the axioms. This book will encourage you to play around with mathematics on paper and in your mind, helping you to get a concrete feel for a subject that many people view as painfully abstract. The prose is clear and well-written: there is just the right amount of discussion to elucidate necessary points, while allowing the book to remain fairly compact. Exercises are fun but difficult and many require genuine creativity. I also really like the choice of topics: although this book is introductory (with respect to abstract algebra, it presupposes some knowledge of linear algebra), because it focuses only on groups (as opposed to also trying to handle rings & fields) it is able to get into some more advanced and very interesting topics and applications in later chapters. This book will give you a lot more than can be covered in a single semester undergrad course, and while it doesn't exactly make the best reference text, it will be a

book you will want to keep coming back to, if only to study some of the more advanced material. There are differing perspectives on the teaching of abstract algebra: some people like to start with group theory exclusively in a first course, and treat rings, fields, and other structures in later courses. Other people recommend more integrated approaches, or approaches starting from rings. While I can't say that either approach is better, I can say that this book takes the first approach, focusing exclusively on groups and assuming little prior background..and for a first course in abstract algebra, this book is an excellent choice.

I'm using this book for a first course in Group theory and it makes a good introductory text. Topics are neatly arranged and follow an order that makes reading easy. But it is definitely not a text for any sort of rigorous proofs. Rather, it focuses on learning from examples.

Please note that the other reviews here are obviously for some other book. This is not an advanced text on bifurcations and stability. It is an introductory book on group theory. I have been using this book for self study. It is well suited to this purpose. The book uses symmetry to unify and motivate the study of groups. The discussion of the symmetry groups of Platonic solids is both enjoyable in itself and useful for visualizing groups. The chapters are very short. The exercises are well suited to gaining insight into the material.

I used this book for my introductory group theory class (Math 109 at Stanford). The book is alright, but the entire thing is written in the style of a proof. Theorems are introduced, then promptly proven. As a result, the exercises are often dramatically more difficult than material covered in the corresponding chapters. Another result of this style is extreme concision. Be prepared to read every sentence twice. This is a good book, but be comfortable with proofs and discrete math before attempting to read it.

It begins with nonisomorphic groups of order 12, but in a totally relaxed manner as an investigation into symmetries of different types of objects. Then you see subgroups and the center, etc in a very concrete way. This is a fun way to approach group algebra.

Some authors like to expound, some like to dazzle and some like to teach. Armstrong falls easily into the latter category. If you are looking for a clear and motivating book to start learning about group theory, you will not find a better book. It is a short book but covers the essentials. The range

of topics covers the necessary ground for an introduction: Sylow's theorems, free groups, matrix groups, presentations are all there with a strong geometric content. He even proves the Nielsen-Schrier Theorem in an accessible manner. All you really need to know is some basic undergraduate algebra to understand this little gem and it will certainly give you the foundation to move deeper. Highly recommended for a starting point.

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