

# Characters of Finite Groups: A Comprehensive Guide for Mathematicians



The study of finite groups is a fundamental area of mathematics with applications in various branches, including algebra, number theory, and coding theory. Characters of finite groups play a pivotal role in this study,

providing valuable insights into the structure and properties of these groups. This comprehensive article delves into the captivating world of characters of finite groups, exploring their significance and applications.



## Yakov G. Berkovich; Lev S. Kazarin; Emmanuel M. Zhmud': Characters of Finite Groups. Volume 1 (De Gruyter Expositions in Mathematics Book 63)

by Pavel Grinfeld

★★★★☆ 4.6 out of 5

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Text-to-Speech: Enabled

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### What are Characters of Finite Groups?

A character of a finite group is a function from the group to the complex numbers that satisfies certain properties, such as linearity and orthogonality. Intuitively, a character captures the behavior of a group element when it acts on a complex vector space. Characters encode crucial information about the group's structure, such as the number of conjugacy classes and the existence of subgroups.

### Importance and Applications of Characters

Characters of finite groups have far-reaching applications in various areas of mathematics:

- **Group Theory:** Characters aid in classifying finite groups and understanding their internal structure.
- **Number Theory:** They play a vital role in studying cyclotomic fields and solving Diophantine equations.
- **Coding Theory:** Characters are instrumental in constructing error-correcting codes, ensuring reliable data transmission.

## **Characters of Finite Groups Volume: An Authoritative Reference**

The book "Characters of Finite Groups," authored by renowned mathematicians Walter Feit and George Glauberman, serves as a comprehensive reference for researchers and students alike. Published by De Gruyter Expositions in Mathematics, this volume offers an in-depth exploration of the theory of characters of finite groups.

### **Key Features of the Book**

- **Comprehensive Coverage:** Provides a comprehensive treatment of the subject, covering essential topics such as the representation theory of finite groups, character theory, and applications.
- **Clear and Accessible:** Presents complex concepts in a clear and accessible manner, making it suitable for both students and experienced mathematicians.
- **Expert Insights:** Written by leading experts in the field, offering invaluable insights and perspectives on the latest advancements in character theory.

### **Target Audience**

"Characters of Finite Groups" is an indispensable resource for:

- **Graduate Students:** Provides a solid foundation for advanced studies in group theory and number theory.
- **Researchers:** Offers a comprehensive reference for ongoing research in character theory and related fields.
- **Practitioners:** Serves as a valuable tool for professionals using character theory in coding theory or other applications.

## Reviews and Testimonials

"Characters of Finite Groups" has received widespread acclaim from the mathematical community:



***" "This book provides a comprehensive and up-to-date account of the theory of characters of finite groups. It is an indispensable resource for anyone interested in this subject." - John Thompson, Nobel Laureate"***



***" "Feit and Glauberman have written a masterpiece that will be the standard reference on character theory for many years to come." - Roger Howe, Yale University"***

"Characters of Finite Groups" is an essential addition to any mathematician's library. Its comprehensive coverage, clear exposition, and expert insights make it an invaluable resource for students, researchers,

and practitioners alike. Whether you are a seasoned professional or just starting your journey in the world of finite groups, this book will empower you with a deep understanding of the fascinating subject of characters.

**Free Download your copy today and unlock the secrets of finite group theory!**



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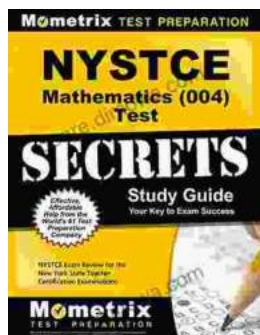
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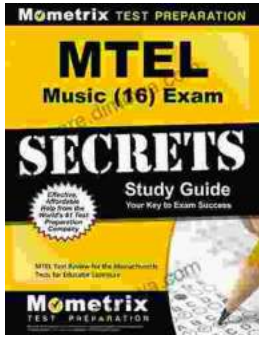
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