

GROUP THEORY

"This book is all about symmetry and written in a style that is as pleasing to the mind as symmetry is to the eyes. I commend the book whole heartedly."

Prof. Dinesh Singh (Padma Shri)
Chancellor, K.R. Mangalam University
Formerly Vice Chancellor, University of Delhi

About the Book

Based on the classroom lectures, this textbook is primarily designed for the senior undergraduate/graduate students of Mathematics. The book covers the senior undergraduate mathematics course, meeting the curriculum requirements of most universities. Different concepts have been explained in a very lucid language with the help of solved examples that would help the students to understand the subject matter without further reference. The subject matter has been presented in an somewhat informal manner assuming the language and tone of a classroom lecture putting the readers at ease.

This book could be used for self study as well as for a course text, and so full details of almost all proofs are included along with hundreds of solved problems, to give ample guidance in understanding abstract notions. The solved problems are interspersed throughout the text at places where they naturally arise, making the book ideal for self-study. The proofs are precise and complete, backed up by chapter end problems, with just the right level of difficulty.

The book starts with definition and examples of Groups. It then goes on to cover properties of groups, subgroups, Cyclic groups, Permutation groups, Cosets and Lagrange's Theorem, Normal subgroups and Factor Groups, Group Homomorphisms and Isomorphisms, Automorphisms, Group Actions, Sylow Theorems and Direct Products.

Contents

1. Group 2. Finite Groups and Subgroups 3. Cyclic Groups 4. Permutation Groups
5. Cosets and Lagrange's Theorem 6. Normal Subgroups and Factor Groups 7. Group Homomorphism and Isomorphism 8. Automorphisms 9. Direct Products 10. Group Actions
11. Sylow Theorems

About the Authors

Dr. Dinesh Khattar, an erstwhile Principal (2015 to 2018) is currently a Professor at the Department of Mathematics, Kirori Mal College, University of Delhi. He topped (Gold Medalist) both in his B.Sc and M.Sc exams. He received Dr. S. Radhakrishnan Memorial National Teacher's Award 2015 for his contribution in the field of education. He was also awarded the prestigious Commonwealth Scholarship for pursuing research in UK. He is actively involved in research and has presented papers in prestigious international conferences across the globe. Dr. Khattar has been a member of curriculum development committee for B.Sc. and M.Sc. programs at various universities including the University of Delhi. He is also an author of many books on Mathematics.

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