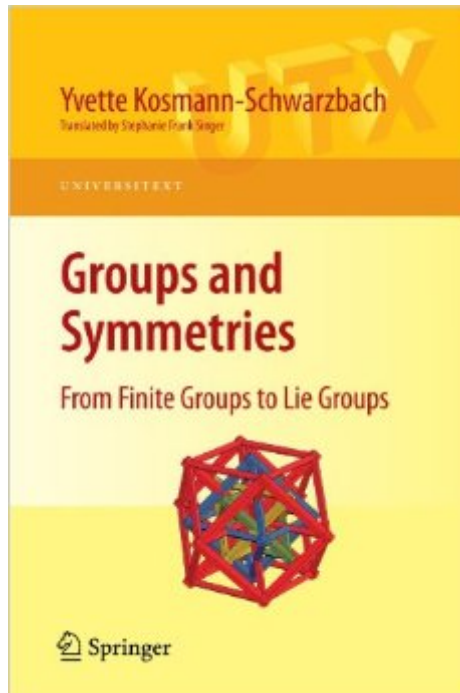


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Groups And Symmetries: From Finite Groups To Lie Groups (Universitext)



Synopsis

- Combines material from many areas of mathematics, including algebra, geometry, and analysis, so students see connections between these areas - Applies material to physics so students appreciate the applications of abstract mathematics - Assumes only linear algebra and calculus, making an advanced subject accessible to undergraduates - Includes 142 exercises, many with hints or complete solutions, so text may be used in the classroom or for self study

Book Information

Series: Universitext (Book 261)

Paperback: 196 pages

Publisher: Springer; 2010 edition (April 2, 2010)

Language: English

ISBN-10: 0387788654

ISBN-13: 978-0387788654

Product Dimensions: 6 x 0.5 x 9 inches

Shipping Weight: 13.4 ounces (View shipping rates and policies)

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be forewarned that this very concise book is not an easy read, except for someone with a very solid background in abstract and advanced linear algebra. It deserves 5 stars for the lucidity of the mathematical presentation, but I deducted 1 star as a heads up because despite its claim to be aimed at advanced undergraduates / beginning graduates in math *or* physics, I think the book would be tough going for many readers who fit that description. As a math-degree-less autodidact, I found the book very challenging in places. To be fair, I found Chapter 2, Representations of Finite Groups, the most difficult chapter, and this no doubt colored my perception of the book as a whole. So if you can power through that chapter, you might well find the rest fairly smooth sailing. One major plus is that there are a large number of problems and complete solutions (pp 129 - 183). For me, the most outstanding feature -- and the reason I read the book - is that it explains in very clear, mathematically rigorous terms the basic group-theoretic math behind the standard model of

elementary particle physics. If you make it through to the end, then you'll come to understand in a mere 100 pages, what, mathematically speaking, the Eightfold Way and quarks really are! This is quite an accomplishment. I have not found any other introductory book that does this except Frankel's *The Geometry of Physics: An Introduction*, Second Edition, which, although a superb book for self-study, is a very long read.

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