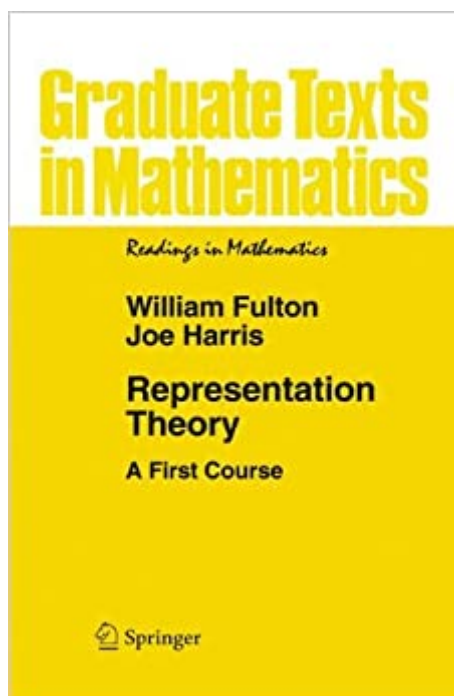The book was found

Representation Theory: A First Course (Graduate Texts In Mathematics)

Synopsis

The primary goal of these lectures is to introduce a beginner to the finiteÂ- dimensional representations of Lie groups and Lie algebras. Since this goal is shared by quite a few other books, we should explain in this Preface how our approach differs, although the potential reader can probably see this better by a quick browse through the book. Representation theory is simple to define: it is the study of the ways in which a given group may act on vector spaces. It is almost certainly unique, however, among such clearly delineated subjects, in the breadth of its interest to mathematicians. This is not surprising: group actions are ubiquitous in 20th century mathematics, and where the object on which a group acts is not a vector space, we have learned to replace it by one that is . As a consequence, many mathematicians other than specialists in the field come in contact with the subject in various ways. It is for such people that this text is designed. To put it another way, we intend this as a book for beginners to learn from and not as a reference. This idea essentially determines the choice of material covered here. As simple as is the definition of representation theory given above, it fragments considerably when we try to get more specific.

Book Information

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Customer Reviews

"...displays a novel approach to its subject matter... genuinely informative... skillfully worked and interspersed with novel observations" -- BULLETIN OF THE IRISH MATHEMATICAL SOCIETY"...this textbook is an outstanding example of didactic mastery, and it serves the purpose

of the series [Readings in Mathematics] in a perfect manner." -- ZENTRALBLATT MATH

I first read this book when I was transitioning from undergraduate to graduate school. It is example-driven and the general theory is difficult to find, but I think when coupled with a more theory-driven book like Humphreys' _Introduction to Lie Algebras and Representation Theory_ it can make a very nice companion. In fact, reading these two books is how I began to learn about representation theory of semisimple complex Lie algebras / groups.Some of the material (like Weyl's construction for irreducible representations of the orthogonal and symplectic groups) in Fulton-Harris is not readily found in other introductory books so I appreciated that it gave me exposure to topics that might otherwise only be found in research papers. Even after finishing my PhD (which did use the material in this book), I continue to find myself using this book as a reference.

This is the book that seems to have everything. Written by two of the masters with such ambition as to cover representations of finite groups, representations of Lie algebras, together with countless detailed examples (and many pictures to boot!), what could go wrong?Within the first few pages, though, you should begin to feel that something is amiss. Proofs and arguments are almost always incomplete. Details are never provided under any circumstances. Example computations are beautiful and swift, but usually rely on an understanding that is deeper than actually presented in the text, using lemmas not present anywhere in the entire volume. They are the sorts of computations which, if included on a homework assignment and graded by someone well-versed in the subject, would get at most half the marks with several copies of the comment "yes, but you need to explain why." Nearly half the subject, you will realize after close analysis, is just left to the reader. The authors also supplement the instruction with an annoying delusion that the entire book is trivial; they will repeatedly tell you that everything here is trivial, easy, or immediate, but they will never acknowledge anything as being hard. Not only is this of course wrong, but it's disrespectful to their brilliant predecessors who toiled day and night to bring to them these apparently trivial truths.This is an exceptionally dangerous book to learn from. It's the sort of book that makes you think you understand the details when in fact you have no idea what you're talking about. It makes you think something's trivial or simple when it actually requires some clever thinking. Given the book's length, it is clear that the authors were simply too ambitious. One (or, evidently, two!) cannot cover this range of material in appropriate detail and with due care to the reader without violating all

reasonable restrictions on how fat and bloated any single volume should permit itself to become before giving into gluttonous sin.This book isn't all bad, though. It makes a decent reference due to its ambition. There are some nice pictures. And the methods of computation really are nice--just don't think you understand them if you haven't written pages of extra notes filling in the gaps.Vinberg's Linear Representations of Groups is a much superior treatment of the basics of the subject. After using Fulton and Harris's book, you may be surprised to see how much more space it takes Vinberb to cover what Fulton and Harris annihilate in a few pages or even paragraphs here. And then you will realize how frail and weak the treatment of individual topics actually is in the present book.

Great book. We are doing a reading group on it.

I'm using this book as the text for one graduate course representation theory. This book is written in a modern fashion. Very good to take a survey of modern treatment of group representation. Futon and Harris use notations from category theory. At some place, they also use vector bundle. They assume readers have been familiar with those things. Means the author assume a high start point. Read Michael Artin's algebra as well as S. Lang's Algebra before you start this one would help a lot.The book I received is very new - newer than I expected.

This book is an excellent introduction to representation theory of finite groups, Lie groups and Lie algebras. It is easy to read, not too dense, contains many exercises, and spends a lot of time on examples before exposing the general theory. Probably my favorite intro to repn theory book.

Only a PhD could love this book

The book is greet as a textbook. It maybe a little difficult for one to read himself.Maybe humpery's pay more attention to thoery of lie algebra. Two books maybe combined.

The authors seem pretty good on Young's diagrams,but mostly as far as Cartan algebra, Lie algebraand representation theory they are pretty clueless.I spent way too much money buying this bookfor it to be this useless as a self-teaching tool.Since this is my 4th representation theory bookI have to say that these guys makeJean-Pierre Serre's bookÂ Linear Representations of Finite Groups (Graduate Texts in Mathematics) (v. 42)look betterand makes a hero out of James E.

Humphreys Introduction to Lie Algebras and Representation Theory (Graduate Texts in Mathematics).If you are buying a book by Fulton stick to algebraic geometryor intersection theory, maybe?

Representation Theory: A First Course (Graduate Texts in Mathematics) Introduction to Lie Algebras and Representation Theory (Graduate Texts in Mathematics) (v. 9) An Introduction to the Representation Theory of Groups (Graduate Studies in Mathematics) A Course in the Theory of Groups (Graduate Texts in Mathematics, Vol. 80) A Course in Number Theory and Cryptography (Graduate Texts in Mathematics) Algebraic Geometry: A First Course (Graduate Texts in Mathematics) (v. 133) The Mathematical Theory of Symmetry in Solids: Representation Theory for Point Groups and Space Groups (Oxford Classic Texts in the Physical Sciences) Proofs and Fundamentals: A First Course in Abstract Mathematics (Undergraduate Texts in Mathematics) Graph Theory (Graduate Texts in Mathematics) Algebraic Graph Theory (Graduate Texts in Mathematics) Matroid Theory (Oxford Graduate Texts in Mathematics) Matrices: Theory and Applications (Graduate Texts in Mathematics) Deformation Theory (Graduate Texts in Mathematics) An Introduction to Ergodic Theory (Graduate Texts in Mathematics) Number Theory: Volume I: Tools and Diophantine Equations (Graduate Texts in Mathematics) Quantum Theory for Mathematicians (Graduate Texts in Mathematics) An Introduction to the Theory of Groups (Graduate Texts in Mathematics) An Introduction to Banach Space Theory (Graduate Texts in Mathematics) Young Tableaux: With Applications to Representation Theory and Geometry (London Mathematical Society Student Texts) Modern Geometry â • Methods and Applications: Part I: The Geometry of Surfaces, Transformation Groups, and Fields (Graduate Texts in Mathematics) (Pt. 1)