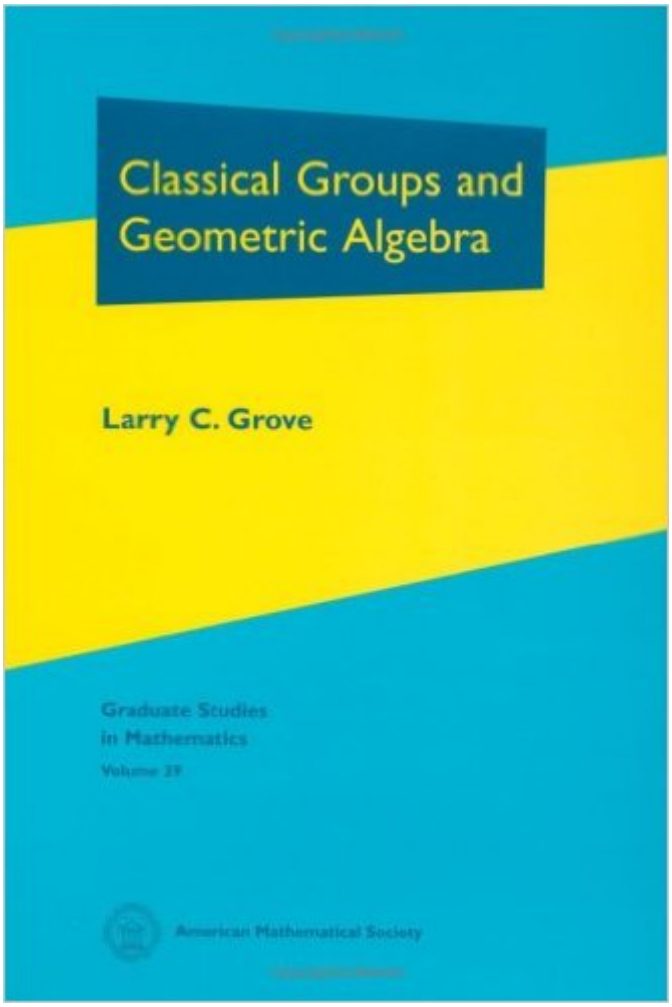
Classical Groups And Geometric Algebra (Graduate Studies In Mathematics)



Synopsis

``Classical groups'', named so by Hermann Weyl, are groups of matrices or quotients of matrix groups by small normal subgroups. Thus the story begins, as Weyl suggested, with ``Her All-embracing Majesty'', the general linear group $GL_n(V)$ of all invertible linear transformations of a vector space V over a field F. All further groups discussed are either subgroups of $GL_n(V)$ or closely related quotient groups. Most of the classical groups consist of invertible linear transformations that respect a bilinear form having some geometric significance, e.g., a quadratic form, a symplectic form, etc. Accordingly, the author develops the required geometric notions, albeit from an algebraic point of view, as the end results should apply to vector spaces over more-or-less arbitrary fields, finite or infinite. The classical groups have proved to be important in a wide variety of venues, ranging from physics to geometry and far beyond. In recent years, they have played a prominent role in the classification of the finite simple groups. This text provides a single source for the basic facts about the classical groups and also includes the required geometrical background information from the first principles. It is intended for graduate students who have completed standard courses in linear algebra and abstract algebra. The author, L. C. Grove, is a well-known expert who has published extensively in the subject area.

Book Information

Series: Graduate Studies in Mathematics (Book 39)
Hardcover: 169 pages
Publisher: American Mathematical Society; 1st edition (October 11, 2001)
Language: English
ISBN-10: 0821820192
ISBN-13: 978-0821820193
Product Dimensions: 0.8 x 7 x 10 inches
Shipping Weight: 1.2 pounds (View shipping rates and policies)
Average Customer Review: 5.0 out of 5 starsÂ Â See all reviewsÂ (1 customer review)
Best Sellers Rank: #1,586,721 in Books (See Top 100 in Books) #220 inÂ Books > Science & Math > Mathematics > Geometry & Topology > Algebraic Geometry #238 inÂ Books > Science & Math > Mathematics > Pure Mathematics > Group Theory #888 inÂ Books > Textbooks > Science & Mathematics > Mathematics > Geometry

Customer Reviews

Herman Weyl's book called "Classical Groups" remains indispensable to understanding, but it is

now quite old. Jean Dieudonne updated our ideas and preserved the growing body of knowledge about them in his fine book "La Geometrie des Groupes Classique," but it has been allowed to go out of print. It's very difficult to find. This is a more recent and quite reasonably complete record of the state of our knowledge of this important area. So, it is almost alone in preserving a really indispensable part of our mathematical knowledge. It's carefully written. It's not shockingly entertaining to read, but it's solid, and I couldn't get along without it. It seems strange to me that such an important area isn't better documented.