

<<线性几何>>

图书基本信息

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作者：(德)格伦伯格

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前言

This is essentially a book on linear algebra . But the approach is somewhat unusual in that we emphasise throughout the geometric aspect of the subject . The material is suitable for a course on linear algebra for mathematics majors at North American Universities in their junior or senior year and at British Universities in their second or third year . However , in view of the structure of undergraduate courses in the United States , it is very possible that , at many institutions , the text may be found more suitable at the beginning graduate level .

The book has two aims : to provide a basic course in linear algebra up to , and including , modules over a principal ideal domain ; and to explain in rigorous language the intuitively familiar concepts of euclidean , affine , and projective geometry and the relations between them . It is increasingly recognised that linear algebra should be approached from a geometric point of view . This applies not only to mathematics majors but also to mathematically-oriented natural scientists and engineers . The material in this book has been taught for many years at Queen Mary College in the University of London and one of us has used portions of it at the University of Michigan and at Cornell University . It can be covered adequately in a full

one . year course . But suitable parts can also be used for one . semester courses with either a geometric or a purely algebraic flavor. We shall give below explicit and detailed suggestions on how this can be done (in the " Guide to the Reader ") . The first chapter contains in fairly concise form the definition and most elementary properties of a vector space . Chapter 2 then defines affine and projective geometries in terms of vector spaces and establishes explicitly the connexion between these two types of geometry . In Chapter 3 , the idea of isomorphism is carried over from vector spaces to affine . and projective geometries . In particular , we include a simple proof of the basic theorem of projective geometry , in § 3 . 5 . This chapter is also the one in which systems of linear equations make their first appearance (§ 3 . 3) . They reappear in increasingly sophisticated forms in § § 4 . 5 and 4 . 6. Linear algebra proper is continued in Chapter 4 with the usual topics centred on linear mappings . In this chapter the important concept of duality in vector spaces is linked to the idea of dual geometries . In our treatment of bilinear forms in Chapter 5 we take the theory up to , and including , the classification of symmetric forms over the complex and real fields .

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内容概要

《线性几何（第2版）（英文版）》内容为Vector Spaces、Sets、Groups、Fields and Vector Spaces、Subspaces、Dimension、The Ground Field、Affine and Projective Geometry、Affine Geometries、Affine Propositions of Incidence、Affine Isomorphisms、Homogeneous Vectors、Projective Geometries、The Embedding of Affine Geometry in Projective Geometry、The Fundamental Incidence Theorems of projective Geometry、Isomorphisms、ffinities、Projectivities等等。

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