In chapter I the author provides an introduction to groups, fields and vector spaces together with the basic properties of determinants. In chapters II-IV an account of tensor algebra is given, including exterior algebra. Chapter V provides the tensor calculus, and the remaining four chapters are dedicated to Riemannian spaces.

The book can be used as a textbook for a one-semester 3 hour honour course in differential geometry, on the fourth year level.

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An introduction to nonassociative algebras, by Richard D. Schafer. Academic Press, New York and London, 1966. x + 166 pages. $7.95.

In recent years a fair number of papers on nonassociative algebras have appeared but there have not been many books on the subject. Amongst those there are, we have for example Jacobson's book on Lie Algebras and that of Braun and Koecher on Jordan Algebras. These have aimed to present a detailed and fairly complete picture of certain types of nonassociative algebras. The spirit of the book under review is quite different. It is the author's intention to assist those beginning the study of nonassociative algebras by presenting certain techniques, e.g. Peirce decomposition relative to a set of idempotents, and certain concepts, e.g. definition of the radical, in the context of several different types of nonassociative algebras. The three main chapters deal with alternative algebras, Jordan algebras and power-associative algebras. Lie algebras are not given a separate chapter but arise as derivation algebras of the alternative and Jordan ones.

Although the book is styled an introduction it is not the case that no results from more advanced works are assumed. On page 22 "we use the known result that every derivation of a finite-dimensional semisimple Lie algebra of characteristic 0 is inner." At this point, and others like it, the reader will find a reference to one of the works in the bibliography. Provided he is willing to consult these references he should find no difficulty in following the arguments used. A rough indication of the level of knowledge required before starting the book can be obtained from the author's remark in the preface that he expects "any reader will be acquainted with the content of a beginning course in abstract algebra and linear algebra" and his reference, without further explanation, to Schur's lemma (p.15).

The book is carefully written. The author manages to present the involved passages without making heavy weather of them. The same is true of the printer: for example, on pages 35 and 36, where subscripts abound, the way in which the formulae are displayed makes the task of reading them fairly painless. This is certainly a useful vade-mecum for an algebraist.

C.M. Glennie

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