

than usual, e. g. , Kepler's laws are shown to be equivalent to Newton's inverse square law. The book concludes with a brief (inasmuch as brevity is within the authors' powers) and standard obeisance to questions of existence and uniqueness.

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Modern Multidimensional Calculus, by M. E. Munroe. Addison-Wesley Publishing Co. Inc., 1963. viii + 392 pages.

The aim of the book is to present, primarily, a modern approach to calculus from the point of view of "calculus of variables". The text is intended for those who have had at least a semester of calculus and algebra, and further, who are of a mature calibre. It is the reviewer's contention that a modern approach is made; however some clarity is lost due to a little prolixity. The main objection to the presentation is that Chapter I puts the reader a little on the defensive by the use of $f \circ g$ (read f circle g), and its ramifications. Nevertheless the care with which differentials are treated compensates for any misgivings one may have on Chapter I.

The insertion of a chapter (4) on Matrix and Linear Algebra is an admirable and relatively new idea, as many of the following chapters rely heavily on these methods for their exposition. A further modernising approach is the use of, and careful definition of, the concept of a manifold. Chapter 5, which is very well written, studies partial derivatives, relying to a great extent upon the idea of a differential and extending the discussion in a multidimensional manner to the K -dimensional manifold.

Worked exercises and practice examples are adequate, with answers supplied and many neat figures drawn throughout to supplement proofs and discussion. A word about Chapter 9 on Multiple Integrals may not go awry. The discussion on oriented manifolds and exterior products ($dx \wedge dy$) is elegantly presented, particularly the theorem on changes of variables in double integrals which has an easy extension to higher dimensions. Although one feels that some Widder-like clarity is lost, honours students would certainly benefit from this presentation.

Printing is attractive and the book does succeed in doing what it intended, namely, presenting a modern view of the calculus of many dimensions.

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