Books which give the student a complete introduction into the topic and which their applications to practical questions are completely lacking (sic). I hope that the book which I hereby present will to some extent do justice to this double task. I have endeavored to treat stability theory as a mathematical discipline, to characterize its methods, and to prove its theorems rigorously and completely as mathematical theorems. Still I always strove to make reference to applications, to illustrate the arguments with examples, and to stress the interaction between theory and practice.

The mathematical preparation of the reader should consist of about two to three years of university mathematics. Here and there a few fundamental concepts of the theory of metric spaces are needed, but I have formulated the arguments in such a way that the reader can usually find an interpretation in n-dimensional Euclidean space. On the whole I limited the selection of materials mainly to the stability of motions in Euclidean space, particularly since the majority of applications are concerned with such motions. But I have stated the basic definitions of stability and proved a number of criteria in a general form, and pointed out take-off points for further investigations, as for instance in the theory of differential equations and difference equations."

Richard Datko, McGill University.

Nonlinear Programming, by H. P. Künzi and W. Krelle, in collaboration with W. Oettli. Translated by F. Levin. Blaisdell Publishing Co., Waltham, Mass. 1966 xiv + 240 pages. U.S. $8.50.

Since the appearance of Kuhn and Tucker's basic paper in 1951 (in the Proceedings of the Second Berkeley Symposium on Mathematics, Statistics, and Probability) research in nonlinear programming has been going at a fairly rapid rate. However, in contrast to the well-developed theory of linear programming which has resulted in several excellent monographs and texts, few connected accounts on the status of nonlinear programming have appeared. The present book, which would appear well suited both as a reference and text, is one of the first to fill this gap.

The predominant feature in the organization of results scattered in the literature is the presentation of a variety of methods which have come to be associated with the names of their initiators. Thus, of the fifteen chapters, ten are devoted to the methods and techniques developed by: Hildreth and d'Esopo, Theil and Van de Panne, Beale, Wolfe, Barankin and Dorfman, Frank and Wolfe, Rosen, Frisch, Zoutendijk, and Houthakker. The utility of the book as a text is considerably enhanced by the addition of carefully worked out numerical examples.

The interested reader may also be directed to another recent book: Nonlinear Programming (J. Abadie, Editor, North-Holland, 1967) based on a series of lectures given at a NATO Summer School (Menton, France, 1964).

H. Kaufman, McGill University.

Generalized Functions, Volume 5, Integral Geometry and Representation Theory, by I. M. Gel'fand, M. I. Graev and N. Ya Vilenkin. Translated from the Russian by Eugene Saletan. Academic Press, New York and London, 1966. xviii + 449 pages.

This, the fifth of a series of six volumes on generalized functions and their applications, by Gel'fand and various other authors, is devoted to problems of integral geometry and to their connection with the theory of representations of certain of the classical Lie groups, particularly of the Lorentz group and of matrix groups such as the complex unimodular group which are associated with it.

This statement gives little conception of the wealth of ideas, and especially of new ideas, which this book contains. The approach to integral geometry is among these. The authors see the basic problem of integral geometry to be that of expressing a function in terms of its integrals over some suitable family of manifolds in the space in which it is defined: a connecting idea of the book is the linkage between integral transforms over a suitably chosen family