

Les fonctions généralisées ou distributions, by M. Bouix.  
Masson, Paris, 1964. ix + 223 pages.

Directed to the needs of physicists, this book deserves the attention not only of the latter but of anyone interested in applications of modern mathematics. It is now well-known that a mathematically sound basis exists for handling entities such as the Dirac delta function and other singularities. There still remains room for the publication of good expositions, as the present one, for the dissemination of this information.

The concept of distribution is first introduced using the notion of "fundamental sequences" as developed by Mikusinski. (A more detailed treatment can be found in the little pamphlet by Mikusinski and Sikorski, "Théorie élémentaire des distributions", Gauthier-Villars, Paris, 1964.) This is followed by the definition in terms of functionals, à la Schwartz, and the two approaches are compared. Distributions are then defined for several variables and a complex variable. The last three chapters, on applications to differential equations, include a discussion of Green's functions, the Laplace, Poisson and Helmholtz equations, and Maxwell's electromagnetic equations.

The topics of convolution and Fourier transforms are not covered. For these, the interested reader may be referred to the text by Zemanian, "Distribution Theory and Transform Analysis", McGraw-Hill, 1965.

H. Kaufman, McGill University

Problèmes d'Algèbre générale, par A. Bigard, M. Crestey and J. Grappy. Dunod, Paris, 1967. viii + 226 pages.

A fascinating set of problems, complete with solutions, on such topics as ordered structures, groups, semigroups, rings, ideals, fields and algebraic equations, the book is intended to illustrate the theory set down in "Leçons d'algèbre moderne" by P. Dubreil and M.-L. Dubreil-Jacotin. Although frequent reference is made to these "Leçons", the problems can be understood and used in studies based on other texts.

The selection of problems is good; they range in difficulty from the routine to the highly challenging.

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Differential und Integralrechnung I, by Hans Grauert and Ingo Lieb. Heidelberg Taschenbücher Nr. 26, Springer-Verlag Berlin-Heidelberg-New York, 1967. x + 200 pages.

This is a textbook for a first semester course in calculus of one variable at German universities. It is based on lectures given by the first of the authors at Göttingen University. Since the book gives a rather