

of the numbers a for which

$$\frac{f(\xi) - f(x)}{\xi - x} \geq a, \quad \xi > x, \quad \xi \in A,$$

for a set ξ of right density greater than zero at x . For the discussion of these approximate derivatives the notion (already used by him, loc. cit.) of a function $f(x)$ metrically separable relative to the set A is essential; that is, for every a the two sets $A [f(x) < a]$ and $A [f(x) \geq a]$ have to be metrically separated. At the end of this chapter, relations to H. Blumberg's investigations on arbitrary functions [Acta Math. vol. 65 (1935) pp. 263–282] are also outlined.

The last Chapter VIII discusses the Riemann-Stieltjes integral and, in connection with it, linear functionals. The author finally indicates how this leads to the idea of the distributions of L. Schwartz.

So we see that many interesting topics are treated in this book. Moreover, the presentation is very careful and readable.

ARTHUR ROSENTHAL

BRIEF MENTION

Einführung in die Funktionentheorie. By L. Bieberbach. 2d ed. Bielefeld, Verlag für Wissenschaft und Fachbuch, 1952. 220 pp., 43 figs. 12.60 DM.

The present volume is a second revised edition of Bieberbach's well known *Einführung in die Funktionentheorie*. It is intended for the reader who possesses a modicum of classical real analysis. Applications of complex variable methods to hydrodynamics and potential theory are treated. In general, emphasis is put on those aspects of classical complex function theory which are of interest in the applications. In addition to the usual standard material of a first course on the theory of functions of a complex variable, there is a section on practical aspects of conformal mapping which includes a brief account of Bergman's orthogonalization methods.

A number of sections are followed by supplementary material which serves in part as exercises and in part as indications of further developments of the subject matter treated in the corresponding section. In this connection the proof due to Ankeny of the fundamental theorem of algebra which is based directly on the Cauchy integral theorem is worth mention (pp. 85–86).

MAURICE HEINS