than six elements, or when $A \cdot A(r)$ or $D \cdot D(r)$ are suitably restricted. With conditions on A, the criterion for finite D generalizes to infinite D. If $D(A)$ and (hence) A are denumerably (nondenumerably) infinite, then $D(A) \cdot (D(A))(r)$ is necessarily denumerably (nondenumerably) infinite for denumerably (nondenumerably) many r's. If D' is of measure zero or of the first Baire category, then the continuum-hypothesis implies the existence of an A for which $D = D(A)$. Finally, many properties of D are enumerated which exclude the existence of the required A.

Aside from occasional use of transfinite induction and the continuum-hypothesis, the proofs may fairly be called elementary. On the other hand, they are often quite intricate, simple results requiring the examination of a myriad cases. Pushed with patient energy, this study has yielded a remarkable amount of detailed information, from which one may form a definite idea of the difficulties and rewards to be met in the directions here pursued. One also finds general results of great interest, which do not claim to be complete. Many problems are explicitly proposed, and many others at once suggest themselves. For this solid progress we are very substantially indebted to the author, who doubtless shares the hope that a still deeper analysis—possibly along somewhat different lines—may presently yield a more satisfying theory.

Remarks: 1. Considerable data are given on sets A in higher dimensional spaces, but such results have been ignored here for the sake of brevity.

2. Though the argument is apparently not vitiated by its omission in the text (for reasons which will not escape a reader), the reviewer feels compelled to record here the fact that the property P (p. 54) is not invariant under translation, is accordingly peculiar to the position of a set on the line, and may not be shared by a set congruent to a set which has it.

3. One should take care, on p. 39, line 19, to read "$D(A) + D(CA)$" instead of "$D(A)$" (see Property 2, p. 46).

4. This book regrettably upholds the secretive tradition under which the index is omitted.

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Tables of probability functions, Vol. II. New York, Work Projects Administration, 1942. 21+344 pp. $2.00.

The first volume of *Probability functions* appeared in 1941; it was reviewed in Bull. Amer. Math. Soc. vol. 48 (1942) p. 201. The present