ABSTRACTS OF PAPERS

SUBMITTED FOR PRESENTATION TO THE SOCIETY

The following papers have been submitted to the Secretary and the Associate Secretaries of the Society for presentation at meetings of the Society. They are numbered serially throughout this volume. Cross-references to them in the reports of the meetings will give the number of this volume, the number of this issue, and the serial number of the abstract.

133. Professor B. A. Bernstein: *Postulates for abelian groups and fields in terms of non-associative operations.*

The author gives postulate-sets for abelian groups in terms of "subtraction," and a postulate-set for fields in terms of "subtraction" and "division." The postulates are simple, and contain no existence proposition other than one which excludes the trivial null and one-element groups and fields. All special elements, such as "zero," "unity," are defined in terms of subtraction and division. (Received March 4, 1936.)

134. Mr. J. C. C. McKinsey: *On Boolean functions of n variables.*

The author treats of some facts regarding the Boolean functions of n variables. The results are, in part a treatment of new problems, in part a generalization to functions of n variables of theorems given by Karl Schmidt (Transactions of this Society, vol. 23 (1922), pp. 212–222) for functions of one variable. First are discussed "monotone" Boolean functions (which are analogous to the monotone functions of ordinary analysis), with conditions that functions be monotone non-decreasing and monotone non-increasing. An analog is also defined and discussed, for Boolean functions, of the "continuity" of classical analysis; it is shown that all Boolean functions are "continuous" and the importance of continuity with regard to functions of Boolean variables which cannot be expressed by means of the usual Boolean operations is suggested. Finally inverse functions are discussed, and all the domains are found within which a function of n variables has a one-valued inverse. (Received March 4, 1936.)

135. Professor G. C. Evans: *Sets on which a harmonic function becomes positively infinite.*

A closed set on which an otherwise harmonic function becomes positively infinite must be of capacity zero. Conversely, given a closed set of capacity zero, a function exists which becomes positively infinite at every point of the set and is otherwise harmonic. On the other hand, potentials of positive mass which become positively infinite on certain sets of category I also necessarily become infinite on enclosing sets of category II. (Received March 13, 1936.)