

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.

ALGEBRA AND THEORY OF NUMBERS

194. Warren Ambrose: *Remark on measures on locally compact topological groups.*

Let G be a locally compact topological group with Haar measure m . Let m' be another left invariant measure which satisfies André Weil's condition: $(x, y) \rightarrow (x, xy)$ is measure preserving. The measure m' is a *sub-measure* of the Haar measure m if and only if every m -measurable set of positive m -measure contains an m' -measurable set of positive m' -measure. It is shown that every sub-measure m' gives rise in a natural way to a locally compact topology on G which is a refinement of the given locally compact topology, and in which G is a topological group. Strong use is made of André Weil's fundamental theorem about measure giving rise to a topology, but it is necessary to modify his topology, in general, to obtain local compactness. (Received August 8, 1945.)

195. Reinhold Baer: *Null systems in projective space.*

Extending a result by O. Veblen-Young, R. Brauer has characterized the null-systems over an n -dimensional projective space P , proving in particular that n must be odd, provided that P is the n -dimensional projective space over a commutative field of coordinates. It is the object of the present note to remove this last hypothesis. More precisely it is proved that the existence of a null-system in an n -dimensional projective space P with $1 < n$ is equivalent to the fact that n is odd and that P is the n -dimensional projective space over a commutative field of coordinates. (Received August 22, 1945.)

196. Reinhold Baer: *Representations of groups as quotient groups.*
I.

If N is a normal subgroup of the group H , and if the groups G and H/N are isomorphic, consider H/N a representation of the group G . In this first part of a systematic theory of such representations the author is concerned with three problems: the classification of representations; the derivation of invariants of classes of representations; the construction of "interesting" classes of representations. (Received August 22, 1945.)

197. Reinhold Baer: *Representations of groups as quotient groups.*
II. *Minimal central chains of a group.*

If N is a normal subgroup of the group G , define the subgroups ${}_iN$, ${}_iG$ inductively by ${}_iG = (G, {}_{i-1}G)$, ${}_iN = (G, {}_{i-1}N)$ where (X, Y) is the subgroup generated by all the