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.

1. Dr. Ralph Hull: *The maximal orders of generalized quaternion division algebras.*

A generalized quaternion division algebra Q is of the form $Q=(a, Z) =Z+uZ$, where Z is a quadratic field, $u^2=a$ is rational and not the norm of an element of Z, and $Zu=uZ'$ elementwise. In this paper for each Q all maximal orders $\mathfrak{M}$, that is, maximal sets of integral elements, are determined explicitly. For any maximal order $\mathfrak{M}$ of Q, let $\mathfrak{m}_c$ be the intersection of $\mathfrak{M}$ and Z. Then $\mathfrak{m}_c$ is an order in Z with a positive rational integral conductor c, and there exists an $\mathfrak{m}_c$-ideal $\mathfrak{n}$ of Z, not necessarily either integral or regular, and a quantity λ of Z, such that $\mathfrak{M}=\mathfrak{m}_c+(\lambda+u)\mathfrak{n}$. Conversely, in terms of a special generation for each Q found by Albert (this Bulletin, vol. 40 (1934), pp. 164–177) all $\mathfrak{m}_c$, and for a fixed c, all $\mathfrak{n}$ and λ, such that $\mathfrak{m}_c+(\lambda+u)\mathfrak{n}$ is an $\mathfrak{M}$, are determined For a fixed c there are infinitely many $\mathfrak{n}$, and for each of these a rational basis is easily found. For fixed c and $\mathfrak{n}$, the finite number of λ which yield distinct $\mathfrak{M}$ are determined. A single rational basis for each $\mathfrak{M}$ is determined. (Received November 1, 1935.)

2. Professor H. J. Ettlinger and Mr. O. H. Hamilton: *Sets of functions and their limit functions.*

For sets of functions (real) on I: $0\leqq x\leqq 1$, the following theorems are proved: 1. Extension of Arzela's theorem on the necessary and sufficient condition that a set of functions converge to a continuous limit function to include absolutely continuous functions which converge to absolutely continuous limit functions. 2. Extension of Ascoli's theorem to the effect that a bounded equicontinuous set of functions has a subsequence which converges to a continuous limit function, and the corollary of Graves that if the set above is equi-absolutely continuous, the limit function will be absolutely continuous, to include the result that the original set plus all of its limit functions will be equi-absolutely continuous. 3. Any uncountable (or absolutely continuous) set of functions on I contains a bounded subsequence which has a continuous (or absolutely continuous) limit function. 4. If $f^\alpha(x)$ is a collection of continuous functions on I and no two of these functions cross, there is a subsequence $f_n(x)$ such that each point which lies on two or more functions $f^\alpha(x)$ lies on $f_n(x)$ for