

BIBLIOGRAPHY

1. C. Chevalley and A. Weil, *Über das Verhalten der Integrale. 1. Gattung bei Automorphismen des Funktionenkörpers*, Abh. Math. Sem. Univ. Hamburg 10 (1934), 358–361.
2. R. C. Gunning, *Lectures on modular forms*, Princeton Univ. Press, Princeton, N. J., 1962.
3. J. Lewittes, *Automorphisms of compact Riemann surfaces*, Thesis, Yeshiva University, New York, 1962.
4. B. Schoeneberg, *Über die Weierstrass Punkte in den Körpern der Elliptischen Modulfunktionen*, Abh. Math. Sem. Univ. Hamburg 17 (1951), 104–111.

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SOME RESULTS ON THE EXTENSION OF OPERATORS¹

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1. **Introduction.** The subject of the present note is closely related to questions treated in [6] and [7] (cf. also [8]). In §2 we state some results showing that certain extension properties for operators with a two-dimensional range imply extension properties for a much larger class of operators. Extension properties for operators with a two-dimensional range are, in a sense, the weakest possible, since by the Hahn Banach theorem operators with a one-dimensional range can always be extended in a norm preserving manner.

The results stated in §3 demonstrate the rôle of finite dimensional spaces whose unit cell is a polyhedron in some problems concerning norm preserving extension of operators. Proofs of the results stated here will be published elsewhere.

I wish to express my thanks to Professor S. Kakutani for many valuable discussions concerning the subject of this note.

NOTATIONS. All Banach spaces are assumed to be over the reals. S_X denotes the unit cell $\{x; \|x\| \leq 1\}$ of the Banach space X . By "cell" we mean a translate of rS_X , $r > 0$. All operators are assumed to be linear and bounded.

2. Our first theorem complements the main result of [7] (cf. also [8, Theorem 1]).

THEOREM 1. *Let X be a Banach space such that S_X has at least one extreme point. The following statements are equivalent.*

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