663-336. J. W. THOMAS, and V. M. SEHGAL, University of Wyoming, Laramie, Wyoming 82070. Quotient space of random normed spaces. Preliminary report.

Suppose (L, f, μ) is a random normed space as defined by A. N. Šerstnev, On the concept of a random normed space, Soviet Math. Dokl. 4 (1963), 388-391. Let M be a closed subspace of L and consider the quotient space L/M. Functions g and μ^* are defined that makes (L/M,g,μ^*) a linear topological space. Conditions are then imposed on μ^* to make (L/M, g, μ^*) a random normed space.

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663-337. AARON STRAUSS, Mathematical Research Center, U. S. Army, University of Wisconsin, Madison, Wisconsin 53706, and J. A. YORKE, Institute of Fluid Dynamics, University of Maryland, College Park, Maryland 20740. Identifying perturbations which preserve asymptotic stability.

Let x = 0 be uniform-asymptotically stable (UAS) for (1) $x' = f(t,x)$. Let f be Lipschitz. Then it is known that x = 0 is UAS for (2) $x' = f(t,x) + g(t,x)$ if g is sufficiently small. In the standard proof estimates on the allowable size of g are obtained in terms of a Liapunov function associated with (1). We establish estimates on g in terms of the rate of approach to zero of the solutions of (1). In so doing we also obtain an estimate on the rate of approach to zero of solutions of (2) for such g. This leads to a new proof and slight extension of Hahn's theorem: If f is homogeneous of degree k, then uniform-asymptotic stability is preserved by $g(t,x) = o(|x|^k)$. (See W. Hahn, Stability of motion, Springer-Verlag, Berlin, 1967, Sections 56 and 57.) (Received October 22, 1968.)

663-338. J. D. MONK, University of Colorado, Boulder, Colorado 80302. On the lattice of equational classes of one- and two-dimensional polyadic algebras.

The lattice of equational classes of monadic algebras is a chain of length $\omega + 1$, and a single explicit equation is given for each such class. There are $\aleph_0$ equational classes of two-dimensional polyadic algebras; each class is finitely based and is determined by its finite members. For any class considered the decision problem for equations holding in each member of the class is solvable. The proofs give some insight into the structure of simple polyadic algebras of dimension two.

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663-339. STEVE LIGH, Texas A& M University, College Station, Texas 77843. On distributively generated near-rings.

Let R be a distributively generated near-ring. Among the results obtained are the following: If e is a unique left (right) identity of R, then e is also a right (left) identity. If R has more than one element, then R is a division ring if and only if, for each $a \neq 0$ in R, there exists a unique b in R such that aba = a. If R is finite and has no nonzero divisors of zero, then R is a field. (Received October 22, 1968.)