Pacific Journal of Mathematics

W. G. Bade and R. S. Freeman, Closed extensions of the Laplace operator

determined by a general class of boundary conditions	395
William Browder and Edwin Spanier, H-spaces and duality	
Stewart S. Cairns, On permutations induced by linear value functions	415
S. Cater, On Hilbert space operators and operator roots of polynomials	429
Stephen U. Chase, Torsion-free modules over $K[x, y]$	437
H. S. Collins, Remarks on affine semigroups	
Peter Crawley, Direct decompositions with finite dimensional factors	
R. B. Darst, A continuity property for vector valued measurable functions.	
R. P. Dilworth, Abstract commutative ideal theory	
P. H. Doyle and J. G. Hocking, Continuously invertible spaces	
S. R. Foguel, Markov processes with stationary measure	505
Andrew M. Gleason, The abstract theorem of Cauchy-Weil	511
Allan B. Gray, Jr., Normal subgroups of monomial groups	527
Melvin Henriksen and J. R. Isbell, Lattice-ordered rings and function rings.	
Amnon Jakimovski, Tauberian constants for the $[J, f(x)]$ transformations	
Hubert C. Kennedy, Group membership in semigroups	
Eleanor Killam, The spectrum and the radical in locally m-convex algebras.	581
A. H. Kruse, Completion of mathematical systems	
Magnus Lindberg, On two Tauberian remainder theorems	607
Lionello A. Lombardi, A General solution of Tonelli's problem of the calculus	
of variations	617
Marvin Marcus and Morris Newman, The sum of the elements of the powers	
of a matrix	627
Michael Maschler, Derivatives of the harmonic measures in multiply-	
connected domains	637
Deane Montgomery and Hans Samelson, On the action of SO(3) on S^n	649
J. Barros-Neto, Analytic composition kernels on Lie groups	
Mario Petrich, Semicharacters of the Cartesian product of two semigroups .	
J. S. Pym, Idempotent measures on semigroups	
K. Rogers and E. G. Straus, A special class of matrices	
U. Shukla, On the projective cover of a module and related results	
D. H. Tucker, An existence theorem for a Goursat problem	719
Georges G. Weill, Reproducing kernels and orthogonal kernels for analytic	
differentials on Riemann surfaces	
Georges G. Weill, Capacity differentials on open Riemann surfaces	
G. K. White, Iterations of generalized Euler functions	777

Adil Yaqub, On certain finite rings and ring-logics.....

Summer 1962

Vol. 12, No. 2

PACIFIC JOURNAL OF MATHEMATICS

EDITORS

RALPH S. PHILLIPS Stanford University Stanford, California

M. G. ARSOVE University of Washington Seattle 5, Washington

A. L. WHITEMAN

University of Southern California Los Angeles 7, California

LOWELL J. PAIGE University of California Los Angeles 24, California

ASSOCIATE EDITORS

E. F. BECKENBACH	D. DERRY	H. L. ROYDEN	E. G. STRAUS
T. M. CHERRY	M. OHTSUKA	E. SPANIER	F. WOLF

SUPPORTING INSTITUTIONS

UNIVERSITY OF BRITISH COLUMBIA CALIFORNIA INSTITUTE OF TECHNOLOGY UNIVERSITY OF CALIFORNIA MONTANA STATE UNIVERSITY UNIVERSITY OF NEVADA NEW MEXICO STATE UNIVERSITY OREGON STATE UNIVERSITY UNIVERSITY OF OREGON OSAKA UNIVERSITY UNIVERSITY OF SOUTHERN CALIFORNIA

STANFORD UNIVERSITY UNIVERSITY OF TOKYO UNIVERSITY OF UTAH WASHINGTON STATE UNIVERSITY UNIVERSITY OF WASHINGTON

AMERICAN MATHEMATICAL SOCIETY CALIFORNIA RESEARCH CORPORATION SPACE TECHNOLOGY LABORATORIES NAVAL ORDNANCE TEST STATION

Mathematical papers intended for publication in the *Pacific Journal of Mathematics* should be typewritten (double spaced), and the author should keep a complete copy. Manuscripts may be sent to any one of the four editors. All other communications to the editors should be addressed to the managing editor, L. J. Paige at the University of California, Los Angeles 24, California.

50 reprints per author of each article are furnished free of charge; additional copies may be obtained at cost in multiples of 50.

The *Pacific Journal of Mathematics* is published quarterly, in March, June, September, and December. Effective with Volume 13 the price per volume (4 numbers) is \$18.00; single issues, \$5.00. Special price for current issues to individual faculty members of supporting institutions and to individual members of the American Mathematical Society: \$8.00 per volume; single issues \$2.50. Back numbers are available.

Subscriptions, orders for back numbers, and changes of address should be sent to Pacific Journal of Mathematics, 103 Highland Boulevard, Berkeley 8, California.

Printed at Kokusai Bunken Insatsusha (International Academic Printing Co., Ltd.), No. 6, 2-chome, Fujimi-cho, Chiyoda-ku, Tokyo, Japan.

PUBLISHED BY PACIFIC JOURNAL OF MATHEMATICS, A NON-PROFIT CORPORATION

The Supporting Institutions listed above contribute to the cost of publication of this Journal, but they are not owners or publishers and have no responsibility for its content or policies.