## Pacific <br> Journal of Mathematics

G. D. Allen, F. J. Narcowich and J. P. Williams, An operator version of a theorem of Kolmogorov ..... 305
J. Anderson and C. Foiaș, Properties which normal operators share with normal derivations and related operators ..... 313
C. Apostol and N. Salinas, Nilpotent approximations and quasinilpotent operators ..... 327
J. M. Briggs, Finitely generated ideals in regular $F$-algebras ..... 339
F. B. Cannonito and R. W. Gatterdam, The word problem and power problem in 1-relator groups are primitive recursive ..... 351
C. E. Corzatt, Permutation polynomials over the rational numbers ..... 361
L. S. Dube, An inversion of the $S_{2}$ transform for generalized functions ..... 383
W. R. Emerson, Averaging strongly subadditive set functions in unimodular amenable groups I ..... 391
B. J. Gardner, Semi-simple radical classes of algebras and attainability of identities ..... 401
I. Glicksberg, Removable discontinuities of $A$-holomorphic functions ..... 417
F. Halpern, Transfer theorems for topological structures ..... 427
H. B. Hamilton, T. E. Nordahl and T. Tamura, Commutative cancellative semigroups without idempotents ..... 441
M. Hochster, An obstruction to lifting cyclic modules ..... 457
A. H. Lachlan, Theories with a finite number of models in an uncountable power are categorical ..... 465
K. B. Laursen, Continuity of linear maps from $C^{*}$-algebras ..... 483
T.-S. Liu, Oscillation of even order differential equations with deviating arguments ..... 493
J. Martinez, Doubling chains, singular elements and hyper-尺્Z l-groups ..... 503
M. Radjabalipour and H. Radjavi, On the geometry of numerical ranges ..... 507
T. I. Seidman, The solution of singular equations, I: Linear equations in hilbert space ..... 513
R. J. Tomkins, Properties of martingale-like sequences ..... 521
A. Van Deale, A Radon Nikodym theorem for weights on von Neumann algebras. ..... 527
K. S. Williams, On Euler's criterion for quintic nonresidues ..... 543
M. B. Wischnewsky, On linear representations of affine groups I ..... 551
S. Wolpert, Noncompleteness of the Weil-Peterson metric for Teichmüller space ..... 573
V. Wrobel, Some generalizations of Schauder's theorem in locally convex spaces ..... 579
B. Zimmermann-Huisgen, Endomorphism rings of self-generators ..... 587
ERRATA, ..... 603

# PACIFIC JOURNAL OF MATHEMATICS 

## EDITORS

Richard Arens (Managing Editor)
University of California
Los Angeles, California 90024
J. Dugundji

Department of Mathematics University of Southern California Los Angeles, California 90007
D. Gilbarg and J. Milgram

Stanford University
Stanford, California 94305

## ASSOCIATE EDITORS

E. F. Beckenbach<br>B. H. Neumann<br>F. Wolf<br>K. Yoshida

## 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

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.

Mathematical papers intended for publication in the Pacific Journal of Mathematics should be in typed form or offset-reproduced, (not dittoed), double spaced with large margins. Please do not use built up fractions in the text of your manuscript. You may however, use them in the displayed equations. Underline Greek letters in red, German in green, and script in blue. The first paragraph or two must be capable of being used separately as a synopsis of the entire paper. Items of the bibliography should not be cited there unless absolutely necessary, in which case they must be identified by author and Journal, rather than by item number. Manuscripts, in triplicate, may be sent to any one of the editors. Please classify according to the scheme of Math. Reviews, Index to Vol. 39. All other communications should be addressed to the managing editor, or Elaine Barth, University of California, Los Angeles, California, 90024.

The Pacific Journal of Mathematics expects the author's institution to pay page charges, and reserves the right to delay publication for nonpayment of charges in case of financial emergency.

100 reprints are provided free for each article, only if page charges have been substantially paid. Additional copies may be obtained at cost in multiples of 50 .

The Pacific Journal of Mathematics is issued monthly as of January 1966. Regular subscription rate: $\$ 72.00$ a year ( 6 Vols., 12 issues). Special rate: $\$ 36.00$ a year to individual members of supporting institutions.

Subscriptions, orders for back numbers, and changes of address should be sent to Pacific Journal of Mathematics, 103 Highland Boulevard, Berkeley, California, 94708.

PUBLISHED BY PACIFIC JOURNAL OF MATHEMATICS, A NON-PROFIT CORPORATION
Printed at Kokusai Bunken Insatsusha (International Academic Printing Co., Ltd.), 8-8, 3-chome, Takadanobaba, Shinjuku-ku, Tokyo 160, Japan.

