# Pacific 

## Journal of

# Mathematics 

## VOLUME LXXXI <br> 1979

## PACIFIC JOURNAL OF MATHEMATICS

## EDITORS

DONALD BABBITT (Managing Editor)
University of California
Los Angeles, California 90024
HUgo Rossi
University of Utah
Salt Lake City, UT 84112
C. C. MOORE

University of California
Berkeley, CA 94720
J. DUGUNDJI

Department of Mathematics
University of Southern Californa
Los Angeles, California 90007
R. Finn and J. Milgram

Stanford University
Stanford, California 94305

## ASSOCIATE EDITORS

$\begin{array}{lll}\text { E. F. Beckenbach } & \text { B. H. Neumann } & \text { F. Wolf Yoshida }\end{array}$

## SUPPORTING INSTITUTIONS

UNIVERSITY OF BRITISH COLUMBIA
CALIFORNIA INSTITUTE OF TECHNOLOGY
UNIVERSITY OF CALIFORNIA MONTANA STATE UNIVERSITY UNIVERSITY OF NEVADA, RENO NEW MEXICO STATE UNIVERSITY OREGON STATE UNIVERSITY UNIVERSITY OF OREGON

UNIVERSITY OF SOUTHERN CALIFORNIA STANFORD UNIVERSITY UNIVERSITY OF HAWAII UNIVERSITY OF TOKYO UNIVERSITY OF UTAH WASHINGTON STATE UNIVERSITY UNIVERSITY OF WASHINGTON

## CONTENTS

## A - ALGEBRA AND NUMBER THEORY

R. F. Damiano, Coflat rings and modules ..... 349
A. Day, H. Gaskill and W. Poguntke, Distribution lattices with finite projective covers ..... 45
R. J. Evans, Resolution of sign ambiguities in Jacobi and Jacobsthal sums ..... 71
H. Gaskill, See A. Day, H. Gaskill and W. Poguntke
M. Gould and H. H. James, Automorphism groups retractingonto symmetric groups93
P. Hess, Dedekind's problem: monotone Boolean functions on the lattice of divisors of an integer ..... 411
H. H. James, See M. Gould and H. H. James
C. Levesque, $A$ class of fundamental units and some classes of Jacobi-Perron algorithms in pure cubic fields ..... 447
J. E. Mills, The idempotents of a class of 0-simple inverse semigroups ..... 159
W. Poguntke, See A. Day, H. Gaskill and W. Poguntke
L. J. Ratliff, Jr., Two theorems on the prime divisors of zero in completions of local domains ..... 537
J. L. Searcy and B. A. Troesch, A cyclic inequality and a related eigenvalue problem ..... 217
B. A. Troesch, See J. L. Searcy and B. A. Troesch
D. J. Winter, Triangulable subalgebras of Lie p-algebras ..... 273
B - ANALYSIS
T. E. Armstrong, Simplicial subdivision of infinite dimensional compact cubes ..... 1
H. S. Bear, Approximate identities and pointwise convergence ..... 17
E. Behrends, The centralizer of tensor products of Banach spaces (a function space representation) ..... 291
R. D. Bourgin, Partial orderings for integral representations on convex sets with the Radon-Nikodym property ..... 29
R. Carlson, Eigenfunction expansions for self-adjoint integro- differential operators ..... 327
H. A. M. Dzinotyiweyi and G. L. G. Sleijpen, A note on measures on foundation semigroups with weakly compact orbits ..... 61
U. Elias, Necessary conditions and sufficient conditions for disfocality and disconjugacy of a differential equation ..... 379
J. A. Fridy, Tauberian theorems via block dominated matrices ..... 81
A. Hopenwasser and D. Larson, The carrier space of a reflexive operator algebra ..... 417
K. Kreith, Nonlinear differential equations with monotone solutions ..... 101
D. Larson, See A. Hopenwasser and D. Larson
T.-C. Lim, $A$ constructive proof of the infinite version of the Belluce-Kirk theorem ..... 467
R. C. McCann, Asymptotically stable dynamical systems are linear ..... 475
P. A. McCoy, Approximation and harmonic continuation of axially symmetric potentials in $E^{3}$. ..... 481
B. W. McEnnis, Shifts on indefinite inner product spaces ..... 113
J. Miles, On entire functions of infinite order with radically distributed zeros ..... 131
E. J. Moulis, Jr., Generalizations of the Robertson functions ..... 167
T. Nakazi, Extended weak-Dirichlet algebras ..... 493
C. L. Prather, On the zeros of derivatives of balanced trigonometric polynomials ..... 515
I. Raeburn, An implicit function theorem in Banach spaces ..... 525
G. L. G. Sleijpen, See H. A. M. Dzinotyiweyi and G. L. G. Sleijpen
R. R. Smith and J. D. Ward, M-ideals in $B\left(l_{p}\right)$ ..... 227
M. Talagrand, Deux generalisations d'un theoreme de I. Namioka ..... 239
J. Voigt, On $Y$-closed subspaces of $X$, for Banach spaces $X \subset Y$; existence of alternating elements in subspaces of $C(J)$ ..... 253
J. D. Ward, See R. R. Smith and J. D. Ward
S. M. Webster, On mapping an $n$-ball into an $(n+1)$-ball in complex space ..... 267
D - GEOMETRY
E. Akyildiz, Vector fields and equivariant bundles ..... 283
G. R. Burton, Congruent sections of a convex body ..... 303
R. Moynihan and B. Schweizer, Betweenness relations in probabilistic metric spaces ..... 175
B. Schweizer, See R. Moynihan and B. Schweizer
S. E. Wilson, Operators over regular maps ..... 559
F-STATISTICS
M. Sambandham, On the average number of real zeros of a class of random algebraic curves ..... 207
G - TOPOLOGY
J. W. Carlson, H-closed and countably compact extensions ..... 317
E. K. van Douwen and W. F. Pfeffer, Some properties of the Sorgenfrey line and related spaces ..... 371
V. L. Hansen, Polynomial covering spaces and homomorphisms into the braid groups ..... 399
K. B. Lee, Spaces in which compacta are uniformly regular $G_{\delta}$ ..... 435
D. Maharam and A. H. Stone, Borel boxes ..... 471
S. Ocken, Perturbing embeddings in codimension two ..... 197
W. F. Pfeffer, See E. K. van Douwen and W. F. Pfeffer
A. H. Stone, See D. Maharam and A. H. Stone
G. Tashjian, Cartesian-closed coreflective subcategories of Tychonoff
spaces ..... 547

## Pacific

## Journal of Mathematics

THOMAS E. ARMSTRONG ..... 1
H. S. BEAR ..... 17
RICHARD D. BOURGIN ..... 29
ALAN DAY, HERB GASKILL, and WERNER POGUNTKE ..... 45
HENRY A. M. DZINOTYIWEYI and GERARD L. G. SLEIJPEN ..... 61
RONALD J. EVANS ..... 71
J. A. FRIDY ..... 81
MATHEW GOULD and HELEN H. JAMES ..... 93
KURT KREITH ..... 101
BRIAN W. McENNIS ..... 113
JOSEPH MILES ..... 131
JANET E. MILLS ..... 159
EDWARD J. MOULIS, JR. ..... 167
R. MOYNIHAN and B. SCHWEIZER ..... 175
STANLEY OCKEN ..... 197
M. SAMBANDHAM ..... 207
J. L. SEARCY and B. A. TROESCH ..... 217
R. R. SMITH and J D. WARD ..... 227
MICHEL TALAGRAND ..... 239
JURGEN VOIGT ..... 253
S. M. WEBSTER ..... 267
DAVID J. WINTER ..... 273

# PACIFIC JOURNAL OF MATHEMATICS 

## EDITORS

Donald Babbitt (Managing Editor)

University of California
Los Angeles, CA 90024
Hugo Rossi
University of Utah
Salt Lake City, UT 84112
C. C. Moore

University of California
Berkeley, CA 94720

## 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, RENO
NEW MEXICO STATE UNIVERSITY
OREGON STATE UNIVERSITY
UNIVERSITY OF OREGON

## J. Dugundji

Department of Mathematics
University of Southern California
Los Angeles, CA 90007
R. Finn and J. Milgram

Stanford University
Stanford, CA 94305

| SUPPORTING |  |
| :--- | :--- |
|  | INSTITUTIONS |
| UNIVERSITY OF BRITISH COLUMBIA | UNIVERSITY OF SOUTHERN CALIFORNIA |
| CALIFORNIA INSTITUTE OF TECHNOLOGY | STANFORD UNIVERSITY |
| UNIVERSITY OF CALIFORNIA | UNIVERSITY OF HAWAII |
| MONTANA STATE UNIVERSITY | UNIVERSITY OF TOKYO |
| UNIVERSITY OF NEVADA, RENO | UNIVERSITY OF UTAH |
| NEW MEXICO STATE UNIVERSITY | WASHINGTON STATE UNIVERSITY |
| OREGON STATE UNIVERSITY | UNIVERSITY OF WASHINGTON |
| UNIVERSITY OF OREGON |  |

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 the manuscript. However, you may 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. Please propose a heading for the odd numbered pages of less than 35 characters. 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. Supply name and address of author to whom proofs should be sent. All other communications should be addressed to the managing editor, or Elaine Barth, University of California, Los Angeles, California, 90024.

50 reprints to each author 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 numbers issued in the last three calendar years, and changes of address should be sent to Pacific Journal of Mathematics, P.O. Box 969, Carmel Valley, CA 93924, U.S.A. Older back numbers obtainable from Kraus Periodicals Co., Route 100, Millwood, NY 10546.
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.

