Pacific Journal of Mathematics

S. Ahmad, On the oscillation of solutions of a class of linear fourth order differential equations
L. Asimow and A. J. Ellis, Facial decomposition of linearly
compact simplexes and separation of fuctions on cones301
K. A. Baker and A. R. Stralka, Compact, distributive lattices of
$finite\ breadth\dots\dots311$
J. W. Cannon, Sets which can be missed by side approximations to spheres
P. Chandra, Absolute summability by Riesz means
F. T. Christoph, Jr., Free topological semigroups and embedding topological semigroups in topological groups
H. B. Cohen and F. E. Sullivan, Projecting onto cycles in smooth,
reflexive Banach spaces355
J. Dauns, Power series semigroup rings365
R. E. Dressler, A density which counts multiplicity371
K. R. Fuller, Primary rings and double centralizers379
G. A. Gislason, On the existence question for a family of prod- ucts
A. Gleit, On the structure topology of simplex spaces
W. R. Gordon and M. Marcus, An analysis of equality in certain matrix inequalities, I
G. W. Johnson and D. L. Skoug, Operator-valued Feynman in-
tegrals of finite-dimensional functionals
H. D. Kahn, Covering semigroups427
Keith Kendig, Fibrations of analytic varieties441
N. Y. Luther, Weak denseness of nonatomic measures on perfect, locally compact spaces
G. Owen, The four-person contant-sum games: discriminatory
solutions on the main diagonal461
S. K. Parrott. Unitary dilations for commuting contractions481
R. M. Rakestraw, Extremal elements of the convex cone A_n of functions
P. L. Renz, Intersection representations of graphs by arcs501
W. H. Ruckle, Representation and series summability of complete
$biorthogonal\ sequences$ 511
F. D. Sentilles, The strict topology on bounded sets
S. Shelah, A note on Hanf numbers541
H. Simmons, The solution of a decision problem for several classes of rings
K. S. Williams, Finite transformation formulae involving the
Legendre symbol

PACIFIC JOURNAL OF MATHEMATICS

EDITORS

H. SAMELSON Stanford University Stanford, California 94305

J. DUGUNDJI
Department of Mathematics
University of Southern California
Los Angeles, California 90007

RICHARD PIERCE University of Washington Seattle, Washington 98105 RICHARD ARENS
University of California
Los Angeles, California 90024

ASSOCIATE EDITORS

E. F. BECKENBACH

B. H. NEUMANN

F. WOLE

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 CHEVRON RESEARCH CORPORATION TRW SYSTEMS NAVAL WEAPONS CENTER

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. 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. The editorial "we" must not be used in the synopsis, and 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 duplicate if possible, may be sent to any one of the four editors. Please classify according to the scheme of Math. Rev. Index to Vol. 39. All other communications to the editors should be addressed to the managing editor, Richard Arens, University of California, Los Angeles, California, 90024.

50 reprints are provided free for each article; additional copies may be obtained at cost in multiples of 50.

The Pacific Journal of Mathematics is published monthly. Effective with Volume 16 the price per volume (3 numbers) is \$8.00; single issues, \$3.00. Special price for current issues to individual faculty members of supporting institutions and to individual members of the American Mathematical Society: \$4.00 per volume; single issues \$1.50. 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, California, 94708.

PUBLISHED BY PACIFIC JOURNAL OF MATHEMATICS, A NON-PROFIT CORPORATION Printed at Kokusai Bunken Insatsusha (International Academic Printing Co., Ltd.), 7-17, Fujimi 2-chome, Chiyoda-ku, Tokyo, Japan.