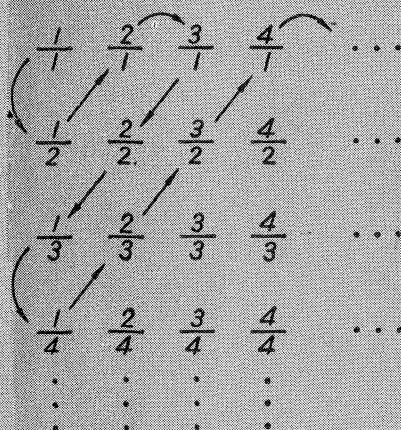


Pacific Journal of Mathematics

CONTENTS

- R. G. Buschman, *A substitution theorem for the Laplace transformation and its generalization to transformations with symmetric kernel*.....1529
- S. D. Conte, *Numerical solution of vibration problems in two space variables*1535
- Paul Dedecker, *A property of differential forms in the calculus of variations*1545
- H. Delange and H. Halberstam, *A note on additive functions*.1551
- J. L. Ericksen, *Characteristic direction for equations of motion of non-newtonian fluids*1557
- Avner Friedman, *On two theorems of Phragmén-Lindelöf for linear elliptic and parabolic differential equations of the second order*.....1563
- R. K. Gettoor, *Additive functionals of a Markov process*1577
- U. C. Guha, (γ, k) -Summability of series1593
- Alvin Hausner, *The tauberian theorem for group algebras of vector-valued functions*1603
- L. J. Heider, *T-sets and abstract (L)-spaces*.....1611
- Melvin Henriksen, *Some remarks on a paper of Aronszajn and Panitchpakdi*1619
- H. M. Lieberstein, *On the generalized radiation problem of A. Weinstein*1623
- Robert Osserman, *On the inequality $\Delta u \geq f(u)$*1641
- C. R. Putnam, *On semi-normal operators*.....1649
- Binyamin Schwarz, *Bounds for the principal frequency of the nonhomogeneous membrane and for the generalized dirichlet integral*.....1653
- E. Silverman, *Morrey's representation theorem for surfaces in metric spaces*1677
- V. N. Singh, *Certain generalized hypergeometric identities of the Rogers-Ramanujan type (II)*1691
- R. J. Smith, *A determinant in continuous rings*1701
- Drury W. Wall, *Sub-quasigroups of finite quasigroups*1711
- Sadayuki Yamamuro, *Monotone completeness of normed semi-ordered linear spaces*1715



PACIFIC JOURNAL OF MATHEMATICS

EDITORS

H. L. ROYDEN
Stanford University
Stanford, California

R. A. BEAUMONT
University of Washington
Seattle 5, Washington

A. L. WHITEMAN
University of Southern California
Los Angeles 7, California

E. G. STRAUS
University of California
Los Angeles 24, California

ASSOCIATE EDITORS

E. F. BECKENBACH
C. E. BURGESS
M. HALL
E. HEWITT

A. HORN
V. GANAPATHY IYER
R. D. JAMES
M. S. KNEBELMAN

L. NACHBIN
I. NIVEN
T. G. OSTROM
M. M. SCHIFFER

G. SZEKERES
F. WOLF
K. YOSIDA

SUPPORTING INSTITUTIONS

UNIVERSITY OF BRITISH COLUMBIA
CALIFORNIA INSTITUTE OF TECHNOLOGY
UNIVERSITY OF CALIFORNIA
MONTANA STATE UNIVERSITY
UNIVERSITY OF NEVADA
OREGON STATE COLLEGE
UNIVERSITY OF OREGON
UNIVERSITY OF SOUTHERN CALIFORNIA

STANFORD UNIVERSITY
UNIVERSITY OF UTAH
WASHINGTON STATE COLLEGE
UNIVERSITY OF WASHINGTON
* * *

AMERICAN MATHEMATICAL SOCIETY
CALIFORNIA RESEARCH CORPORATION
HUGHES AIRCRAFT COMPANY
THE RAMO-WOOLDRIDGE CORPORATION

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 of the editors. All other communications to the editors should be addressed to the managing editor, E. G. Straus 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. The price per volume (4 numbers) is \$12.00; single issues, \$3.50. Back numbers are available. Special price to individual faculty members of supporting institutions and to individual members of the American Mathematical Society: \$4.00 per volume; single issues, \$1.25.

Subscriptions, orders for back numbers, and changes of address should be sent to Pacific Journal of Mathematics, 2120 Oxford Street, Berkeley 4, California.

Printed at Kokusai Bunken Insatsusha (International Academic Printing Co., Ltd.), No. 10, 1-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.