Published quarterly in January, April, July, and October by the National Academy of Sciences—
National Research Council, Prince and Lemon Sts., Lancaster, Pa., and Washington, D. C.
Entered as second-class matter July 29, 1943, at the post office at Lancaster, Pennsylvania, under
the Act of August 24, 1912.

Editorial Committee
Division of Mathematics
National Academy of Sciences—National Research Council
Washington, D. C.

C. B. Tompkins, Chairman, University of California, Los Angeles, California
C. C. Craig, University of Michigan, Ann Arbor, Michigan
Alan Fletcher, University of Liverpool, Liverpool 3, England
Eugene Isaacson, Institute of Mathematical Sciences, New York University,
New York 3, New York
C. V. L. Smith, Ballistic Research Labs., Aberdeen Proving Ground, Aberdeen,
Maryland
A. H. Taub, University of Illinois, Urbana, Illinois

Information to Subscribers
The journal is published quarterly in one volume per year with issues numbered
serially since Volume I, Number 1. Subscriptions are $5.00 per year, single
copies $1.50. Back issues are available as follows:

Volume I (1943–1945), Nos. 10 and 12 only are available; $1.00 per issue.
Volume II (1946–1947), Nos. 13, 14, 17, 18, 19, and 20 only are available;
$1.00 per issue
Volume III (1948–1949), Nos. 21–28 available; $4.00 per year (four issues),
$1.25 per issue
Volume IV (1950 and following), all issues available; $5.00 per year, $1.50
per issue

All payments are to be made to the National Academy of Sciences and for-
warded to the Publications Office, 2101 Constitution Avenue, Washington, D. C.
Agents for Great Britain and Ireland: Scientific Computing Service, Ltd.,
23 Bedford Square, London W.C.1

Microcard Edition
Volumes I–X (1943–1956), Nos. 1–56 are now available on Microcards and may
be purchased from The Microcard Foundation, Box 2145, Madison 5, Wisconsin,
at a cost of $20.00 for the complete set. Future volumes will be available on
Microcards in the year following original publication.

Information to Contributors
All contributions intended for publication in Mathematical Tables and Other
Aids to Computation and all books for review should be addressed to C. B.
Tompkins, Department of Mathematics. University of California, Los Angeles 24,
California. The author should mention the name of an appropriate editor for
his paper if this is convenient.
CLASSIFICATION OF TABLES

A. Arithmetical Tables. Mathematical Constants
B. Powers
C. Logarithms
D. Circular Functions
E. Hyperbolic and Exponential Functions
F. Theory of Numbers
G. Higher Algebra
H. Numerical Solution of Equations
I. Finite Differences. Interpolation
J. Summation of Series
K. Statistics
L. Higher Mathematical Functions
M. Integrals
N. Interest and Investment
O. Actuarial Science
P. Engineering
Q. Astronomy
R. Geodesy
S. Physics, Geophysics, Crystallography
T. Chemistry
U. Navigation
V. Aerodynamics, Hydrodynamics, Ballistics
W. Economics and Social Sciences
X. Numerical Analysis and Applied Mathematics
Z. Calculating Machines and Mechanical Computation
CONTENTS

January 1958

Coefficients and Roots of the Polynomials which Define the Derivatives of the Exponential of \(-e/T\) .................................................. Edwin S. Campbell, E. M. Fischbach, & J. O. Hirschfelder 1
Bessel Functions for Large Arguments .......... M. Goldstein & R. M. Thaler 18
Numerical Experiments in Potential Theory Using the Nehari Estimates ....... U. W. Hochstrasser 26
Approximate Relations between Series and Integrals ........ P. A. P. Moran 34
A Search for Analogues of the Mathieu Groups .......................................... E. I. Parker & Paul J. Nikolai 38
On the Accuracy of Implicit Difference Approximations to the Equation of Heat Flow .......................................................... Wolfgang Wasow 43
An Open Formula for the Numerical Integration of First Order Differential Equations (II) .......................................................... Herbert S. Wilf 55

TECHNICAL NOTES AND SHORT PAPERS ............................................. 58
Note on the Computation of the Zeros of Functions Satisfying a Second Order Differential Equation ........................................ D. J. Hofsommer 58
A New Mersenne Prime ................................................................. Hans Riesel 60

REVIEWS AND DESCRIPTIONS OF TABLES AND BOOKS .......................... 61

TABLE ERRATA ................................................................. 108

NOTES ................................................................. 108
Research Potential and Training in Mathematical Sciences ........................ 108