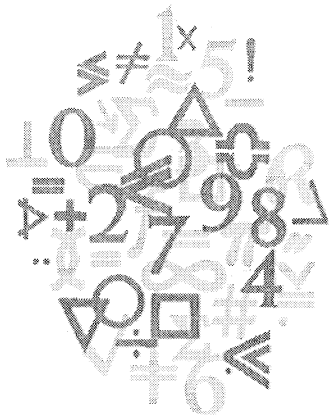


JOURNAL OF RECREATIONAL MATHEMATICS

Editors

Charles Ashbacher and Colin R J Singleton



DEVOTED TO THE LIGHTER SIDE OF MATHEMATICS.

Featuring thought-provoking, stimulating, and wit-sharpening games, puzzles, and articles that challenge the mental agility of everyone who enjoys the intricacies of mathematics.

Journal articles feature:

Number Phenomena

Alphametics

Chessboard Problems

Number Theory

Paper Folding

Puzzles

Games

Geometrical Phenomena

Biographies of Mathematicians

Book Reviews

Letters to the Editor

Symbolic Logic

AIMS & SCOPE

The Journal of Recreational Mathematics is intended to fulfill the need of those who desire a periodical uniquely devoted to the lighter side of mathematics. No special mathematical training is required. You will find such things as number curiosities and tricks, paper-folding creations, chess and checker brain-teasers, articles about mathematics and mathematicians, discussion of some higher mathematics and their applications to everyday life and to puzzle solving. You'll find some occasional word games and cryptography, a lot to do with magic squares, map coloring, geometric dissections, games with a mathematical flavor, and many other topics generally included in the fields of puzzles and recreational mathematics.

READERSHIP

Teachers will benefit from the *Journal* by getting a non-textbook look at mathematics—including some mathematics that they might not have thought about. Many teachers have found that abstract concepts encountered in formal classroom situations are often best clarified when approached in recreational form.

Students will find that there is more to mathematics than numbers and rules—there are puzzles, games, fascinating mathematical phenomena.

Join your fellow math enthusiasts and subscribe to this truly international *Journal* with both subscribers and contributors from over 25 countries throughout the world.

SUBSCRIPTION INFORMATION

Price per volume—4 issues yearly

Institutional Rate: \$138.00

Individual Rate: \$32.95

Postage & handling: \$9.00 U.S. & Canada;

\$16.50 elsewhere

Complimentary sample issue available upon request

BAYWOOD PUBLISHING COMPANY, INC.

26 Austin Avenue, PO Box 337, Amityville, NY 11701

Call (631) 691-1270 • Fax (631) 691-1770 • Toll-free orderline (800) 638-7819
e-mail: baywood@baywood.com • web site: <http://baywood.com>

T. Sasaki and M. Yoshida 321
A Geometric Study of the Hypergeometric Function with Imaginary Exponents

J. Abbott and T. Mulders 331
How Tight is Hadamard's Bound?

J. Vinson 337
Partial Sums of $\zeta(1/2)$ Modulo 1

A. Knutson 345
Descent-Cycling in Schubert Calculus

J. C. Lagarias 355
On the Normality of Arithmetical Constants

A. Hulpke 369
Representing Subgroups of Finitely Presented Groups by Quotient Subgroups

N. Dummigan 383
Symmetric Square L-Functions and Shafarevich-Tate Groups

A. Olvera 401
Estimation of the Amplitude of Resonance in the General Standard Map

S. M. Miller 419
Geodesic Knots in the Figure-Eight Knot Complement

J. Kigami, R. Strichartz and K. C. Walker 437
Constructing a Laplacian on the Diamond Fractal

B. Poonen 449
Computing Torsion Points on Curves

N. Elkies 467
Mordell-Weil Lattices in Characteristic 2, III: A Mordell-Weil Lattice of Rank 128

L. Kulesz and C. Stahlke 475
Elliptic Curves of High Rank with Nontrivial Torsion Group over \mathbb{Q}

Cover art: Many objects of analysis can be defined on certain fractals. The figure shows the graph of a harmonic function on the diamond fractal. See page 437.



A K PETERS, LTD
63 South Avenue
Natick, MA 01760
(508) 655-9933
www.akpeters.com

PRSR STD
US POSTAGE
PAID
WELLESLEY, MA
PERMIT # 50394