



The Fibonacci Quarterly

THE OFFICIAL JOURNAL OF THE FIBONACCI ASSOCIATION

TABLE OF CONTENTS

Hofstadter's Extraction Conjecture	<i>Russell Jay Hendel and Sandra A. Monteferrante</i>	98
An Unexpected Encounter with the Fibonacci Numbers	<i>M.N. Deshpande</i>	108
Addendum to "Second Derivative Sequences of Fibonacci and Lucas Polynomials"	<i>Piero Filipponi and Alwyn F. Horadam</i>	110
The Fibonacci and Lucas Triangles Modulo 2	<i>Diana L. Wells</i>	111
Modified Numerical Triangle and the Fibonacci Sequence	<i>Z. W. Trzaska</i>	124
Integration and Derivative Sequences for Pell and Pell-Lucas Polynomials	<i>A.F. Horadam, B. Swita, and P. Filipponi</i>	130
The Order of a Perfect k -Shuffle	<i>Robert W. Packard and Erik S. Packard</i>	136
Book Announcement: Generalized Pascal Triangles and Pyramids: Their Fractals, Graphs, and Applications	<i>by Dr. Boris A. Bondarenko</i>	144
On Some Properties of Fibonacci Diagonals in Pascal's Triangle	<i>Charles Cassidy and Bernard R. Hodgson</i>	145
Fifth International Conference Proceedings		152
On the Infinitude of Lucas Pseudoprimes	<i>Paul S. Bruckman</i>	153
Lucas Pseudoprimes are Odd	<i>Paul S. Bruckman</i>	155
On a Conjecture of Di Porto and Filipponi	<i>Paul S. Bruckman</i>	158
Extensions to the GCD Star of David Theorem	<i>Ed Korntved</i>	160
Author and Title Index for Sale		166
Fibonacci Numbers and a Chaotic Piecewise Linear Function	<i>J.S. Frame</i>	167
Generating Solutions for a Special Class of Diophantine Equations	<i>Pasquale J. Arpaia</i>	170
Sequences of Consecutive n -Niven Numbers	<i>H.G. Grundman</i>	174
A Bracket Function Transform and Its Inverse	<i>H.W. Gould</i>	176
Elementary Problems and Solutions	<i>Edited by Stanley Rabinowitz</i>	180
Advanced Problems and Solutions	<i>Edited by Raymond E. Whitney</i>	187

VOLUME 32

MAY 1994

NUMBER 2

PURPOSE

The primary function of **THE FIBONACCI QUARTERLY** is to serve as a focal point for widespread interest in the Fibonacci and related numbers, especially with respect to new results, research proposals, challenging problems, and innovative proofs of old ideas.

EDITORIAL POLICY

THE FIBONACCI QUARTERLY seeks articles that are intelligible yet stimulating to its readers, most of whom are university teachers and students. These articles should be lively and well motivated, with new ideas that develop enthusiasm for number sequences or the exploration of number facts. Illustrations and tables should be wisely used to clarify the ideas of the manuscript. Unanswered questions are encouraged, and a complete list of references is absolutely necessary.

SUBMITTING AN ARTICLE

Articles should be submitted in the format of the current issues of **THE FIBONACCI QUARTERLY**. They should be typewritten or reproduced typewritten copies, that are clearly readable, double spaced with wide margins and on only one side of the paper. The full name and address of the author must appear at the beginning of the paper directly under the title. Illustrations should be carefully drawn in India ink on separate sheets of bond paper or vellum, approximately twice the size they are to appear in print. Since the Fibonacci Association has adopted $F_1 = F_2 = 1$, $F_{n+1} = F_n + F_{n-1}$, $n \geq 2$ and $L_1 = 1$, $L_2 = 3$, $L_{n+1} = L_n + L_{n-1}$, $n \geq 2$ as the standard definitions for The Fibonacci and Lucas sequences, these definitions *should not* be a part of future papers. However, the notations *must* be used. One to three *complete* A.M.S. classification numbers *must* be given directly after references or on the bottom of the last page. Papers without classification numbers will be returned.

Two copies of the manuscript should be submitted to: **GERALD E. BERGUM, EDITOR, THE FIBONACCI QUARTERLY, DEPARTMENT OF COMPUTER SCIENCE, SOUTH DAKOTA STATE UNIVERSITY, BOX 2201, BROOKINGS, SD 57007-1596.**

Authors are encouraged to keep a copy of their manuscripts for their own files as protection against loss. The editor will give immediate acknowledgment of all manuscripts received.

SUBSCRIPTIONS, ADDRESS CHANGE, AND REPRINT INFORMATION

Address all subscription correspondence, including notification of address change, to: **RICHARD VINE, SUBSCRIPTION MANAGER, THE FIBONACCI ASSOCIATION, SANTA CLARA UNIVERSITY, SANTA CLARA, CA 95053.**

Requests for reprint permission should be directed to the editor. However, general permission is granted to members of The Fibonacci Association for noncommercial reproduction of a limited quantity of individual articles (in whole or in part) provided complete reference is made to the source.

Annual domestic Fibonacci Association membership dues, which include a subscription to **THE FIBONACCI QUARTERLY**, are \$35 for Regular Membership, \$40 for Library, \$45 for Sustaining Membership, and \$70 for Institutional Membership; foreign rates, which are based on international mailing rates, are somewhat higher than domestic rates; please write for details. **THE FIBONACCI QUARTERLY** is published each February, May, August and November.

All back issues of **THE FIBONACCI QUARTERLY** are available in microfilm or hard copy format from **UNIVERSITY MICROFILMS INTERNATIONAL, 300 NORTH ZEEB ROAD, DEPT. P.R., ANN ARBOR, MI 48106.** Reprints can also be purchased from **UMI CLEARING HOUSE** at the same address.

©1994 by

The Fibonacci Association

All rights reserved, including rights to this journal issue as a whole and, except where otherwise noted, rights to each individual contribution.

The Fibonacci Quarterly

*Founded in 1963 by Verner E. Hoggatt, Jr. (1921-1980)
and Br. Alfred Brousseau (1907-1988)*

*THE OFFICIAL JOURNAL OF THE FIBONACCI ASSOCIATION
DEVOTED TO THE STUDY
OF INTEGERS WITH SPECIAL PROPERTIES*

EDITOR

GERALD E. BERGUM, South Dakota State University, Brookings, SD 57007-1596

ASSISTANT EDITORS

MAXEY BROOKE, Sweeny, TX 77480
JOHN BURKE, Gonzaga University, Spokane, WA 99258
LEONARD CARLITZ, Duke University, Durham, NC 27706
HENRY W. GOULD, West Virginia University, Morgantown, WV 26506
A.P. HILLMAN, University of New Mexico, Albuquerque, NM 87131
A.F. HORADAM, University of New England, Armidale, N.S.W. 2351, Australia
CLARK KIMBERLING, University of Evansville, Evansville, IN 47722
DAVID A. KLARNER, University of Nebraska, Lincoln, NE 68588
RICHARD MOLLIN, University of Calgary, Calgary T2N 1N4, Alberta, Canada
GARY L. MULLEN, The Pennsylvania State University, University Park, PA 16802
SAMIH OBAID, San Jose State University, San Jose, CA 95192
NEVILLE ROBBINS, San Francisco State University, San Francisco, CA 94132
DONALD W. ROBINSON, Brigham Young University, Provo, UT 84602
LAWRENCE SOMER, Catholic University of America, Washington, D.C. 20064
M.N.S. SWAMY, Concordia University, Montreal H3G 1M8, Quebec, Canada
D.E. THORO, San Jose State University, San Jose, CA 95192
ROBERT F. TICHY, Technical University, Graz, Austria
WILLIAM WEBB, Washington State University, Pullman, WA 99164-2930

BOARD OF DIRECTORS THE FIBONACCI ASSOCIATION

CALVIN LONG (President)
Washington State University, Pullman, WA 99164-2930
G.L. ALEXANDERSON
Santa Clara University, Santa Clara, CA 95053
ANDREW GRANVILLE
University of Georgia, Athens, GA 30601-3024
PETER HAGIS, JR.
Temple University, Philadelphia, PA 19122
FRED T. HOWARD
Wake Forest University, Winston-Salem, NC 27109
MARJORIE JOHNSON (Secretary-Treasurer)
665 Fairlane Avenue, Santa Clara, CA 95051
LESTER LANGE
San Jose State University, San Jose, CA 95192
JEFF LAGARIAS
Bell Laboratories, Murray Hill, NJ 07974
THERESA VAUGHAN
University of North Carolina, Greensboro, NC 27412