

The Fibonacci Quarterly

THE OFFICIAL JOURNAL OF
THE FIBONACCI ASSOCIATION



VOLUME 17

NUMBER 1

CONTENTS

Pythagorean Triples Containing Fibonacci Numbers: Solutions for $F_n^2 \pm F_k^2 = K^2$	<i>Marjorie Bicknell-Johnson</i>	1
Strong Divisibility Sequences and Some Conjectures	<i>Clark Kimberling</i>	13
Greatest Common Divisors of Sums and Differences of Fibonacci, Lucas, and Chebyshev Polynomials	<i>Clark Kimberling</i>	18
Probability via the N th Order Fibonacci- T Sequence	<i>Stephen John Turner</i>	23
Some Congruences Involving Generalized Fibonacci Numbers	<i>Charles R. Wall</i>	29
Enumeration of Truncated Latin Rectangles	<i>F. W. Light, Jr.</i>	34
The Normal Modes of a Hanging Oscillator of Order N	<i>John Boardman</i>	37
Congruences for Certain Fibonacci Numbers	<i>Norvald Midttun</i>	40
Some Divisibility Properties of Generalized Fibonacci Sequences	<i>Paul S. Bruckman</i>	42
A Note on a Pell-Type Sequence	<i>William J. O'Donnell</i>	49
Periods and Entry Points in Fibonacci Sequence	<i>A. Allard and P. Lecomte</i>	51
Generating Functions of Central Values in Generalized Pascal Triangles	<i>Claudia Smith and Verner E. Hoggatt, Jr.</i>	58
Solution of $\binom{y+1}{x} = \binom{y}{x+1}$ in Terms of Fibonacci Numbers	<i>James C. Owings, Jr.</i>	67
The Diophantine Equation $Nb^2 = a^2 + N + 1$	<i>David A. Anderson and Milton W. Loyer</i>	69
Matrix Generators of Pell Sequences	<i>Joseph Ercolano</i>	71
Two Theorems Concerning Hexagonal Numbers ..	<i>William J. O'Donnell</i>	77
Some Sequences Like Fibonacci's ..	<i>B. H. Neumann and L. G. Wilson</i>	80
Nearly Linear Functions ...	<i>V. E. Hoggatt, Jr., and A. P. Hillman</i>	84
Elementary Problems and Solutions	<i>Edited by A. P. Hillman</i>	90
Advanced Problems and Solutions	<i>Edited by Raymond E. Whitney</i>	94

FEBRUARY

1979

The Fibonacci Quarterly

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

EDITOR

Verner E. Hoggatt, Jr.

CO-EDITOR

Gerald E. Bergum

EDITORIAL BOARD

H. L. Alder
Marjorie Bicknell-Johnson
Paul F. Byrd
L. Carlitz
H. W. Gould
A. P. Hillman

David A. Klarner
Leonard Klosinski
Donald E. Knuth
C. T. Long
M. N. S. Swamy
D. E. Thoro

WITH THE COOPERATION OF

Maxey Brooke
Bro. A. Brousseau
Calvin D. Crabill
T. A. Dabis
A. F. Horadam
Dov Jarden
L. H. Lange

James Maxwell
Sister M. DeSales
McNabb
John Mitchem
D. W. Robinson
Lloyd Walker
Charles H. Wall

The California Mathematics Council

All subscription correspondence should be addressed to Prof. Leonard Klosinski, Mathematics Department, University of Santa Clara, Santa Clara, California 95053. All checks (\$15.00 per year) should be made out to the Fibonacci Association or Fibonacci Quarterly. Two copies of manuscripts intended for publication in the *Quarterly* should be sent to Verner E. Hoggatt, Jr., Mathematics Department, San Jose State University, San Jose, California 95192. *All manuscripts should be typed, double-spaced. Drawings should be made the same size as they will appear in the Quarterly, and should be drawn in India ink on either vellum or bond paper. Authors should keep a copy of the manuscripts sent to the editors.*

The *Quarterly* is entered as 3rd-class mail at the University of Santa Clara Post Office, Calif., as an official publication of The Fibonacci Association.

The *Fibonacci Quarterly* is published in February, April, October, and December each year.