

✓ 11/11/11

# THE FIBONACCI QUARTERLY

THE OFFICIAL JOURNAL OF  
THE FIBONACCI ASSOCIATION



VOLUME 10

NUMBER 6

## CONTENTS

### PART I — ADVANCED

A Simple Optimal Control Sequence in Terms of Fibonacci Numbers . . . . .	<i>I. McCausland</i>	561
A Proof of Gould's Pascal Hexagon Conjecture . . . . .	<i>A. P. Hillman and V. E. Hoggatt, Jr.</i>	565
A Constructive Uniqueness Theorem on Representing Integers . . . . .	<i>János Galambos</i>	569
Generating Identities for Fibonacci and Lucas Triples . . . . .	<i>Rodney T. Hansen</i>	571
A New Greatest Common Divisor Property of the Binomial Coefficients . . . . .	<i>H. W. Gould</i>	579
Linear Difference Equations and Generalized Continuants Part I: Algebraic Developments . . . . .	<i>L. R. Shenton</i>	585
Triangular Arrays Subject to MacMahon's Conditions . . . . .	<i>L. Carlitz and D. P. Roselle</i>	591
Convolution Triangles . . . . .	<i>Verner E. Hoggatt, Jr., and Marjorie Bicknell</i>	599
A Counting Function of Integral n-Tuples . . . . .	<i>Hwa S. Hahn</i>	609
Some Combinatorial Identities of Bruckman — A Systematic Treatment with Relation to the Older Literature . . . . .	<i>H. W. Gould</i>	613
Advanced Problems and Solutions . . . . .	<i>Edited by Raymond E. Whitney</i>	629

### PART II — ELEMENTARY

A Primer for the Fibonacci Numbers Part X: On the Representation of Integers . . . . .	<i>Brother Alfred Brousseau</i>	635
Fibonacci Drainage Patterns . . . . .	<i>W. E. Sharp</i>	643
More About Magic Squares Consisting of Different Primes . . . . .	<i>Edgar Karst</i>	651
A Note on the Number of Fibonacci Sequences . . . . .	<i>Brother Alfred Brousseau</i>	657
Fibonacci Numbers in Physics . . . . .	<i>Basil Davis</i>	659
An Old Fibonacci Formula and Stopping Rules . . . . .	<i>Reuven Peleg</i>	661
Elementary Problems and Solutions. . . . .	<i>Edited by A. P. Hillman</i>	663
Volume Index . . . . .		667

DECEMBER

1972

# THE FIBONACCI QUARTERLY

*THE OFFICIAL JOURNAL OF THE FIBONACCI ASSOCIATION*

*DEVOTED TO THE STUDY  
OF INTEGERS WITH SPECIAL PROPERTIES*

## *EDITORIAL BOARD*

H. L. Alder  
Marjorie Bicknell  
John L. Brown, Jr.  
Brother A. Brousseau  
L. Carlitz  
H. W. Eves  
H. W. Gould

A. P. Hillman  
V. E. Hoggatt, Jr.  
Donald E. Knuth  
D. A. Lind  
C. T. Long  
M. N. S. Swamy  
D. E. Thoro

## *WITH THE COOPERATION OF*

Terry Brennan  
Maxey Brooke  
Paul F. Byrd  
Calvin D. Crabill  
T. A. Davis  
John H. Halton  
A. F. Horadam  
Dov Jarden  
Stephen Jerbic

L. H. Lange  
James Maxwell  
Sister M. Desales McNabb  
Gerald Preston  
D. W. Robinson  
Azriel Rosenfeld  
Lloyd Walker  
Charles H. Wall

The California Mathematics Council

All subscription correspondence should be addressed to Brother Alfred Brousseau, St. Mary's College, California. All checks (\$6.00 per year) should be made out to the Fibonacci Association or the 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. All manuscripts should be typed, double-spaced. Drawings should be made the same size as they will appear in the Quarterly, and should be done in India ink on either vellum or bond paper. Authors should keep a copy of the manuscript sent to the editors.

The Quarterly is entered as third-class mail at the St. Mary's College Post Office, Calif., as an official publication of the Fibonacci Association.