



# Fibonacci and Lucas Numbers with Applications, Volume II

Thomas Koshy

E-Book	978-1-118-74218-1	December 2018	<b>\$100.99</b>
Hardcover	978-1-118-74208-2	January 2019	<b>\$125.00</b>

## DESCRIPTION

Volume II provides an advanced approach to the extended fibonacci family, which includes Fibonacci, Lucas, Pell, Pell-Lucas, Jacobsthal, Jacobsthal-Lucas, Vieta, Vieta-Lucas, and Chebyshev polynomials of both kinds. This volume offers a uniquely unified, extensive, and historical approach that will appeal to both students and professional mathematicians.

As in Volume I, Volume II focuses on problem-solving techniques such as pattern recognition; conjecturing; proof-techniques, and applications. It offers a wealth of delightful opportunities to explore and experiment, as well as plentiful material for group discussions, seminars, presentations, and collaboration.

In addition, the material covered in this book promotes intellectual curiosity, creativity, and ingenuity.

Volume II features:

- A wealth of examples, applications, and exercises of varying degrees of difficulty and sophistication.
- Numerous combinatorial and graph-theoretic proofs and techniques.
- A uniquely thorough discussion of fibonacci subfamilies, and the fascinating relationships that link them.
- Examples of the beauty, power, and ubiquity of the extended fibonacci family.

- An introduction to tribonacci polynomials and numbers, and their combinatorial and graph-theoretic models.
- Abbreviated solutions provided for all odd-numbered exercises.
- Extensive references for further study.

This volume will be a valuable resource for upper-level undergraduates and graduate students, as well as for independent study projects, undergraduate and graduate theses. It is the most comprehensive work available, a welcome addition for fibonacci enthusiasts in computer science, electrical engineering, and physics, as well as for creative and curious amateurs.

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## ABOUT THE AUTHOR

**Thomas Koshy, PhD**, is the author of eleven books and numerous articles. As a professor of Mathematics at Framingham State University in Framingham, Massachusetts, he received the Distinguished Service Award, Citation for Meritorious Service, Commonwealth Citation for Outstanding Performance, as well as Faculty of the Year. He received his PhD in Algebraic Coding Theory from Boston University, under the guidance of Dr. Edwin Weiss.

"Dr. Koshy is a meticulous researcher who shares his encyclopedic knowledge regarding Fibonacci and Lucas numbers in *Fibonacci and Lucas Numbers, Volume I*. In *Volume II*, he extends all of those wonderful ideas and identities to the Gibonacci polynomials, the "grandfathers" of the Fibonacci and Lucas polynomials. Writing in a readable style and including many examples and exercises, Koshy ties together Fibonacci and Lucas polynomials with Chebyshev, Jacobsthal, and Vieta polynomials. Once again, Koshy has compiled lore from diverse sources into one understandable and intriguing volume." **Marjorie Bicknell Johnson**

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