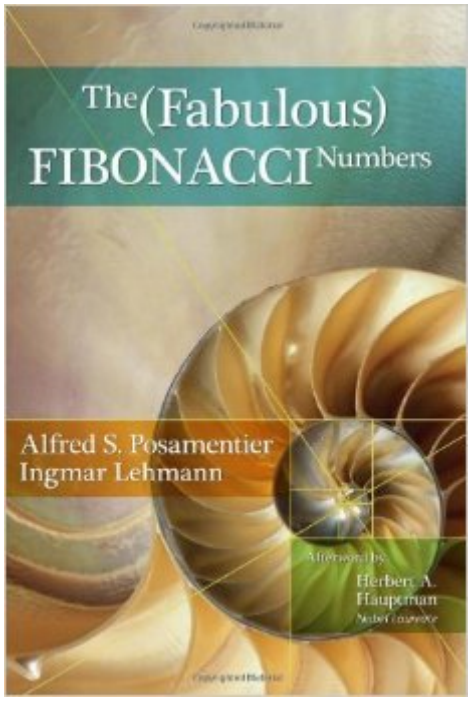
The Fabulous Fibonacci Numbers



Synopsis

The most ubiquitous, and perhaps the most intriguing, number pattern in mathematics is the Fibonacci sequence. In this simple pattern beginning with two ones, each succeeding number is the sum of the two numbers immediately preceding it (1, 1, 2, 3, 5, 8, 13, 21, ad infinitum). Far from being just a curiosity, this sequence recurs in structures found throughout nature - from the arrangement of whorls on a pinecone to the branches of certain plant stems. All of which is astounding evidence for the deep mathematical basis of the natural world. With admirable clarity, two veteran math educators take us on a fascinating tour of the many ramifications of the Fibonacci numbers. They begin with a brief history of a distinguished Italian discoverer, who, among other accomplishments, was responsible for popularizing the use of Arabic numerals in the West. Turning to botany, the authors demonstrate, through illustrative diagrams, the unbelievable connections between Fibonacci numbers and natural forms (pineapples, sunflowers, and daisies are just a few examples). In art, architecture, the stock market, and other areas of society and culture, they point out numerous examples of the Fibonacci sequence as well as its derivative, the "golden ratio." And of course in mathematics, as the authors amply demonstrate, there are almost boundless applications in probability, number theory, geometry, algebra, and Pascal’s triangle, to name a few.Accessible and appealing to even the most math-phobic individual, this fun and enlightening book allows the reader to appreciate the elegance of mathematics and its amazing applications in both natural and cultural settings.Â Â

Book Information

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Customer Reviews

This is a beautifully produced book. The front jacket is amongst the most attractive I have seen and the back cover is dense with quotations from reviews singing its praises, including one from a Nobel Laureate. Oh dear, how we can be deceived by outside appearances! The text contains so many errors, misleading statements and moments of such stupidity that to discuss them all would require a volume about equal in size to the original.Let me take you through a few examples: -Page 21. 41/12 is neither a square number nor an integer as claimed in the text.Page 22. There is no contradiction in Fibonacci stating that the problem under discussion is indeterminate and for him then to give a (correct) solution to it.Page 33. The proof of Property 2 given in appendix B is a proof by contradiction, not a proof by induction as stated.Page 34. Many of the factors listed in Figure 1-9 are wrong. See, for example, the factors given for the sixth Fibonacci number.Page 40. Figure 1-11 is confusing. What is the rectangle on the RHS supposed to indicate?Page 48, Figures 1-14 and 1-15. Contrary to their captions, both would seem to contain an odd number of rectangles.Page 49. Line 7 and line 18 are identical, lines 8 and 19, to which each is supposed to be equal, are not equal.Page 49. Line 20. 1156 does not equal 342, and 342 is not the 29th Fibonacci number.Page 51, last line but one. 520 is not the product of 18 and 29.Page 56. The written summary of property 13 is wrong.Page 80. Footnote should read `fourth difference', not `third difference'.Page 82. Why express amazement that, in a table of differences for the Fibonacci sequence, each new line of differences repeats the original sequence.

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