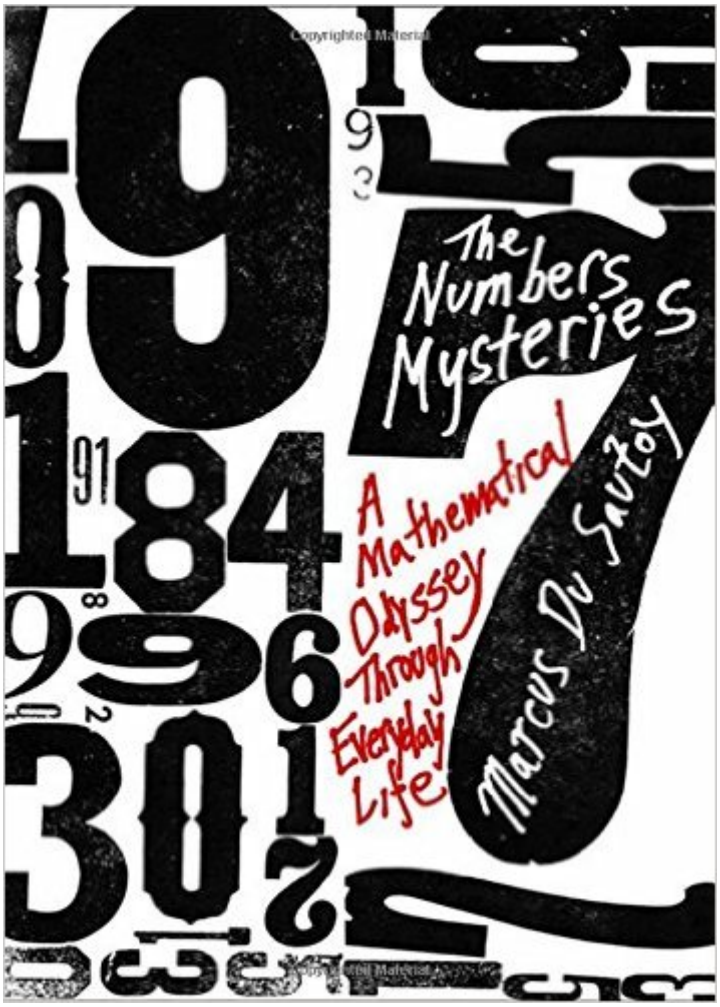
The Number Mysteries: A Mathematical Odyssey Through Everyday Life (MacSci)



Synopsis

Every time we download music, take a flight across the Atlantic or talk on our cell phones, we are relying on great mathematical inventions. In The Number Mysteries, one of our generation's foremost mathematicians Marcus du Sautoy offers a playful and accessible examination of numbers and how, despite efforts of the greatest minds, the most fundamental puzzles of nature remain unsolved. Du Sautoy tells about the quest to predict the futureâ •from the flight of asteroids to an impending storm, from bending a ball like Beckham to forecasting population growth. He brings to life the beauty behind five mathematical puzzles that have contributed to our understanding of the world around us and have helped develop the technology to cope with it. With loads of games to play and puzzles to solve, this is a math book for everyone.

Book Information

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Customer Reviews

I have previously read and reviewed Rob Eastaway's books Why Do Buses Come in Threes? and How Long Is a Piece of String? on The hidden mathematics of everyday life, but although I've been aware of Marcus Du Sautoy's books for some time, this is the first I've actually bought and read. While his approach is different from Rob's, Marcus also has a way of explaining mathematics such that it can appeal to the wider public. The book is divided into five chapters, the basic themes being prime numbers, geometric shapes, winning streaks, coded information and predicting the future.Perhaps the most amusing subject in the first chapter is the life-cycle of cicadas, which are apparently 7, 13 or 17 years in duration, depending on the species. The author suggests this cycle

using one of three prime numbers may be a way of discouraging predators, but as he`s a mathematician rather than a biologist, I won`t assume that although it sounds plausible.Sometimes the author strays from the chapter heading but that's no problem. For example, the first chapter discusses Fibonacci numbers (and the inevitable example of breeding rabbits) as well as prime numbers. Another off-topic digression that I found interesting was the author's discussion of the early number systems developed by ancient civilizations.The chapter on geometric shapes is another fascinating chapter, discussing the shapes of footballs, teabags, snowflakes, coastlines, viruses and abstract paintings among other things.

Marcus du Sautoy is a professor of mathematics at the University of Oxford. He also has appeared on television programs presenting mathematical subjects for general lay audiences. In THE NUMBER MYSTERIES du Sautoy tries to do much the same thing - to show a general lay audience how mathematics underlies or explains much of everyday life: from the number of petals on a flower, to dragon noodles, to the construction of soccer balls, to three-dimensional teabags, to the Beijing Olympic Swimming Center, to roulette wheels, to Sudoku, to the Mayan calendar, to the ISBN code number for this book and all others published since about 1970. Along the way, he discusses such mathematical concepts as perfect numbers, Fibonacci numbers, fractals, and prime number codes.Du Sautoy is enthusiastic and obviously knowledgeable. His writing style is relatively informal and, for the most part, comprehensible by the moderately intelligent and interested layperson. But I sense that the audience for THE NUMBER MYSTERIES is somewhat limited. The book surely is too simple or superficial for those who already have a strong background in mathematics. As for those with little or no interest in mathematics, I doubt that the book will kindle one. So it appears that its audience will be primarily those who once were charmed by the rigor and mystery of mathematics but who have lost touch with the discipline - and rather regret that development of life.I count myself in that group, so I like reading a book like this every few years. Among its ilk, I found THE NUMBER MYSTERIES to be in the middle of the pack. One complaint I have is that the book does not include, for those who are intrigued by one or more of the mathematical concepts mentioned in it, references for further, more in-depth study.

I really enjoy popular science and math books in general, and I'm enjoying this one in particular. My criticism though is that Du Sautoy is not a master of language or explanation; he's only pretty good. I'll give two examples:1) Foam. Du Sautoy starts talking about foam in his section on the geometry of bubbles, and tells us that foam is a thorny mathematical problem, but he never tells us what foam

is exactly. I read through about half of this section before I figured out what problem it was about foam that Du Sautoy was solving. A better writer would have made that clear from the beginning. This is the sentence Du Sautoy needed to write but didn't:"Foam is a trickier problem than the simple case of two bubbles sticking together because foam is made of thousands of bubbles of different sizes sticking together in one mass. Thus, on the inside of foam, all of the bubbles are plane-sided; no bubbles have a spherical portion. The problem of foam is figuring out what the precise three-dimensional shape of all those tiny bubbles inside foam is, because there must be one most efficient shape for plane-sided bubbles to take when they are packed together like that, i.e., one most efficient way for three dimensional solids to pack together perfectly. We know that nature will automatically form bubbles of whatever that efficient shape is, just like a bubble will take a perfectly spherical shape when it is on its own.

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