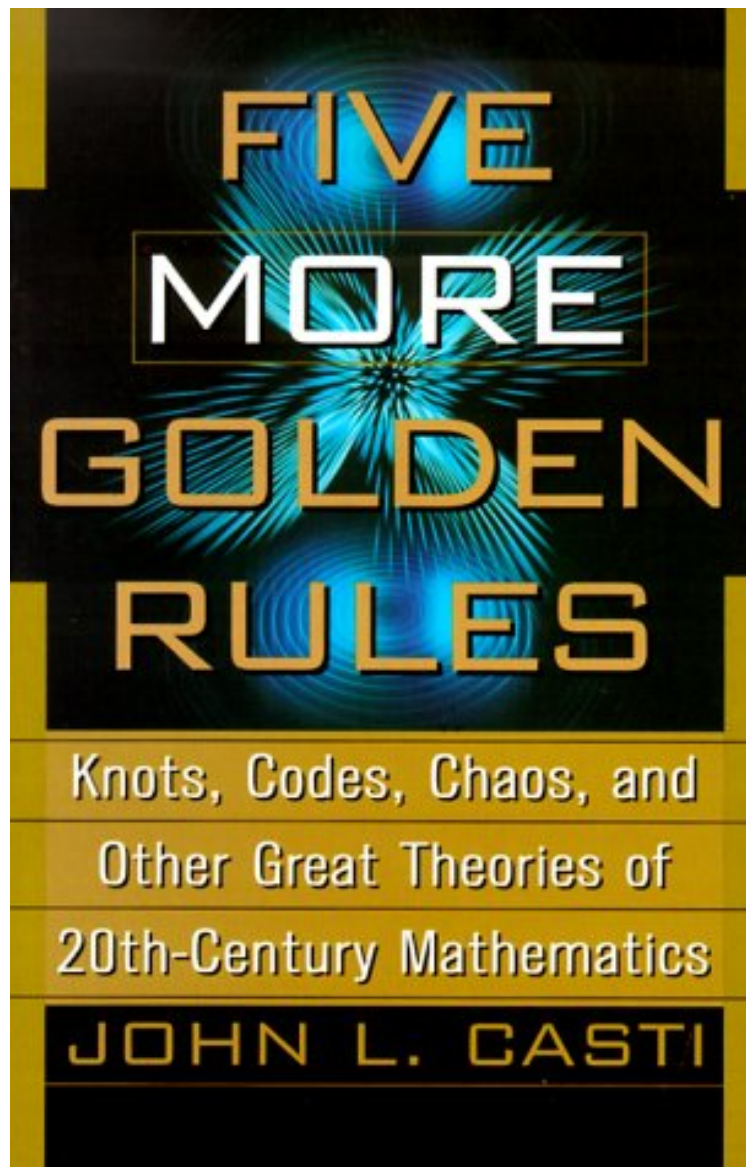


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## Five More Golden Rules: Knots, Codes, Chaos and Other Great Theories of 20th-Century Mathematics

*John Casti*

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**John Casti : Five More Golden Rules: Knots, Codes, Chaos and Other Great Theories of 20th-Century Mathematics** before purchasing it in order to gage whether or not it would be worth my time, and all praised Five More Golden Rules: Knots, Codes, Chaos and Other Great Theories of 20th-Century Mathematics:

14 of 14 people found the following review helpful. Understandable but not dumbed down  
By Kyle Maxwell  
Casti's text focuses on five key mathematical theories from the 20th century; this is actually somewhat misleading, since 4 of them are actually proved theorems. It's an interesting survey of applied mathematics; a number of sub-disciplines are covered here. He does an excellent job of bringing the math down to a reasonable level without dumbing it down. Most of the book can be understood with simple logic and algebra; truly understanding a few of the theorems (not just appreciating them) does take a little calculus. Knowing some more advanced math (like topology) helps, but a reasonably mathematically-inclined person with less formal education will be able to follow it just fine. I'd like to see more popular math books at this level; this is somewhere between the level of Paulos' series of books ("Innumeracy" et al) and an undergrad maths textbook. It's interesting to see a side of mathematics not often covered in high school maths courses. I really recommend this book to anyone with more than a passing interest in mathematics; it may even rejuvenate your interest to a more active level.

0 of 0 people found the following review helpful. Unique source for exposition on mathematics  
By randy patton  
Casti really knows his stuff and is able to convey the underpinnings and applications of 5 interesting and fundamental topics. Not for the casual reader but for someone with a love of mathematical concepts and not just glorified bookkeeping. Though apparently well reviewed and edited by colleagues, Casti's explanations and examples occasionally lack clarity and can cause confusion.

0 of 1 people found the following review helpful. golden rules is golden  
By D. H. Maxwell  
this book has a lot to offer. i have gone through it several times and even discussed the ideas with family.

"Casti is one of the great science writers." -San Francisco Examiner  
"Casti's gift is to be able to let the nonmathematical reader share in his understanding of the beauty of a good theory." -Christian Science Monitor  
Following up the acclaimed Five Golden Rules, another quintet of gleaming math discoveries  
With Five More Golden Rules, readers are treated to another fascinating set of theoretical gems from acclaimed popular science author John Casti. Injecting all-new ingredients into his trademark recipe of real-world examples, historical anecdotes, and straightforward explanations, Casti once again brings math to thrilling life. All who enjoyed the unique pleasures of the original will love this follow-up survey highlighting the creme de la creme of math in the last century. Explores how knot theory informs the classic tale of Alexander the Great and the Gordian Knot\* Considers how the Shannon Coding Theory applies to decoding the human genome  
John L. Casti, PhD (Santa Fe, NM), a resident member of the Santa Fe Institute, is a professor at the Technical University of Vienna and the author of *Would-Be Worlds* (Wiley) and *Cambridge Quintet*.

.com Bring more joy to your favorite math-head with *Five More Golden Rules* from science writer and national treasure John L. Casti. Though a quick glance through the book will cause an intense fight-or-flight response in the numerophobic, Casti's writing is lovely and lucid as ever, explaining not just equations and theorems but their significance in our lives. Having discovered in *Five Golden Rules* that he couldn't restrict himself to just five important 20th-century mathematical theories, this follow-up explores the intricacies of knot theory, functional analysis, control theory, chaotic systems, and information theory. Each of the five lively chapters introduces its subject with a seemingly unrelated anecdote that is (of course) informed by the theory in question. Then it's headlong into the wonderful details of postulation and demonstration that make math so much fun. Unlike a textbook, *Five More Golden Rules* meanders and breaks away from its proofs to discover relations between the symbols and the real world, from the stock market to the coastline of Norway. Besides giving the reader a break, this makes the abstract, almost ethereal concepts concrete and provides a definite advantage to the interested student. Perhaps textbook publishers should take note of this technique; until they do, we'll have to curl up with Casti's *Five More Golden Rules* if we want to have fun with our higher math. --Rob Lightner  
any reader with a nodding acquaintance with calculus should find the book interesting and informative -- *Mathematika* "...any reader with a nodding acquaintance with calculus should find the book interesting and informative..." (*Mathematika*)  
From the Inside Flap  
*Five More Golden Rules* How did the classic tale of Alexander the Great influence the principal problem facing knot theorists today? What effect did the exalted Kalman filter have on space travel? How did the Shannon Coding Theory make mapping human DNA possible? In this brilliantly conceived follow-up to the highly acclaimed *Five Golden Rules*, popular science author John Casti treats us to another exhilarating quintet of theoretical gems to answer these and other intriguing questions. Hailed as one of the great science writers of our time, Casti reveals the remarkable origins of some of the most monumental mathematical discoveries of the last century-and sheds light on how these revolutionary ideas have reshaped our lives. Like its critically acclaimed predecessor, *Five More Golden Rules* takes us on a fascinating journey to the frontiers of modern mathematics, infusing a sometimes intimidating subject with an infectious energy that brings it to thrilling life. Casti draws on such diverse sources as Paul Revere's plot to warn his fellow patriots of the advancing enemy; the celebrated British play *Art*; the Greek legend of Gordius and Alexander the Great; the work of nineteenth-century poet William Blake; and a make-believe treasure hunt through New York City's Central Park to illustrate the power and beauty of the five astonishing theories he illuminates. From explaining how knot theory is contributing to the development of new drugs to revealing how astronomers can predict planetary motions with the Hopf Bifurcation

Theorem and highlighting the importance of control theory to space travel, Casti offers an invigorating glimpse into the exciting world of twentieth-century mathematics and how these findings have helped unravel the secrets of the universe. This extraordinary account also introduces us to the legendary figures who made these mathematical contributions possible, including: \* James W. Alexander, one of the original Princeton Institute for Advanced Study faculty members who introduced the idea of associating a polynomial with a knot \* Claude Shannon, a communications engineer at Bell Telephone Laboratories who pioneered what we now call information theory \* Stefan Banach, one of the most prominent mathematicians of his time, whose Scottis Problem Book set the stage for functional analysis With a heady blend of real-life examples, historical anecdotes, and straightforward explanations that will captivate novices and experts alike, Casti probes the mystery and seductiveness of the engrossing tales that lie behind the breakthroughs. Laden with fascinating stories and information, Five More Golden Rules is a spellbinding chronicle that will dramatically transform the way you think.