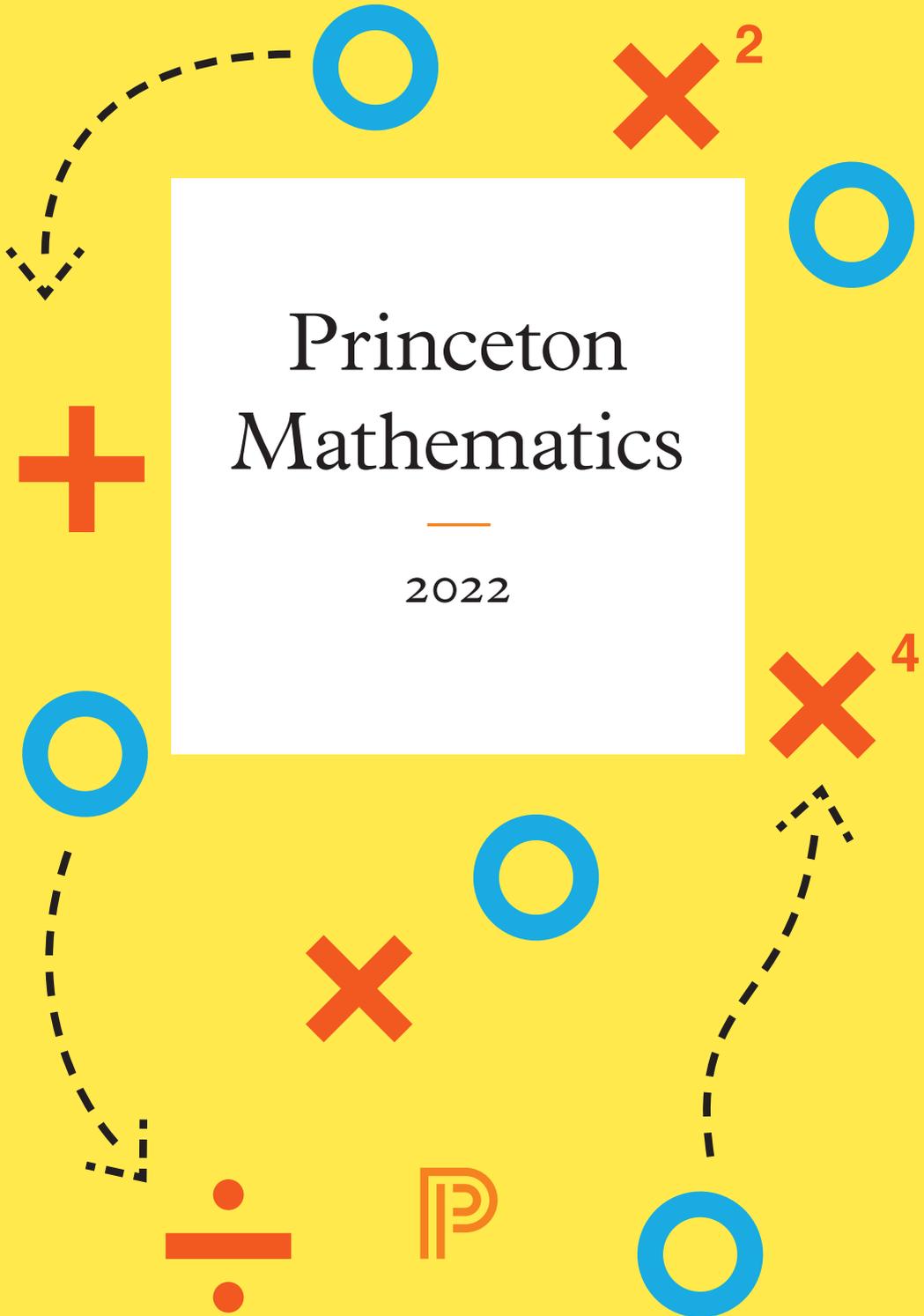


# Princeton Mathematics

—  
2022



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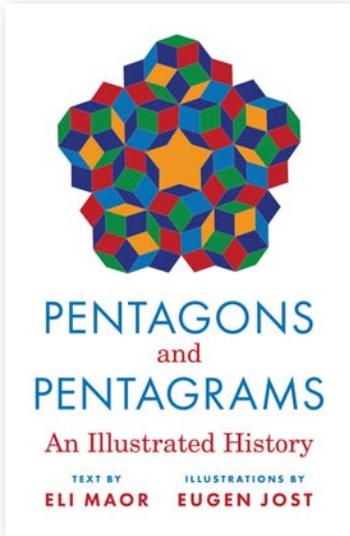
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“Eli Maor expertly weaves together the mathematics, history, and cultural uses of pentagons and pentagrams—shapes that have fascinated us for more than two millennia. Beautifully complemented by Eugen Jost’s illustrations, this book delights and informs.”

—Ian Stewart, author of *What’s the Use?: How Mathematics Shapes Everyday Life*

A fascinating exploration of the pentagon and its role in various cultures

## Pentagons and Pentagrams

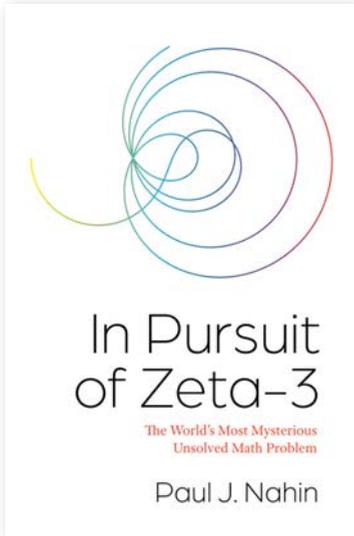
The pentagon and its close cousin, the pentagram, have inspired individuals for the last two and half millennia, from mathematicians and philosophers to artists and naturalists. Despite the pentagon’s wide-ranging history, no single book has explored the important role of this shape in various cultures, until now. Richly illustrated, *Pentagons and Pentagrams* offers a sweeping view of the five-sided polygon, revealing its intriguing geometric properties and its essential influence on a variety of fields.

Traversing time, Eli Maor narrates vivid stories, both celebrated and unknown, about the pentagon and pentagram. He discusses the early Pythagoreans, who ascribed to the pentagon mythical attributes, adopted it as their emblem, and figured out its construction with a straightedge and compass. Maor looks at how a San Diego housewife uncovered four previously unknown types of pentagonal tilings, and how in 1982 a scientist’s discovery of fivefold symmetries in certain alloys caused an uproar in crystallography and led to a Nobel Prize. Maor also discusses the pentagon’s impact on many buildings, from medieval fortresses to the Pentagon in Washington, D.C. Eugen Jost’s superb illustrations provide sumptuous visual context, and the book’s puzzles and mazes offer fun challenges for readers, with solutions given in an appendix.

**Eli Maor** is a former professor of the history of mathematics at Loyola University Chicago. His books include the internationally acclaimed *To Infinity and Beyond*, *e: The Story of a Number*, *The Pythagorean Theorem: A 4,000-Year History*, *Music by the Numbers*, and with Eugen Jost, *Beautiful Geometry* (all Princeton). **Eugen Jost** is a well-known Swiss artist whose work is strongly influenced by mathematics.

August 2022. 168 pages. 19 color + 85 b/w illus.

Hardback 9780691201122 \$24.95 | £20.00 ebook 9780691238555



“In this investigation of a mysterious unsolved problem in number theory, Paul Nahin expertly interweaves intriguing historical background with the mathematics, providing many well-constructed exercises for readers to puzzle over. Whether one is a calculus student, an engineer, or simply a lover of mathematics, this book will provide many hours of self-guided study and enjoyment.”

—Jennifer Beineke, coeditor of *The Mathematics of Various Entertaining Subjects*

An engrossing look at the history and importance of a centuries-old but still unanswered math problem

## In Pursuit of Zeta-3

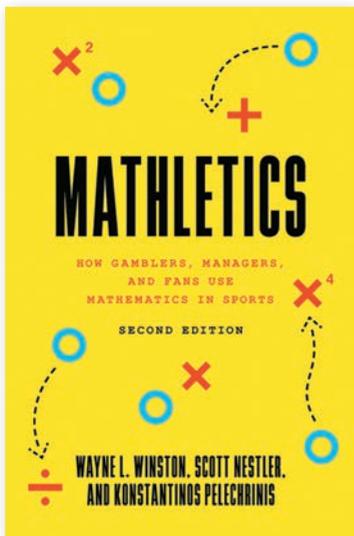
For centuries, mathematicians the world over have tried, and failed, to solve the zeta-3 problem. Math genius Leonhard Euler attempted it in the 1700s and came up short. The straightforward puzzle considers if there exists a simple symbolic formula for the following:  $1+(1/2)^3+(1/3)^3+(1/4)^3+\dots$ . But why is this issue—the sum of the reciprocals of the positive integers cubed—so important? With *In Pursuit of Zeta-3*, popular math writer Paul Nahin investigates the history and significance of this mathematical conundrum.

Drawing on detailed examples, historical anecdotes, and even occasionally poetry, Nahin sheds light on the richness of the nature of zeta-3. He shows its intimate connections to the Riemann hypothesis, another mathematical mystery that has stumped mathematicians for nearly two centuries. He looks at its links with Euler’s achievements and explores the modern research area of Euler sums, where zeta-3 occurs frequently. An exact solution to the zeta-3 question wouldn’t simply satisfy pure mathematical interest: it would have critical ramifications for applications in physics and engineering, such as quantum electrodynamics. Challenge problems with detailed solutions and *MATLAB* code are included at the end of each of the book’s sections.

Detailing the trials and tribulations of mathematicians who have approached one of the field’s great unsolved riddles, *In Pursuit of Zeta-3* will tantalize curious math enthusiasts everywhere.

**Paul J. Nahin** is the author of many popular math books, including *How to Fall Slower Than Gravity*, *Dr. Euler’s Fabulous Formula*, and *An Imaginary Tale* (all Princeton). He is professor emeritus of electrical engineering at the University of New Hampshire and received the 2017 Chandler Davis Prize for Excellence in Expository Writing in Mathematics. He lives in Exeter, New Hampshire.

2021. 344 pages. 23 b/w illus.  
Hardback 9780691206073 \$26.95 | £20.00 ebook 9780691227597



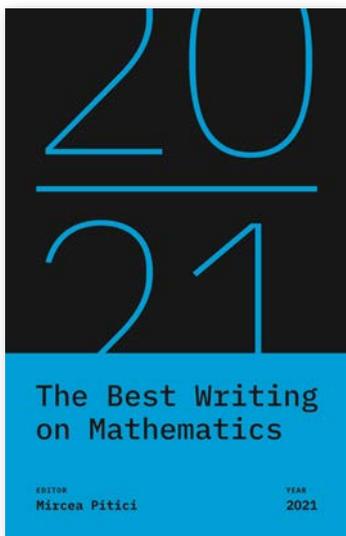
How to use math to improve performance and predict outcomes in professional sports

## Mathletics

*Mathletics* reveals the mathematical methods top coaches and managers use to evaluate players and improve team performance. This second edition features new data, new players and teams, and new chapters on soccer, e-sports, golf, volleyball, gambling Calcuttas, analysis of camera data, Bayesian inference, ridge regression, and other statistical techniques.

**Wayne L. Winston** is the John and Esther Reese Professor of Decision Sciences at Indiana University's Kelley School of Business. **Scott Nestler** is associate teaching professor at the University of Notre Dame's Mendoza College of Business. **Konstantinos Pelechrinis** is associate professor at the University of Pittsburgh's School of Computing and Information.

February 2022. 608 pages. 197 line illus. 55 tables.  
Paperback 9780691177625 \$24.95 | £20.00 ebook 9780691189291



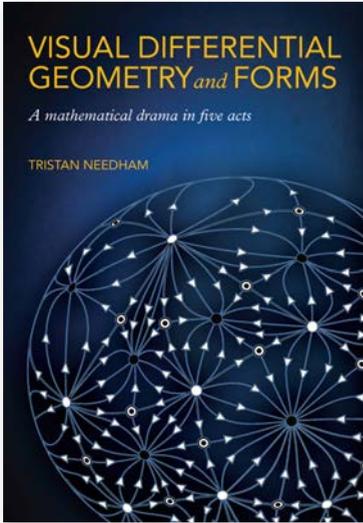
The year's finest mathematical writing from around the world

## The Best Writing on Mathematics 2021

This annual anthology brings together the year's finest mathematics writing from around the world—and you don't need to be a mathematician to enjoy the pieces collected here. These essays—from leading names and fresh new voices—delve into the history, philosophy, teaching, and everyday aspects of math, offering surprising insights into its nature, meaning, and practice, and taking readers behind the scenes of today's hottest mathematical debates.

**Mircea Pitici** teaches mathematics at Syracuse University and has edited *The Best Writing on Mathematics* since 2010.

March 2022. 320 pages. 16 color + 91 b/w illus.  
Paperback 9780691225708 \$24.95 | £20.00  
Hardback 9780691225715 \$85.00 | £66.00 ebook 9780691225722



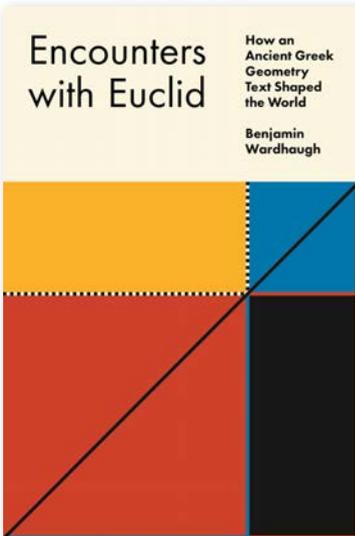
An inviting, intuitive, and visual exploration of differential geometry and forms

## Visual Differential Geometry and Forms

*Visual Differential Geometry and Forms* fulfills two principal goals. In the first four acts, Tristan Needham puts the geometry back into differential geometry. Using 235 hand-drawn diagrams, Needham deploys Newton's geometrical methods to provide geometrical explanations of the classical results. In the fifth act, he offers the first undergraduate introduction to differential forms that treats advanced topics in an intuitive and geometrical manner.

**Tristan Needham** is professor of mathematics at the University of San Francisco. He is the author of *Visual Complex Analysis*.

2021. 584 pages. 235 b/w illus.  
Paperback 9780691203706 \$45.00 | £35.00  
Hardback 9780691203690 \$125.00 | £98.00 ebook 9780691219899



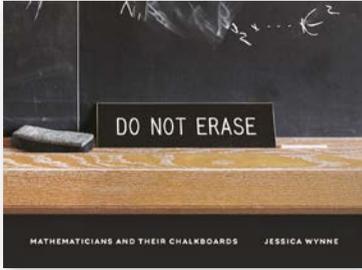
A sweeping cultural history of one of the most influential mathematical books ever written

## Encounters with Euclid

Euclid's *Elements of Geometry* is one of the fountainheads of mathematics—and of culture. Written around 300 BCE, it has traveled widely across the centuries, generating countless new ideas and inspiring such figures as Isaac Newton, Bertrand Russell, Abraham Lincoln, and Albert Einstein. *Encounters with Euclid* tells the story of this incomparable mathematical masterpiece, taking readers from its origins in the ancient world to its continuing influence today.

**Benjamin Wardhaugh** is a historian of mathematics.

2021. 416 pages. 34 b/w illus.  
Hardback 9780691211695 \$29.95 | £25.00 ebook 9780691219813  
For sale only in North America



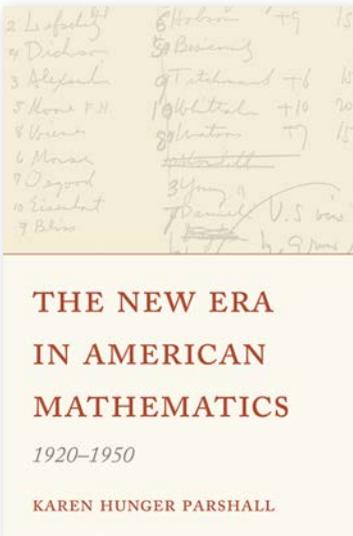
A photographic exploration of mathematicians' chalkboards

## Do Not Erase

“A mathematician, like a painter or poet, is a maker of patterns,” wrote the British mathematician G. H. Hardy. In *Do Not Erase*, photographer Jessica Wynne presents remarkable examples of this idea through images of mathematicians’ chalkboards. Wynne offers more than one hundred stunning photographs of these chalkboards, gathered from a diverse group of mathematicians around the world. The photographs are accompanied by essays from each mathematician, reflecting on their work and processes. Together, pictures and words provide an illuminating meditation on the unique relationships among mathematics, art, and creativity.

**Jessica Wynne** is associate professor of photography at the Fashion Institute of Technology.

2021. 240 pages. 110 color illus.  
 Hardback 9780691199221 \$35.00 | £28.00 ebook 9780691222820



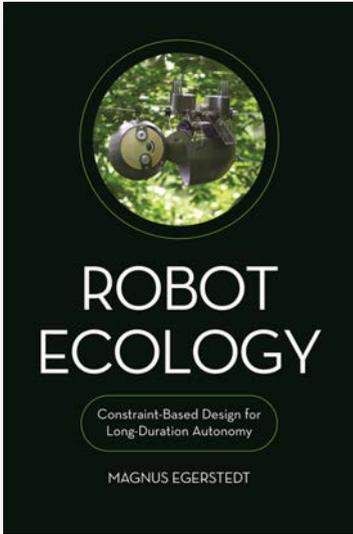
A meticulously history on the development of American mathematics in the three decades following World War I

## The New Era in American Mathematics, 1920–1950

As the Roaring Twenties lurched into the Great Depression, to be followed by the scourge of Nazi Germany and World War II, American mathematicians pursued their research, positioned themselves collectively within American science, and rose to global mathematical hegemony. How did they do it? *The New Era in American Mathematics, 1920–1950* explores the institutional, financial, social, and political forces that shaped and supported this community in the first half of the twentieth century.

**Karen Hunger Parshall** is the Commonwealth Professor of History and Mathematics at the University of Virginia.

February 2022. 640 pages. 38 b/w illus.  
 Paperback 9780691235240 \$49.95 | £40.00  
 Hardback 9780691197555 \$130.00 | £100.00 ebook 9780691233819



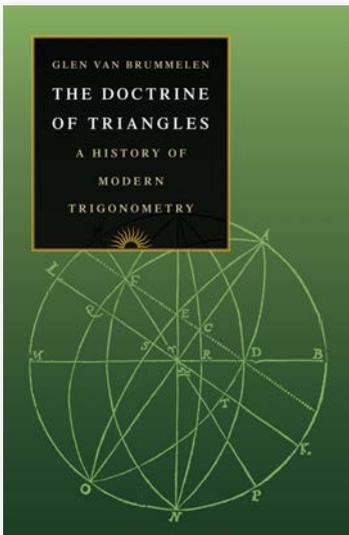
A new framework that draws on insights from ecology for the design and analysis of long-duration robots

## Robot Ecology

Robots are increasingly leaving the confines of laboratories, warehouses, and manufacturing facilities, venturing into agriculture and other settings where they must operate in uncertain conditions over long timescales. This multidisciplinary book draws on the principles of ecology to show how robots can take full advantage of the environments they inhabit, including as sources of energy.

**Magnus Egerstedt** is the Stacey Nicholas Dean of Engineering in the Samueli School of Engineering at the University of California, Irvine.

2021. 360 pages. 101 b/w illus. 2 tables.  
Hardback 9780691211688 \$75.00 | £58.00 ebook 9780691230078



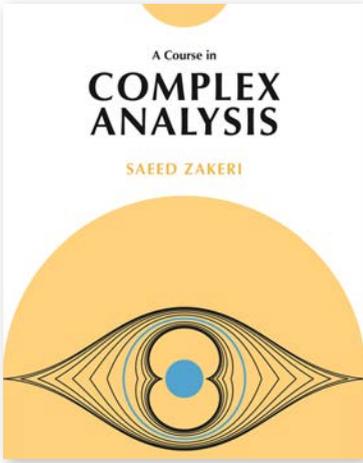
An interdisciplinary history of trigonometry from the mid-sixteenth century to the early twentieth

## The Doctrine of Triangles

*The Doctrine of Triangles* offers an interdisciplinary history of trigonometry that spans four centuries, starting in 1550 and concluding in the 1900s. Glen Van Brummelen tells the story of trigonometry as it evolved from an instrument for understanding the heavens to a practical tool, used in fields such as surveying and navigation. In Europe, China, and America, trigonometry aided and was itself transformed by concurrent mathematical revolutions, as well as the rise of science and technology.

**Glen Van Brummelen** is dean of the faculty of natural and applied sciences at Trinity Western University and a historian of mathematics and astronomy.

2021. 392 pages. 122 b/w illus. 6 tables.  
Hardback 9780691179414 \$29.95 | £25.00 ebook 9780691219875



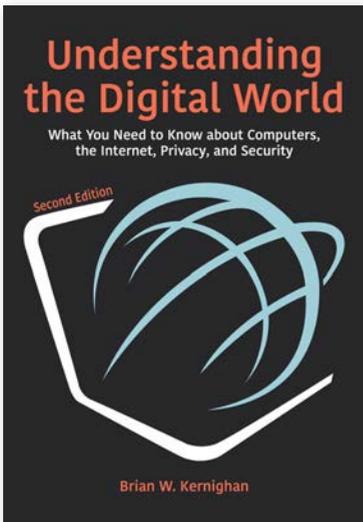
A comprehensive graduate-level textbook that takes a fresh approach to complex analysis

## A Course in Complex Analysis

*A Course in Complex Analysis* explores a central branch of mathematical analysis, with broad applications in mathematics and other fields such as physics and engineering. Ideally designed for a year-long graduate course on complex analysis and based on nearly twenty years of classroom lectures, this modern and comprehensive textbook is equally suited for independent study or as a reference for more experienced scholars. Presenting a wealth of material in a single volume, *A Course in Complex Analysis* will be a valuable resource for students and working mathematicians.

**Saeed Zakeri** is professor of mathematics at Queens College and the Graduate Center, City University of New York.

2021. 448 pages. 77 color + 63 b/w illus. 2 tables.  
 Hardback 9780691207582 \$65.00 | £50.00 ebook 9780691218502



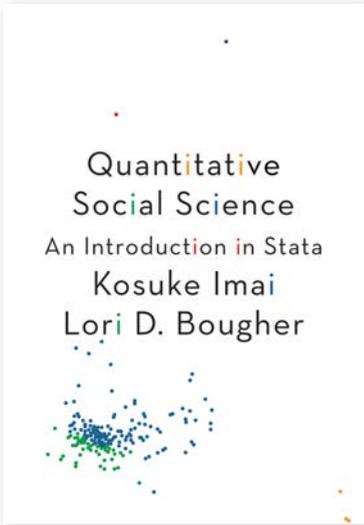
A brand-new edition of the popular introductory textbook that explores how computer hardware, software, and networks work

## Understanding the Digital World

In this updated edition of *Understanding the Digital World*, Brian Kernighan explains how computer hardware, software, and networks work. Topics include how computers are built and how they compute; what programming is; how the Internet and web operate; and how all of these affect security, privacy, property, and other important social, political, and economic issues. *Understanding the Digital World* is a must-read for readers of all backgrounds who want to know more about computers and communications.

**Brian W. Kernighan** is a professor in the Department of Computer Science at Princeton University.

2021. 304 pages. 58 color + 60 b/w illus.  
 Paperback 9780691219103 \$29.95 | £25.00  
 Hardback 9780691219097 \$125.00 | £98.00 ebook 9780691218960



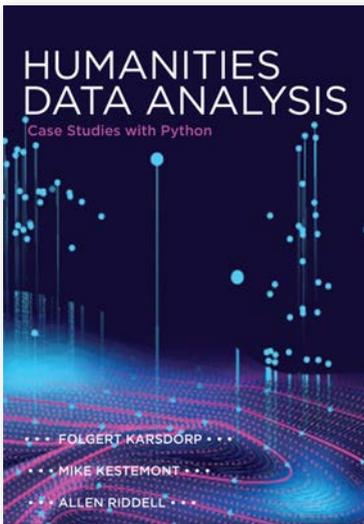
The Stata edition of the groundbreaking textbook on data analysis and statistics for the social sciences

## Quantitative Social Science

Quantitative analysis is an increasingly essential skill for social science research, yet students in the social sciences and related areas typically receive little training in it—or if they do, they usually end up in statistics classes that offer few insights into their field. This textbook is a practical introduction to data analysis and statistics written especially for undergraduates and beginning graduate students in the social sciences and allied fields, such as business, economics, education, political science, psychology, sociology, public policy, and data science.

**Kosuke Imai** is Professor of Government and of Statistics at Harvard University. **Lori D. Bougher** is a senior research specialist at the Data-Driven Social Science Initiative at Princeton University.

2021. 472 pages. 79 color + 11 b/w illus. 49 tables.  
Paperback 9780691191096 \$49.95 | £40.00  
Hardback 9780691191089 \$95.00 | £74.00      ebook 9780691191294



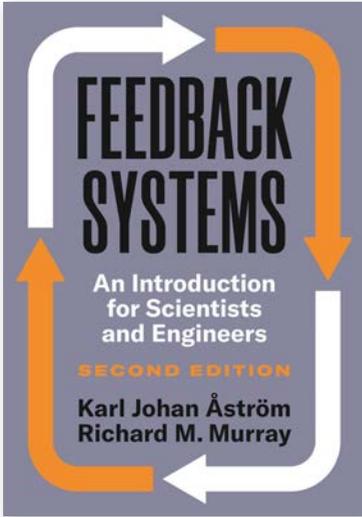
A practical guide to data-intensive humanities research using the Python programming language

## Humanities Data Analysis

The use of quantitative methods in the humanities and related social sciences has increased considerably in recent years, allowing researchers to discover patterns in a vast range of source materials. Despite this growth, there are few resources addressed to students and scholars who wish to take advantage of these powerful tools. *Humanities Data Analysis* offers the first intermediate-level guide to quantitative data analysis for humanities students and scholars using the Python programming language.

**Folger Karsdorp** is a postdoctoral researcher at the Meertens Institute of the Royal Netherlands Academy of Arts and Sciences. **Mike Kestemont** is assistant professor of literature at the University of Antwerp. **Allen Riddell** is assistant professor of information science at Indiana University.

2021. 360 pages. 69 color + 12 b/w illus. 5 tables.  
Hardback 9780691172361 \$45.00 | £35.00      ebook 9780691200330



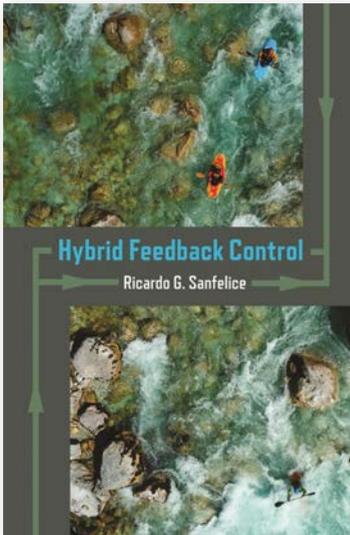
The essential introduction to the principles and applications of feedback systems

## Feedback Systems

This textbook covers the mathematics needed to model, analyze, and design feedback systems. Now more user-friendly than ever, this revised and expanded edition of *Feedback Systems* is a one-volume resource for students and researchers in mathematics and engineering. It has applications across a range of disciplines that utilize feedback in physical, biological, information, and economic systems.

Karl Johan Åström is senior professor of automatic control at Lund University in Sweden. Richard M. Murray is the Thomas E. and Doris Everhart Professor of Control and Dynamical Systems and Bioengineering at the California Institute of Technology.

2021. 528 pages. 290 b/w illus. 9 tables.  
 Hardback 9780691193984 \$95.00 | £74.00 ebook 9780691213477



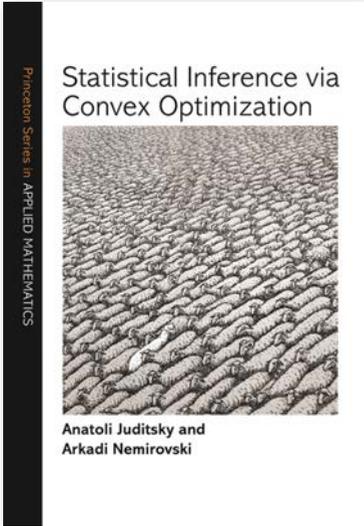
A comprehensive introduction to hybrid control systems and design

## Hybrid Feedback Control

In *Hybrid Feedback Control*, Ricardo Sanfelice presents a self-contained introduction to hybrid control systems and develops new tools for their analysis and design. Hybrid behavior can occur in one or more subsystems of a feedback system, and Sanfelice offers a unified control theory framework, filling an important gap in the control theory literature. Relevant to dynamical systems theory, applied mathematics, and computer science, *Hybrid Feedback Control* will be useful to students and researchers working on hybrid systems, cyber-physical systems, control, and automation.

Ricardo G. Sanfelice is professor of electrical and computer engineering at the University of California, Santa Cruz.

2021. 424 pages. 78 b/w illus. 1 table.  
 Hardback 9780691180229 \$75.00 | £58.00 ebook 9780691189536

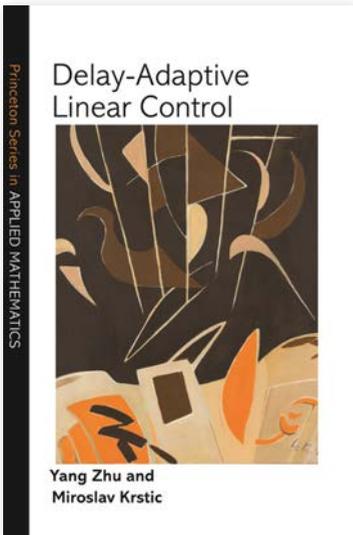


## Statistical Inference via Convex Optimization

Through an accessible analysis of fundamental problems of hypothesis testing and signal recovery, Anatoli Juditsky and Arkadi Nemirovski show how convex optimization theory can be used to devise and analyze near-optimal statistical inferences. *Statistical Inference via Convex Optimization* is an essential resource for optimization specialists who are new to statistics and its applications, and for data scientists who want to improve their optimization methods.

**Anatoli Juditsky** is professor of applied mathematics and chair of statistics and optimization at the Multidisciplinary Institute in Artificial Intelligence at the Université Grenoble Alpes in France. **Arkadi Nemirovski** is the John Hunter Chair and professor of industrial and systems engineering at the Georgia Institute of Technology.

2020. 656 pages. 40 b/w illus.  
 Hardback 9780691197296 \$85.00 | £66.00 ebook 9780691200316

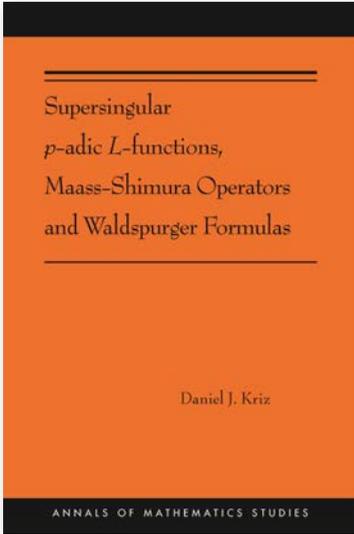


## Delay-Adaptive Linear Control

*Delay-Adaptive Linear Control* develops adaptive predictor feedback algorithms equipped with online estimators of unknown delays and other parameters. This comprehensive book solves adaptive delay compensation problems for systems with single and multiple inputs/outputs, unknown and distinct delays in different input channels, unknown delay kernels, unknown plant parameters, unmeasurable finite-dimensional plant states, and unmeasurable infinite-dimensional actuator states. *Delay-Adaptive Linear Control* offers powerful new tools for the control engineer and the mathematician.

**Yang Zhu** is a postdoctoral researcher in control theory and engineering at Tel Aviv University. **Miroslav Krstic** is distinguished professor of mechanical and aerospace engineering at the University of California, San Diego, where he also serves as senior associate vice chancellor for research.

2020. 352 pages. 48 b/w illus. 16 tables.  
 Hardback 9780691202549 \$85.00 | £66.00 ebook 9780691203317



## Supersingular $p$ -adic $L$ -functions, Maass-Shimura Operators and Waldspurger Formulas

This book develops a new theory of  $p$ -adic modular forms on modular curves, extending Katz's classical theory to the supersingular locus. The main novelty is to move to infinite level and extend coefficients to period sheaves coming from relative  $p$ -adic Hodge theory. This makes it possible to trivialize the Hodge bundle on the infinite-level modular curve by a “canonical differential” that restricts to the Katz canonical differential on the ordinary Igusa tower.

**Daniel J. Kriz** is an instructor in pure mathematics and a National Science Foundation postdoctoral fellow at the Massachusetts Institute of Technology.

2021. 280 pages.

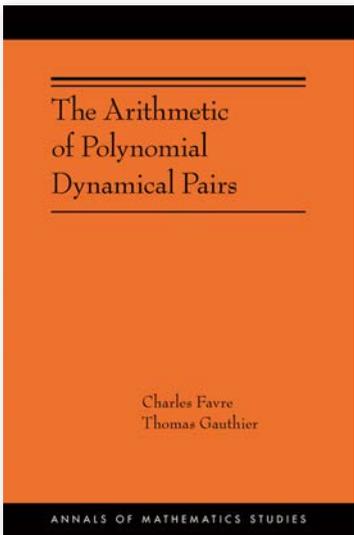
Paperback 9780691216461

\$75.00 | £58.00

Hardback 9780691216478

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ebook 9780691225739



## The Arithmetic of Polynomial Dynamical Pairs

In *The Arithmetic of Polynomial Dynamical Pairs*, Charles Favre and Thomas Gauthier present new mathematical research in the field of arithmetic dynamics. Specifically, the authors study one-dimensional algebraic families of pairs given by a polynomial with a marked point. Combining tools from arithmetic geometry and holomorphic dynamics, they prove an “unlikely intersection” statement for such pairs, thereby demonstrating strong rigidity features for them. This is a reader-friendly invitation to a new and exciting research area that brings together sophisticated tools from many branches of mathematics.

**Charles Favre** is a CNRS senior researcher based at the École Polytechnique in Paris. **Thomas Gauthier** is professor of mathematics at the Université Paris-Saclay.

June 2022. 252 pages. 18 b/w illus.

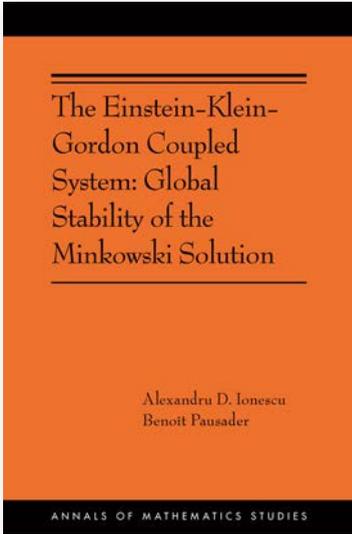
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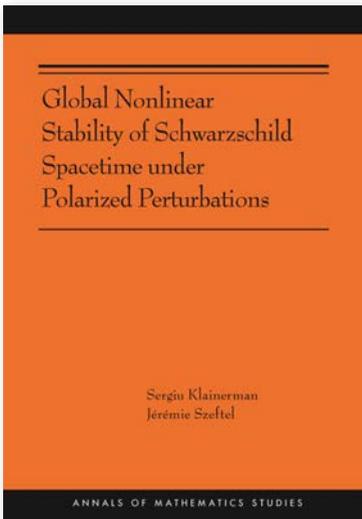


## The Einstein-Klein-Gordon Coupled System

This book provides a definitive proof of global nonlinear stability of Minkowski spacetime as a solution of the Einstein-Klein-Gordon equations of general relativity. Along the way, a novel robust analytical framework is developed, which extends to more general matter models. Alexandru Ionescu and Benoît Pausader prove global regularity at an appropriate level of generality of the initial data, and then prove several important asymptotic properties of the resulting spacetime, such as future geodesic completeness, peeling estimates of the Riemann curvature tensor, conservation laws for the ADM tensor, and Bondi energy identities and inequalities.

**Alexandru D. Ionescu** is professor of mathematics at Princeton University. **Benoît Pausader** is professor of mathematics at Brown University.

March 2022. 308 pages.  
 Paperback 9780691233048 \$75.00 | £58.00  
 Hardback 9780691233055 \$165.00 | £128.00 ebook 9780691233031

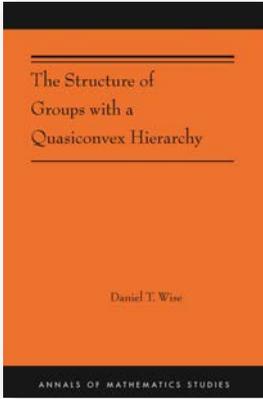


## Global Nonlinear Stability of Schwarzschild Spacetime under Polarized Perturbations

In this book, Sergiu Klainerman and Jérémie Szeftel take a first important step toward solving the fundamental black hole stability problem in general relativity by establishing the stability of nonrotating black holes—or Schwarzschild spacetimes—under so-called polarized perturbations. Essential reading for mathematicians and physicists alike, this book introduces a rich theoretical framework relevant to situations such as the full setting of the Kerr stability conjecture.

**Sergiu Klainerman** is Eugene Higgins Professor of Mathematics at Princeton University. **Jérémie Szeftel** is a CNRS senior researcher in mathematics at the Laboratoire Jacques-Louis Lions of Sorbonne Université in Paris.

2020. 856 pages. 13 b/w illus.  
 Paperback 9780691212425 \$75.00 | £58.00  
 Hardback 9780691212432 \$165.00 | £128.00 ebook 9780691218526

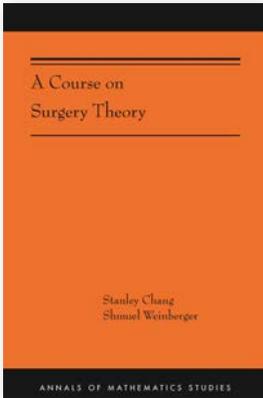


## The Structure of Groups with a Quasiconvex Hierarchy

This monograph on the applications of cube complexes constitutes a breakthrough in the fields of geometric group theory and 3-manifold topology. This book will interest graduate students and researchers working in geometry, algebra, and topology.

**Daniel T. Wise** is James McGill Professor in the Department of Mathematics and Statistics at McGill University.

2021. 376 pages. 166 color illus.  
 Paperback 9780691170459 \$75.00 | £58.00  
 Hardback 9780691170442 \$165.00 | £128.00 ebook 9780691213507



## A Course on Surgery Theory

*A Course on Surgery Theory* offers a modern look at this important mathematical discipline and some of its applications. This book explains some of the triumphs of surgery theory during the past three decades, from both an algebraic and geometric point of view.

**Stanley Chang** is the Mildred Lane Kemper Professor of Mathematics at Wellesley College. **Shmuel Weinberger** is the Andrew MacLeish Distinguished Service Professor of Mathematics at the University of Chicago.

2021. 472 pages. 14 b/w illus.  
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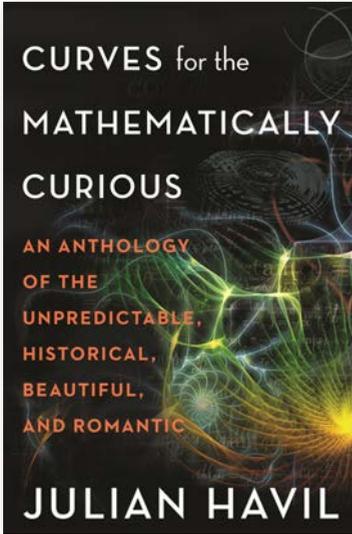
## Annals of Mathematics Journal

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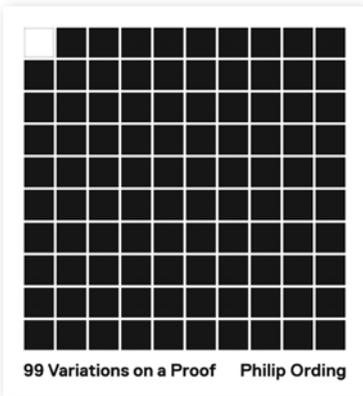
Ten amazing curves selected by one of today's most important math writers

## Curves for the Mathematically Curious

*Curves for the Mathematically Curious* is a curated collection of ten mathematical curves, selected by Julian Havil for their significance, mathematical interest, and beauty. Each chapter gives an account of the history and definition of one curve, providing a glimpse into the elegant and often surprising mathematics involved in its creation and evolution. This book is a rigorous and enriching mathematical experience for anyone interested in curves, and the book is designed so that readers who choose can follow the details with pencil and paper.

**Julian Havil** is a retired former master at Winchester College, England, where he taught mathematics for more than three decades.

2021. 280 pages. 125 b/w illus.  
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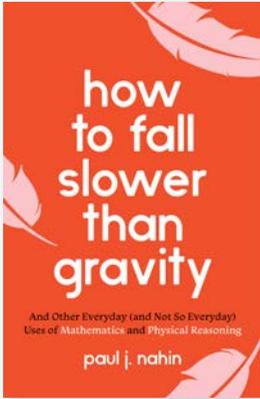
An exploration of mathematical style through 99 different proofs of the same theorem

## 99 Variations on a Proof

This book offers a multifaceted perspective on mathematics as both science and art. Each chapter solves an otherwise unremarkable equation in distinct historical, formal, and imaginative styles that range from Medieval, Topological, and Doggerel to Chromatic, Electrostatic, and Psychedelic. With a rare blend of humor and scholarly aplomb, Ording weaves these variations into an accessible and wide-ranging narrative that illustrates the flexibility and creative potential of mathematics. Readers will gain not only a bird's-eye view of the discipline and its major branches but also new insights into its historical, philosophical, and cultural nuances.

**Philip Ording** is professor of mathematics at Sarah Lawrence College.

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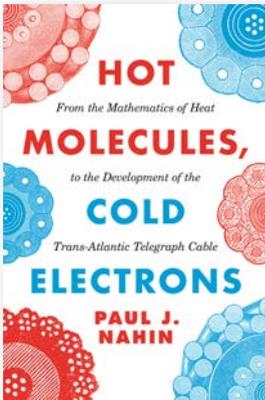
An engaging collection of intriguing problems that shows you how to think like a mathematical physicist

## How to Fall Slower Than Gravity

Paul Nahin is a master at explaining odd phenomena through straightforward mathematics. In this collection of twenty-six intriguing problems, he explores how mathematical physicists think. More than a puzzle book, this work will immerse you in the delights of scientific history while honing your math skills.

**Paul J. Nahin**

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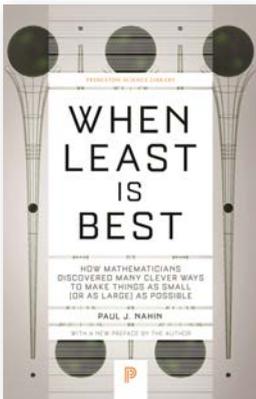
An entertaining mathematical exploration of the heat equation and its role in development of the trans-Atlantic telegraph cable

## Hot Molecules, Cold Electrons

Heat, like gravity, shapes nearly every aspect of our world and universe. The heat equation demystifies such processes, painting a mathematical picture of the way heat diffuses through matter. *Hot Molecules, Cold Electrons* offers a fascinating glimpse into the relationship between a formative equation and one of the most important developments in the history of human communication.

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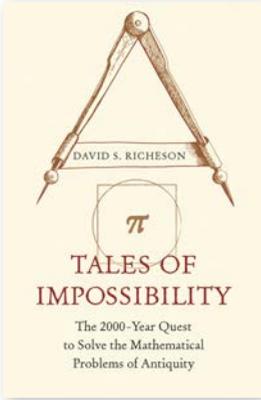
A mathematical journey through the most fascinating problems of extremes and how to solve them

## When Least Is Best

Paul Nahin shows how life often works at the extremes—with values becoming as small (or as large) as possible—and he considers how mathematicians over the centuries have grappled with these problems of minima and maxima.

**Paul J. Nahin** is professor emeritus of electrical engineering at the University of New Hampshire.

Princeton Science Library  
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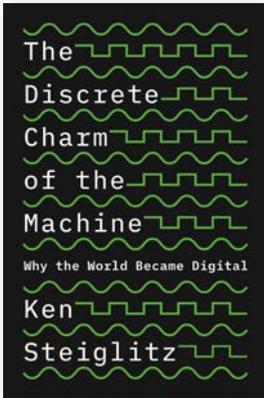
A comprehensive look at four of the most famous problems in mathematics

## Tales of Impossibility

*Tales of Impossibility* recounts the intriguing story of the renowned problems of antiquity. Featuring celebrated luminaries, little-known mathematicians, and historical surprises, this book chronicles the quest to understand some of mathematics' greatest puzzles.

**David S. Richeson** is professor of mathematics and the John J. and Ann Curley Faculty Chair in the Liberal Arts at Dickinson College.

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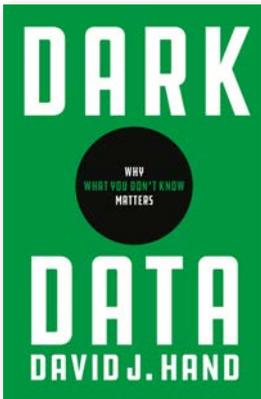
The genesis of the digital idea and why it transformed civilization

## The Discrete Charm of the Machine

Steiglitz traces the building of our digital world through the development of the internet and artificial intelligence, and considers emerging moral and aesthetic questions. This book examines our information technology at the most fundamental level and challenges us to think about its future trajectory.

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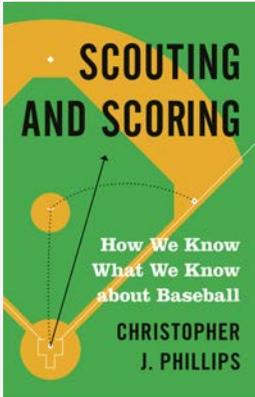
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## Dark Data

In *Dark Data*, data expert David Hand takes us on a fascinating and enlightening journey into the world of the data we *don't* see. Today, we all make decisions using data. *Dark Data* shows us all how to reduce the risk of making bad ones.

**David J. Hand** is emeritus professor of mathematics and senior research investigator at Imperial College London.

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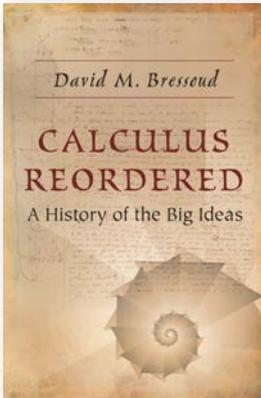
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## Scouting and Scoring

From the invention of official scorers and Statcast to the creation of the Major League Scouting Bureau, *Scouting and Scoring* reveals the inextricable connections between human expertise and data science, and offers an entirely fresh understanding of baseball.

**Christopher J. Phillips** is associate professor of history at Carnegie Mellon University.

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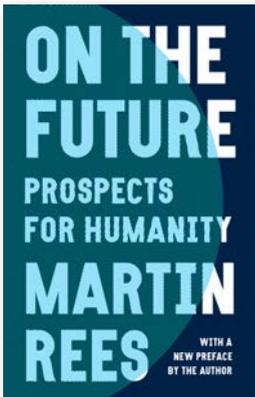
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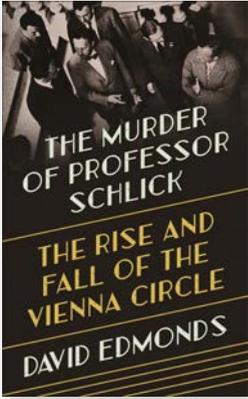
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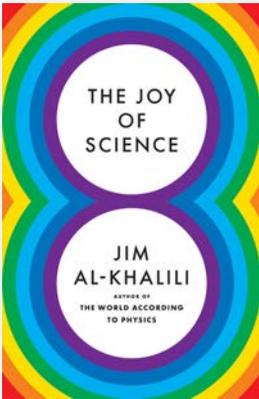
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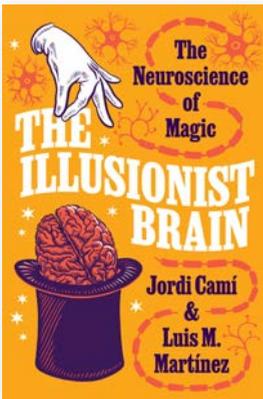
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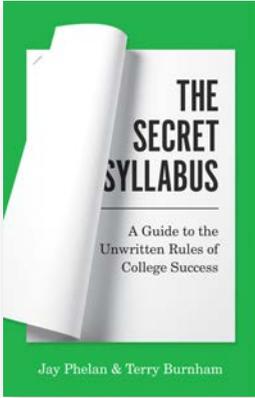
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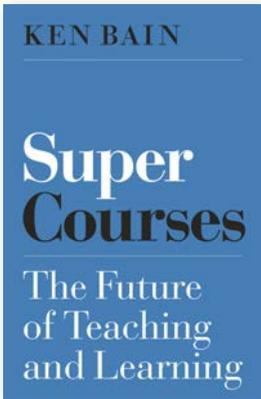
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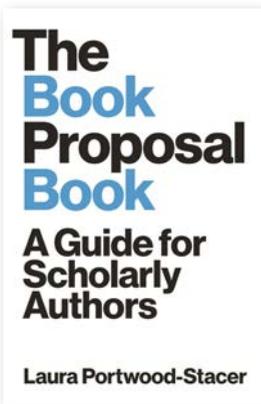
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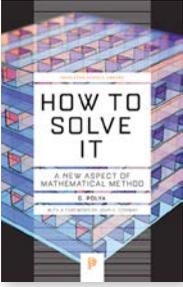
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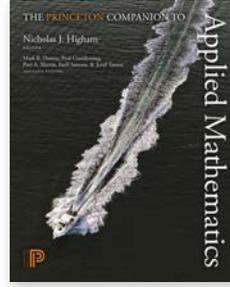
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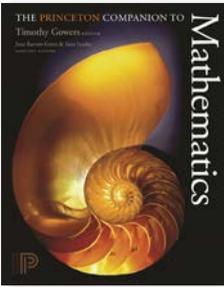
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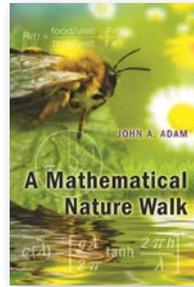
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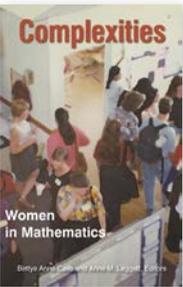
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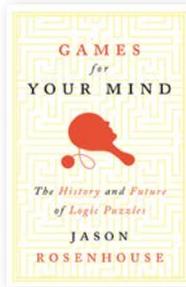
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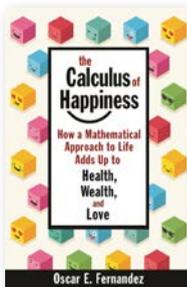


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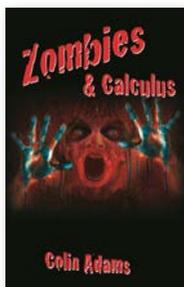
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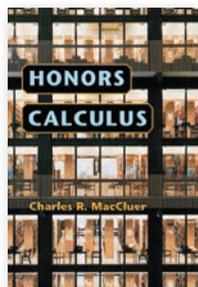
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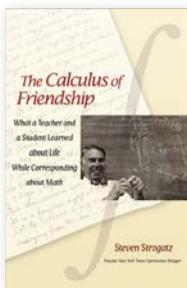
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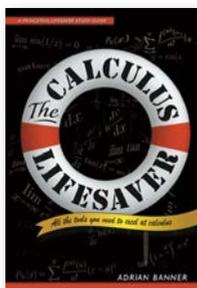
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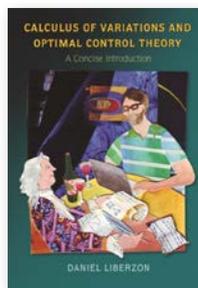
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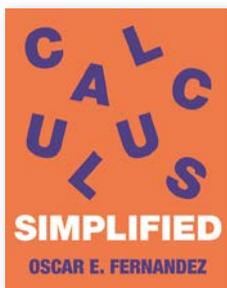
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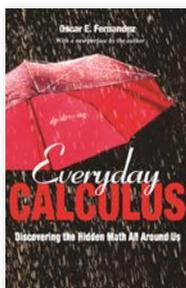
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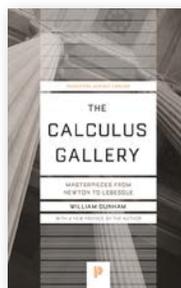
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