The Calculus Story A Mathematical Adventure

MICHAEL HASSAN

Men of Mathematics Elsevier
From one of the greatest minds in contemporary mathematics, Professor E.T. Bell, comes a witty, accessible, and fascinating look at the beautiful craft and enthralling history of mathematics. Men of Mathematics provides a rich account of major mathematical milestones, from the geometry of the Greeks through Newton’s calculus, and on to the laws of probability, symbolic logic, and the fourth dimension. Bell breaks down this majestic history of ideas into a series of engrossing biographies of the great mathematicians who made progress possible—and who also led intriguing, complicated, and often surprisingly entertaining lives. Never pedantic or dense, Bell writes with clarity and simplicity to distill great mathematical concepts into their most understandable forms for the curious everyday reader. Anyone with an interest in math may learn from these rich lessons, an advanced degree or extensive research is never necessary.

The Mathematics of Love Princeton University Press
"A mathematician pulls back the curtain and reveals the hidden patterns--from dating sites to divorce, sex to marriage--behind the rituals of love ... applying mathematical formulas to the most common yet complex questions pertaining to love: What's the chance of finding love? What's the probability that it will last? How do online dating algorithms work, exactly? Can game theory help us decide who to approach in a bar? At what point in your dating life should you settle down?"--Amazon.com.
Infinite Powers Union Square + ORM
Fluent description of the development of both the integral and differential calculus — its early beginnings in antiquity, medieval contributions, and a consideration of Newton and Leibniz.
The Calculus Gallery Union Square & Company
A journey through the elements of calculus reveals the mysteries of mathematics, real numbers, functions, and limits, and explores the implications of calculus in defining and understanding the changing qualities of the universe

The Calculus Wars Courier Corporation
Most popular books about science, and even about mathematics, tiptoe around equations as if they were something to be hidden from the reader's tender eyes. Dana Mackenzie starts from the opposite premise: He celebrates equations. No history of art would be complete without pictures. Why, then, should a history of mathematics--the universal language of science--keep the masterpieces of the subject hidden behind a veil? The Universe in Zero Words tells the history of twenty-four great and beautiful equations that have shaped mathematics, science, and society--from the elementary (1+1=2) to the sophisticated (the Black-Scholes formula for financial derivatives), and from the famous (E=mc2) to the arcane (Hamilton's quaternion equations). Mackenzie, who has been called "a popular-science ace" by Booklist magazine, lucidly explains what each equation means, who discovered it (and how), and how it has affected our lives. Illustrated in color throughout, the book tells the human and often-surprising stories behind the invention or discovery of the equations, from how a bad cigar changed the course of quantum mechanics to why whales (if they could communicate with us) would teach us a totally different

concept of geometry. At the same time, the book shows why these equations have something timeless to say about the universe, and how they do it with an economy (zero words) that no other form of human expression can match. The Universe in Zero Words is the ultimate introduction and guide to equations that have changed the world.

Principles of Mathematics Book 1 Set Simon and Schuster

In order to understand the universe you must know the language in which it is written. And that language is mathematics. - Galileo (1564-1642) People have always sought order in the apparent chaos of the universe. Mathematics has been our most valuable tool in that search, uncovering the patterns and rules that govern our world and beyond. This book traces humankind's greatest achievements, plotting a journey through the mathematical intellects of the last 4,000 years to where we stand today. It features the giants of mathematics, from Euclid and Pythagoras, through Napier and Newton, to Leibniz, Riemann, Russell, and many more. Topics include: • Counting and measuring from the earliest times • The Ancient Egyptians and geometry • The movements of planets • Measuring and mapping the world • Fuzzy logic and set theory • The death of numbers ABOUT THE SERIES: Arcturus Fundamentals Series explains fascinating and far-reaching topics in simple terms. Designed with rustic, tactile covers and filled with dynamic illustrations and fact boxes, these books will help you quickly get to grips with complex topics that affect our day-to-day living.

The Calculus Story Princeton University Press

From the Calculus to Set Theory traces the development of the calculus from the early seventeenth century through its expansion into mathematical analysis to the developments in set theory and the foundations of mathematics in the early twentieth century. It chronicles the work of mathematicians from Descartes and Newton to Russell and Hilbert and many, many others while emphasizing foundational questions and underlining the continuity of developments in higher mathematics. The other contributors to this volume are H. J. M. Bos, R. Bunn, J. W. Dauben, T. W. Hawkins, and K. Møller-Pedersen.

Mathematics and Its History Simon and Schuster

This textbook provides a unified and concise exploration of undergraduate mathematics by approaching the subject through its history. Readers will discover the rich tapestry of ideas behind familiar topics from the undergraduate curriculum, such as calculus, algebra, topology, and more. Featuring historical episodes ranging from the Ancient Greeks to Fermat and Descartes, this volume offers a glimpse into the broader context in which these ideas developed, revealing unexpected connections that make this ideal for a senior capstone course. The presentation of previous versions has been refined by omitting the less mainstream topics and inserting new connecting material, allowing instructors to cover the book in a one-semester course. This condensed edition prioritizes succinctness and cohesiveness, and there is a greater emphasis on visual clarity, featuring full color images and high quality 3D models. As in previous editions, a wide array of mathematical topics are covered, from geometry to computation; however, biographical sketches have been omitted. Mathematics and Its History: A Concise Edition is an essential resource for courses or reading programs on the history of mathematics. Knowledge of basic calculus, algebra, geometry, topology, and set theory is assumed. From reviews of previous editions: “Mathematics and Its History is a joy to read. The writing is clear, concise and inviting. The style is very different from a traditional text. I found myself picking it up to read at the expense of my usual late evening thriller or detective novel.... The author has done a wonderful job of tying together the dominant themes of undergraduate mathematics.” Richard J. Wilders, MAA, on the Third Edition "The book...is presented in a lively style without unnecessary detail. It is very stimulating and will be appreciated not only by students. Much attention is paid to problems and to the development of mathematics before the end of the nineteenth century.... This book brings to the non-specialist interested in mathematics many interesting results. It can be recommended for seminars and will be enjoyed by the broad mathematical community." European Mathematical Society, on the Second Edition

Everyday Calculus Princeton University Press

"Few of us really appreciate the full power of math--the extent to which its influence is not only in every office and every home, but also in every courtroom and hospital ward. In this ... book, Kit Yates explores the true stories of life-changing events in which the application--or misapplication--of mathematics has played a critical role: patients crippled by faulty genes and entrepreneurs bankrupted by faulty algorithms; innocent victims of miscarriages of justice; and the unwitting victims of software glitches"--Publisher marketing.

Calculus Story I with Python Oxford University Press

A magisterial history of calculus (and the people behind it) from one of the world's foremost mathematicians.

The Universe in Zero Words Oxford University Press, USA

This is a look at mathematics, its history and its relevance today. The book takes the reader on a journey through the ideas and visions of the men behind the numbers, from the cryptic poems of Tarraglia to the Bishop of Berkley and his disdain of Newtonian calculus. This book tells the story of mathematics across the centuries. It shows how the mathematics of yesterday are the mathematics of today, Pythagoras' theorem is as true now as it was 25 centuries ago. It attempts to show how mathematics has helped to define the universe and our place in it.

How Not to Be Wrong MIT Press

How can we be sure that Pythagoras's theorem is really true? Why is the 'angle in a semicircle' always 90 degrees? And how can tangents help determine the speed of a bullet? David Acheson takes the reader on a highly illustrated tour through the history of geometry, from ancient Greece to the present day. He emphasizes throughout elegant deduction and practical applications, and argues that geometry can offer the quickest route to the whole spirit of mathematics at its best. Along the way, we encounter the quirky and the unexpected, meet the great personalities involved, and uncover some of the loveliest surprises in mathematics.

The History of the Calculus and Its Conceptual Development Vintage

The Neumann Prize–winning, illustrated exploration of mathematics—from its timeless mysteries to its history of mind-boggling discoveries. Beginning millions of years ago with ancient “ant odometers” and moving through time to our modern-day quest for new dimensions, The Math Book covers 250 milestones in mathematical history. Among the numerous delights readers will learn about as they dip into this inviting anthology: cicada-generated prime numbers, magic squares from centuries ago, the discovery of pi and calculus, and the butterfly effect. Each topic is lavishly illustrated with colorful art, along with formulas and concepts, fascinating facts about scientists’ lives, and real-world applications of the theorems.

The Calculus of Friendship American Mathematical Soc.

Kiss My Math meets A Tour of the Calculus Jennifer Ouellette never took math in college, mostly because she-like most people-assumed that she wouldn't need it in real life. But then the English-major-turned-award-winning-science-writer had a change of heart and decided to revisit the equations and formulas that had haunted her for years. The Calculus Diaries is the fun and fascinating account of her year spent confronting her math phobia head on. With wit and verve, Ouellette shows how she learned to apply calculus to everything from gas mileage to dieting, from the rides at Disneyland to shooting craps in Vegas-proving that even the mathematically challenged can learn the fundamentals of the universal language.

The Story Of Mathematics Courier Corporation

Application-oriented introduction relates the subject as closely as possible to science with explorations of the derivative; differentiation and integration of the powers of x; theorems on differentiation, antidifferentiation; the chain rule; trigonometric functions; more. Examples. 1967 edition.

The Story of Mathematics Oxford University Press

A novel that uses calculus to help you survive a zombie apocalypse How can calculus help you survive the zombie apocalypse? Colin Adams, humor columnist for the Mathematical Intelligencer and one of today's most outlandish and entertaining popular math writers, demonstrates how in this zombie adventure novel. Zombies and Calculus is the account of Craig Williams, a math professor at a small liberal arts college in New England, who, in the middle of a calculus class, finds himself suddenly confronted by a late-arriving student whose hunger is not for knowledge. As the zombie virus spreads and civilization crumbles, Williams uses calculus to help his small band of survivors defeat the hordes of the undead. Along the way, readers learn how to avoid being eaten by taking advantage of the fact that zombies always point their tangent vector toward their target, and how to use exponential growth to determine the rate at which the virus is spreading. Williams also covers topics such as logistic growth, gravitational acceleration, predator-prey models, pursuit problems, the physics of combat, and more. With the aid of his story, you too can survive the zombie onslaught. Featuring easy-to-use appendixes that explain the book's mathematics in greater detail, Zombies and Calculus is suitable both for those who have only recently gotten the calculus bug, as well as for those whose disease has advanced to the multivariable stage.

The Calculus Diaries Arcturus Publishing

Katherine Loop has done the remarkable! She has written a solid math course with a truly Biblical worldview. This course goes way beyond the same old Christian math course that teaches math with a few Scriptures sprinkled in and maybe some church-based word problems. This course truly transforms the way we see math. Katherine makes the argument that math is not a neutral subject as most have come to believe. She carefully lays the foundation of how math points to our Creator, the God of the Bible. The nature of God, His Creation, and even the Gospel itself is seen through the study of math. Katherine does a marvelous job of revealing His Glory in this one-of-a-kind math course. Katherine Loop's Principles of Mathematics Biblical Worldview Curriculum is a first of its kind. It takes math to a whole new level students and parents are going to love. It is a guaranteed faith grower!

Infinite Powers Mariner Books

The Calculus of Friendship is the story of an extraordinary connection between a teacher and a student, as chronicled through more than thirty years of letters between them. What makes their relationship unique is that it is based almost entirely on a shared love of calculus. For them, calculus is more than a branch of mathematics; it is a game they love playing together, a constant when all else is in flux. The teacher goes from the prime of his career to retirement, competes in whitewater kayaking at the international level, and loses a son. The student matures from high school math whiz to Ivy League professor, suffers the sudden death of a parent, and blunders into a marriage destined to fail. Yet through it all they take refuge in the haven of calculus--until a day comes when calculus is no longer enough. Like calculus itself, The Calculus of Friendship is an exploration of change. It's about the transformation that takes place in a student's heart, as he and his teacher reverse roles, as they age, as they are buffeted by life itself. Written by a renowned teacher and communicator of mathematics, The Calculus of Friendship is warm, intimate, and deeply moving. The most inspiring ideas of calculus, differential equations, and chaos theory are explained through metaphors, images, and anecdotes in a way that all readers will find beautiful, and even poignant. Math enthusiasts, from high school students to professionals, will delight in the offbeat problems and lucid explanations in the letters. For anyone whose life has been changed by a mentor, The Calculus of Friendship will be an unforgettable journey.

A Tour of the Calculus Princeton University Press

Python is one of the most popular programming languages and is used in many different areas. Unlike other languages, it has a grammar familiar to people's language, so it is easy to learn and has low barriers to application. In particular, sympy, a python module introduced in this book, can represent most theories and expressions of mathematics, thus facilitating the acquisition of concepts as well as complex calculations.This book mainly uses the sympy module of python to understand the concepts of differential and integral, and introduces various calculations of differential and integral. Derivatives and integrals are used to implicitly denote the meaning of an expression. In order to understand the implications, it is necessary to understand the calculation process of expressions. In order to understand such a meaning, various methods are used in calculus. This book introduces various techniques of calculus and the various mathematical knowledge used in its calculations using python. This course will help you understand mathematical concepts in this area as well as understand and use the python language.

Mathematics Simon and Schuster

The Book of Squares by Fibonacci is a gem in the mathematical literature and one of the most important mathematical treatises written in the Middle Ages. It is a collection of theorems on indeterminate analysis and equations of second degree which yield, among other results, a solution to a problem proposed by Master John of Palermo to Leonardo at the Court of Frederick II. The book was dedicated and presented to the Emperor at Pisa in 1225. Dating back to the 13th century the book exhibits the early and continued fascination of men with our number system and the relationship among numbers with special properties such as prime numbers, squares, and odd numbers. The faithful translation into modern English and the commentary by the translator make this book accessible to professional mathematicians and amateurs who have always been intrigued by the lure of our number system.