Leonhard Euler Mathematical Genius In The Enlightenment
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Lonely Hearts of the Cosmos A NEW YORK TIMES BESTSELLER The official book behind the Academy Award-winning film The Imitation Game, starring Benedict Cumberbatch and Keira Knightley It is only a slight exaggeration to say that the British mathematician Alan Turing (1912-1954) saved the Allies from the Nazis, invented the computer and artificial intelligence, and anticipated gay liberation by decades--all before his suicide at age forty-one. This New York Times--bestselling biography of the founder of computer science, with a new preface by the author that addresses Turing's royal pardon in 2013, is the definitive account of an extraordinary mind and life. Capturing both the inner and outer drama of Turing's life, Andrew Hodges tells how Turing's revolutionary idea of 1936--the concept of a universal machine--laid the foundation for the modern computer and how Turing brought the idea to practical realization in 1945 with his electronic design. The book also tells how this work was directly related to Turing's leading role in breaking the German Enigma ciphers during World War II, a scientific triumph that was critical to Allied victory in the Atlantic. At the same time, this is the tragic account of a man who, despite his wartime service, was eventually arrested, stripped of his security clearance, and forced to undergo a humiliating treatment program--all for trying to live honestly in a society that defined homosexuality as a crime. The inspiration for a major motion picture starring Benedict Cumberbatch and Keira Knightley, Alan Turing: The Enigma is a gripping story of mathematics, computers, cryptography, and homosexual persecution.

Vita Mathematica The year 2007 marks the 300th anniversary of the birth of one of the Enlightenment's most important mathematicians and scientists, Leonhard Euler. This volume is a collection of 24 essays by some of the world's best Eulerian scholars from seven different countries about Euler, his life and his work. Some of the essays are historical, including much previously unknown information about Euler's life, his activities in the St. Petersburg Academy, the influence of the Russian Princess Dashkova, and Euler's philosophy. Others describe his influence on the subsequent growth of European mathematics and physics in the 19th century. Still others give technical details of Euler's innovations in probability, number theory, geometry, analysis, astronomy, mechanics and other fields of mathematics and science. - Over 20 essays by some of the best historians of mathematics and science, including Ronald Calinger, Peter Hoffmann, Curtis Wilson, Kim Plofker, Victor Katz, Ruediger Thiele, David Richeson, Robin Wilson, Ivor Grattan-Guinness and Karin Reich - New details of Euler's life in two essays, one by Ronald Calinger and one he co-authored with Elena Polyaikhoava - New information on Euler's work in differential geometry, series, mechanics, and other important topics including his influence in the early 19th century

The Early Mathematics of Leonhard Euler Sandifer has been studying Euler for decades and is one of the world's leading experts on his work. This volume is the second collection of Sandifer's "How Euler Did It" columns. Each is a jewel of historical and mathematical exposition. The sum total of years of work and study of the most prolific mathematician of history, this volume will leave you marveling at Euler's clever inventiveness and Sandifer's wonderful ability to explicate and put it all in context.

Leonhard Euler By developing the scale that bears his name, Charles Richter not only invented the concept of magnitude as a measure of earthquake size, he turned himself into nothing less than a household word. He remains the only seismologist whose name anyone outside of narrow scientific circles would likely recognize. Yet few understand the Richter scale itself, and even fewer have ever understood the man. Drawing on the wealth of papers Richter left behind, as well as dozens of interviews with his family and colleagues, Susan Hough takes the reader deep into Richter's complex life story, setting it in the context of his family and interpersonal attachments, his academic career, and the history of seismology. Among his colleagues Richter was known as intensely private, passionately interested in earthquakes, and iconoclastic. He was an avid nudist, seismologists tell each other with a grin; he dabbled in poetry. He was a publicity hound, some suggest, and more famous than he deserved to be. But even his closest associates were unaware that he struggled to reconcile an intense and abiding need for artistic expression with his scientific interests, or that his apparently strained relationship with his wife was more unconventional but also stronger than they knew. Moreover, they never realized that his well-known foibles might even have been the consequence of a profound neurological disorder. In this biography, Susan Hough artfully interweaves the stories of Richter's life with the history of earthquake exploration and seismology. In doing so, she illuminates the world of earth science for the lay reader, much as Sylvia Nasar brought the world of mathematics alive in A Beautiful Mind.

Carl Friedrich Gauss In just seven symbols, with profound and beautiful simplicity, Euler's Equation connects five of the most important
numbers in mathematics. Robin Wilson explores each number in turn, then brings them together to consider the power of the equation as a whole.

A Concise History of Mathematics The First Edition of the book is a collection of articles, all by the author, on the Indian mathematical genius Srinivasa Ramanujan as well as on some of the greatest mathematicians in history whose life and works have things in common with Ramanujan. It presents a unique comparative study of Ramanujan’s spectacular discoveries and remarkable life with the monumental contributions of various mathematical luminaries, some of whom, like Ramanujan, overcame great difficulties in life. Also, among the articles are reviews of three important books on Ramanujan’s mathematics and life. In addition, some aspects of Ramanujan’s contributions, such as his remarkable formulae for the number pi, his path-breaking work in the theory of partitions, and his fundamental observations on quadratic forms, are discussed. Finally, the book describes various current efforts to ensure that the legacy of Ramanujan will be preserved and continue to thrive in the future. This Second Edition is an expanded version of the first with six more articles by the author. Of note is the inclusion of a detailed review of the movie The Man Who Knew Infinity, a description of the fundamental work of the SASTRA Ramanujan Prize Winners, and an account of the Royal Society Conference to honour Ramanujan’s legacy on the centenary of his election as FRS.

Alan Turing: The Enigma Leonhard Euler’s Letters to a German Princess on Various Subjects in Physics and Philosophy is a milestone in the history of physics textbooks and the instruction of women in the sciences. It also covers views of its author on epistemology, religion, and innovations in scientific equipment, including telescopes and microscopes. Today, 250 years later, we study this work of Euler’s as a foundation for the history of physics teaching and analyze the letters from an historical and pedagogical point of view.

The Music of the Primes

Letters of Euler on Different Subjects in Natural Philosophy Learn about the boy who - could read and add numbers when he was three years old, - thwarted his teacher by finding a quick and easy way to sum the numbers 1-100, - attracted the attention of a Duke with his genius, and became the man who - predicted the reappearance of a lost planet, - discovered basic properties of magnetic forces, - invented a surveying tool used by professionals until the invention of lasers. Based on extensive research of original and secondary sources, this historical narrative will inspire young readers and even curious adults with its touching story of personal achievement.

Classics of Mathematics Like masterpieces of art, music, and literature, great mathematical theorems are creative milestones, works of genius destined to last forever. Now William Dunham gives them the attention they deserve. Dunham places each theorem within its historical context and explores the very human and often turbulent life of the creator -- from Archimedes, the absentminded theoretician whose absorption in his work often precluded eating or bathing, to Gerolamo Cardano, the sixteenth-century mathematician whose accomplishments flourished despite a bizarre array of misadventures, to the paranoid genius of modern times, Georg Cantor. He also provides step-by-step proofs for the theorems, each easily accessible to readers with no more than a knowledge of high school mathematics. A rare combination of the historical, biographical, and mathematical, Journey Through Genius is a fascinating introduction to a neglected field of human creativity. "It is mathematics presented as a series of works of art; a fascinating lingering over individual examples of ingenuity and insight. It is mathematics by lightning flash." --Isaac Asimov

Leonard Euler The Early Mathematics of Leonard Euler gives an article-by-article description of Leonard Euler’s early mathematical works; the 50 or so mathematical articles he wrote before he left St. Petersburg in 1741 to join the Academy of Frederick the Great in Berlin. These early pieces contain some of Euler’s greatest work, the Konigsberg bridge problem, his solution to the Basel problem, and his first proof of the Euler-Fermat theorem. It also presents important results that we seldom realize are due to Euler; that mixed partial derivatives are (usually) equal, our f(x) f(x) notation, and the integrating factor in differential equations. The books shows how contributions in diverse fields are related, how number theory relates to series, which, in turn, relate to elliptic integrals and then to differential equations. There are dozens of such strands in this beautiful web of mathematics. At the same time, we see Euler grow in power and sophistication, from a young student when at 18 he published his first work on differential equations (a paper with a serious flaw) to the most celebrated mathematician and scientist of his time. It is a portrait of the world’s most exciting mathematics between 1725 and 1741, rich in technical detail, woven with connections within Euler’s work and with the work of other mathematicians in other times and places, laced with historical context.

Mathematics and the Imagination An acclaimed biography of the Enlightenment’s greatest mathematician This is the first full-scale biography of Leonard Euler (1707–1783), one of the greatest mathematicians and theoretical physicists of all time. In this comprehensive and authoritative account, Ronald Calinger connects the story of Euler's eventful life to the astonishing achievements that place him in the company of Archimedes, Newton, and Gauss. Drawing on Euler’s massive published works and correspondence, this biography sets Euler’s work in its multilayered context—personal, intellectual, institutional, political, cultural, religious, and social. It is a story of nearly incessant accomplishment, from Euler's fundamental contributions to almost every area of pure and applied mathematics in his time—especially calculus, mechanics, and optics—to his advances in shipbuilding, telescopes, acoustics, ballistics, cartography, chronology, and music theory.

Math Makers "Dunham writes for nonspecialists, and they will enjoy his piquant anecdotes and amusing asides -- Booklist "Artfully, Dunham conducts a tour of the mathematical universe. . . he believes these ideas to be accessible to the audience he wantsto reach, and he writes so that they are.” -- Nature "If you want to encourage anyone's interest in math, get them TheMathematical Universe.” * New Scientist

Journey Through Genius

Leonhard Euler More than three centuries after its creation, calculus remains a dazzling intellectual achievement and the gateway to
higher mathematics. This book charts its growth and development by sampling from the work of some of its foremost practitioners, beginning with Isaac Newton and Gottfried Wilhelm Leibniz in the late seventeenth century and continuing to Henri Lebesgue at the dawn of the twentieth. Now with a new preface by the author, this book documents the evolution of calculus from a powerful but logically chaotic subject into one whose foundations are thorough, rigorous, and unflinching—a story of genius triumphing over some of the togahest, subtletest problems imaginable. In touring The Calculus Gallery, we can see how it all came to be.

How Euler Did Even More Classic biography of Gauss, updated with new introduction, bibliography and new material.

A Well-Ordered Thing In southern California, nearly a half century ago, a small band of researchers -- equipped with a new 200-inch telescope and a faith born of scientific optimism -- embarked on the greatest intellectual adventure in the history of humankind: the search for the origin and fate of the universe. Their quest would eventually engulf all of physics and astronomy, leading not only to the discovery of quasars, black holes, and shadow matter but also to fame, controversy, and Nobel Prizes. Lonely Hearts of the Cosmos tells the story of the men and women who have taken eternity on their shoulders and restored nature in search of answers to the deepest questions we know to ask.

The Legacy of Leonhard Euler

An Elegant Solution From the preface of the author: "I have divided this work into two books; in the first of these I have confined myself to those matters concerning pure analysis. In the second book I have explained those things which must be known from geometry, since analysis is ordinarily developed in such a way that its application to geometry is shown. In the first book, since all of analysis is concerned with variable quantities and functions of such variables, I have given full treatment to functions. I have also treated the transformation of functions and functions as the sum of infinite series. In addition I have developed functions in infinite series."

100 Great Problems of Elementary Mathematics Appropriate for undergraduate and select graduate courses in the history of mathematics, and in the history of science. This edited volume of readings contains more than 130 selections from eminent mathematicians from Archimedes to Hilbert and Noether. The chapter introductions comprise a concise history of mathematics based on critical textual analysis and the latest scholarship. Each reading is preceded by a substantial biography of its author.

Dr. Euler's Fabulous Formula This is the first full-scale biography of Leonhard Euler (1707–83), one of the greatest mathematicians and theoretical physicists of all time. In this comprehensive and authoritative account, Ronald Calinger connects the story of Euler's eventful life to the astonishing achievements that place him in the company of Archimedes, Newton, and Gauss. Drawing chiefly on Euler's massive published works and correspondence, which fill more than eighty volumes so far, this biography sets Euler's work in its multilayered context—personal, intellectual, institutional, political, cultural, religious, and social. It is a story of nearly incessant accomplishment, from Euler's fundamental contributions to almost every area of pure and applied mathematics—especially calculus, number theory, notation, optics, and celestial, rational, and fluid mechanics—to his advancements in shipbuilding, telescopes, ballistics, cartography, chronology, and music theory. The narrative takes the reader from Euler's childhood and education in Basel through his first period in St. Petersburg, 1727–41, where he gained a European reputation by solving the Basel problem and systematically developing analytical mechanics. Invited to Berlin by Frederick II, Euler published his famous Introductio in analysin infinitarum, devised continuum mechanics, and proposed a pulse theory of light. Returning to St. Petersburg in 1766, he created the analytical calculus of variations, developed the most precise lunar theory of the time that supported Newton's dynamics, and published the best-selling Letters to a German Princess—all despite eye problems that ended in near-total blindness. In telling the remarkable story of Euler and how his achievements brought pan-European distinction to the Petersburg and Berlin academies of sciences, the book also demonstrates with new depth and detail the central role of mathematics in the Enlightenment. Some images inside the book are unavailable due to digital copyright restrictions.

A Contextual History of Mathematics An award-winning science writer introduces us to mathematics using the extraordinary equation that unites five of mathematics’ most important numbers Bertrand Russell wrote that mathematics can exalt "as surely as poetry." This is especially true of one equation: e^{i\pi} + 1 = 0, the brainchild of Leonhard Euler, the Mozart of mathematics. More than two centuries after Euler’s death, it is still regarded as a conceptual diamond of unsurpassed beauty. Called Euler’s identity or God’s equation, it includes just five numbers but represents an astonishing revelation of hidden connections. It ties together everything from basic arithmetic to compound interest, the circumference of a circle, trigonometry, calculus, and even infinity. In David Stipp’s hands, Euler’s identity formula becomes a contemplative stroll through the glories of mathematics. The result is an ode to this magical field.

Ramanujan’s Place in the World of Mathematics Dmirrii Mendeleev (1834–1907) is a name we recognize, but perhaps only as the creator of the periodic table of elements. Generally, little else has been known about him. A Well-Ordered Thing is an authoritative biography of Mendeleev that draws a multifaceted portrait of his life for the first time. As Michael Gordin reveals, Mendeleev was not only a luminary in the history of science, he was also an astonishingly wide-ranging political and cultural figure. From his attack on Spiritualism to his failed voyage to the Arctic and his near-mythical hot-air balloon trip, this is the story of an extraordinary maverick. The ideals that shaped his work outside science also led Mendeleev to order the elements and, eventually, to engineer one of the most fascinating scientific developments of the nineteenth century. A Well-Ordered Thing is a classic work that tells the story of one of the world’s most important minds.

Leonard Euler's Letters to a German Princess An examination of the Riemann Hypothesis considers the modern implications of its solution, noting its potential impact on business, science, and other fields and describing the million-dollar prize currently being offered to whomever can crack its code. Reprint.

Euler's Gem Robertson's Latest Mix of Rich History and Deadly Murder For young Leonard Euler, the Bernoulli family have been more than just friends. Master Johann has been a demanding mentor, and his sons have been Leonard's allies and companions. But it is also a
family torn by jealousy and distrust. Father and sons are engaged in a ruthless competition for prestige among the mathematical elites of Europe, especially the greatest prize: the Chair of Mathematics at the University of Basel, which Johann holds and his sons want. And now, their aspirations may have turned deadly. Lured into an investigation of the suspicious death of Uncle Jacob twenty years ago, Leonhard soon realizes there’s more at stake than even a prominent appointment. Surrounded by the most brilliant—and cunning—minds of his generation, Leonhard is forced to see how dangerous his world is. His studies in mathematics have always been entwined with his thoughts on theology, and now, caught in a deadly battle of wills, he’ll need both his genius and his faith to survive.

Euler: The Master of Us All Recipient of the Mathematical Association of America’s Beckenbach Book Prize in 2008! Leonhard Euler was one of the most prolific mathematicians that have ever lived. This book examines the huge scope of mathematical areas explored and developed by Euler, which includes number theory, combinatorics, geometry, complex variables and many more. The information known to Euler over 300 years ago is discussed, and many of his advances are reconstructed. Readers will be left in no doubt about the brilliance and pervasive influence of Euler’s work.

Remarkable Mathematicians This is the first full-scale biography of Leonhard Euler (1707–83), one of the greatest mathematicians and theoretical physicists of all time. In this comprehensive and authoritative account, Ronald Calinger connects the story of Euler’s eventual life to the astonishing achievements that place him in the company of Archimedes, Newton, and Gauss. Drawing chiefly on Euler’s massive published works and correspondence, which fill more than eighty volumes so far, this biography sets Euler’s work in its multilayered context—personal, intellectual, institutional, political, cultural, religious, and social. It is a story of nearly incessant accomplishment, from Euler’s fundamental contributions to almost every area of pure and applied mathematics—especially calculus, number theory, notation, optics, and celestial, rational, and fluid mechanics—to his advancements in shipbuilding, telescopes, ballistics, cartography, chronology, and music theory. The narrative takes the reader from Euler’s childhood and education in Basel through his first period in St. Petersburg, 1727–41, where he gained a European reputation by solving the Basel problem and systematically developing analytical mechanics. Invited to Berlin by Frederick II, Euler published his famous Introductio in analysin infinitum, devised continuum mechanics, and proposed a pulse theory of light. Returning to St. Petersburg in 1766, he created the analytical calculus of variations, developed the most precise lunar theory of the time that supported Newton’s dynamics, and published the best-selling Letters to a German Princess—all despite eye problems that ended in near-total blindness. In telling the remarkable story of Euler and how his achievements brought pan-European distinction to the Petersburg and Berlin academies of sciences, the book also demonstrates with new depth and detail the central role of mathematics in the Enlightenment.

Richter’s Scale This little book is conceived as a service to mathematicians attending the 1998 International Congress of Mathematicians in Berlin. It presents a comprehensive, condensed overview of mathematical activity in Berlin, from Leibniz almost to the present day (without, however, including biographies of living mathematicians). Since many towering figures in mathematical history worked in Berlin, most of the chapters of this book are concise biographies. These are held together by a few survey articles presenting the overall development of entire periods of scientific life at Berlin. Overlaps between various chapters and differences in style between the chap ters were inevitable, but sometimes this provided opportunities to show different aspects of a single historical event—for instance, the Kronecker-Weierstrass controversy. The book aims at readability rather than scholarly completeness. There are no footnotes, only references to the individual bibliographies of each chapter. Still, we do hope that the texts brought together here, and written by the various authors for this volume, constitute a solid introduction to the history of Berlin mathematics.

Leonhard Euler This compact, well-written history covers major mathematical ideas and techniques from the ancient Near East to 20th-century computer theory, surveying the works of Archimedes, Pascal, Gauss, Hilbert, and many others. “The author’s ability as a first-class historian as well as an able mathematician has enabled him to produce a work which is unquestionably one of the best.” — Nature.

Leonhard Euler An entertaining history of mathematics as chronicled through fifty short biographies. Mathematics today is the fruit of centuries of brilliant insights by men and women whose personalities and life experiences were often as extraordinary as their mathematical achievements. This entertaining history of mathematics chronicles those achievements through fifty short biographies that bring these great thinkers to life while making their contributions understandable to readers with little math background. Among the fascinating characters profiled are Isaac Newton (1642-1727), the founder of classical physics and infinitesimal calculus; he frequently quarreled with fellow scientists and was obsessed by alchemy and arcane Bible interpretation; Sophie Germain (1776 - 1831), who studied secretly at the Ecole Polytechnique in Paris, using the name of a previously enrolled male student—she is remembered for her work on Fermat’s Last Theorem and on elasticity theory; Emmy Noether (1882 - 1935), whom Albert Einstein described as the most important woman in the history of mathematics—she made important contributions to abstract algebra and in physics she clarified the connection between conservation laws and symmetry; and Srinivasa Ramanujan (1887-1920), who came from humble origins in India and had almost no formal training, yet made substantial contributions to mathematical analysis, number theory, infinite series, and continued fractions. The unusual behavior and life circumstances of these and many other intriguing personalities make for fascinating reading and a highly enjoyable introduction to mathematics.

A Most Elegant Equation With wit and clarity, the authors progress from simple arithmetic to calculus and non-Euclidean geometry. Their subjects: geometry, plane and fancy; puzzles that made mathematical history; tantalizing paradoxes; more. Includes 169 figures.

The Genius of Euler: Reflections on his Life and Work Ioan James introduces and profiles sixty mathematicians from the era when mathematics was freed from its classical origins to develop into its modern form. The subjects, all born between 1700 and 1910, come from a wide range of countries, and all made important contributions to mathematics, through their ideas, their teaching, and their influence. James emphasizes their varied life stories, not the details of their mathematical achievements. The book is organized chronologically into ten chapters, each of which contains biographical sketches of six mathematicians. The men and women James has chosen to portray are representative of the history of mathematics, such that their stories, when read in sequence, convey in human terms something of the way in which mathematics developed. Ioan James is a professor at the Mathematical Institute, University of Oxford. He is the author of
Topological Topics (Cambridge, 1983), Fibrewise Topology (Cambridge, 1989), Introduction to Uniform Spaces (Cambridge, 1990),
Topological and Uniform Spaces (Springer-Verlag New York, 1999), and co-author with Michael C. Crabb of Fibrewise Homotopy Theory
(Springer-Verlag New York, 1998), James is the former editor of the London Mathematical Society Lecture Note Series and volume editor
of numerous books. He is the organizer of the Oxford Series of Topology symposia and other conferences, and co-chairman of the Task
Force for Mathematical Sciences of Campaign for Oxford.

The Prince of Mathematics Problems that beset Archimedes, Newton, Euler, Cauchy, Gauss, Monge, Steiner, and other great mathematical
minds. Features squaring the circle, pi, and similar problems. No advanced math is required. Includes 100 problems with proofs.

The Calculus Gallery How a simple equation reshaped mathematics Leonhard Euler’s polyhedron formula describes the structure of many
objects—from soccer balls and gemstones to Buckminster Fuller’s buildings and giant all-carbon molecules. Yet Euler’s theorem is so
simple it can be explained to a child. From ancient Greek geometry to today’s cutting-edge research, Euler’s Gem celebrates the
discovery of Euler’s beloved polyhedron formula and its far-reaching impact on topology, the study of shapes. Using wonderful examples
and numerous illustrations, David Richeson presents this mathematical idea’s many elegant and unexpected applications, such as showing
why there is always some windless spot on earth, how to measure the acreage of a tree farm by counting trees, and how many crayons are
needed to color any map. Filled with a who’s who of brilliant mathematicians who questioned, refined, and contributed to a remarkable
theorem’s development, Euler’s Gem will fascinate every mathematics enthusiast. This paperback edition contains a new preface by the
author.

Euler’s Pioneering Equation Enables teachers to learn the history of mathematics and then incorporate it in undergraduate teaching.

Elements of Algebra This book primarily serves as a historical research monograph on the biographical sketch and career of Leonhard
Euler and his major contributions to numerous areas in the mathematical and physical sciences. It contains fourteen chapters describing
Euler’s works on number theory, algebra, geometry, trigonometry, differential and integral calculus, analysis, infinite series and infinite
products, ordinary and elliptic integrals and special functions, ordinary and partial differential equations, calculus of variations, graph
theory and topology, mechanics and ballistic research, elasticity and fluid mechanics, physics and astronomy, probability and statistics.
The book is written to provide a definitive impression of Euler’s personal and professional life as well as of the range, power, and depth of
his unique contributions. This tricentennial tribute commemorates Euler the great man and Euler the universal mathematician of all time.

Based on the author’s historically motivated method of teaching, special attention is given to demonstrate that Euler’s work had served as
the basis of research and developments of mathematical and physical sciences for the last 300 years. An attempt is also made to examine
his research and its relation to current mathematics and science. Based on a series of Euler’s extraordinary contributions, the historical
development of many different subjects of mathematical sciences is traced with a linking commentary so that it puts the reader at the
forefront of current research. Erratum. Sample Chapter(s). Chapter 1: Mathematics Before Leonhard Euler (434 KB). Contents:
Mathematics Before Leonhard Euler; Brief Biographical Sketch and Career of Leonhard Euler; Euler’s Contributions to Number Theory
and Algebra; Euler’s Contributions to Geometry and Spherical Trigonometry; Euler’s Formula for Polyhedra, Topology and Graph
Theory; Euler’s Contributions to Calculus and Analysis; Euler’s Contributions to the Infinite Series and the Zeta Function; Euler’s Beta
and Gamma Functions and Infinite Products; Euler and Differential Equations; The Euler Equations of Motion in Fluid Mechanics;
Euler’s Contributions to Mechanics and Elasticity; Euler’s Work on the Probability Theory; Euler’s Contributions to Ballistics; Euler and
His Work on Astronomy and Physics. Readership: Undergraduate and graduate students of mathematics, mathematics education, physics,
engineering and science. As well as professionals and prospective mathematical scientists.

The Divine Proportion Explores the aesthetic, emotional, artistic and philosophical significance of geometric figures, scientific patterns
and mathematical formulas

Mathematics in Berlin His ideas turned the mathematical world on its head. As a scientist he should be placed on the same level as Newton
and Einstein. This account of Euler’s life and living is embedded in the great political developments of his time, particularly in Austria,
Prussia and Russia. The comic by Elena Pini (illustrations) and Alice and Andreas K. Heyne (text) follows the life of the genius from Basel,
who, born 300 years ago, would set out to change the scientific world. The book is completed by a short biography of Euler and relevant
data of the most important politicians and contemporaries.

The Mathematical Universe Tracing the roots of mathematics, this fascinating survey covers the ancient beginnings and subsequent
branches of growth in this rich, diverse, and rapidly expanding scientific field, with discussions that progress from the theoretical
mathematics in ancient Mesopotamia and Egypt to the emergence of higher analysis mathematics in the late seventeenth century. Well-
documented, it presents both established and promising emerging theses, with careful consideration throughout to the remappings,
redivisions, and renarrations presented by each new body of historians. Reflects on the nature and roots of mathematics, and a look at
some of our more important historiographical issues. Considers mathematics before civilization, with examinations of the Neolithic
Revolution and writing and metrology in ancient Sumer, and tracks the science from proto- to theoretical mathematics. Provides a broad
survey of mathematics progression in the Islamic world, Latin West, and Maya America from the Middle Ages to 1500, and contain
discussions on such topics as the age of absolutism, the culture of science, inventions of differential and fluxional calculus, as well as
algebra, number theory, and probability.

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