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Matebilandia-Lorenza Resta 2012-03-08 Qual è la forma di un "giro della morte" in un roller-coaster? Che traiettoria descrive il passeggero di una vorticosa giostra? Quando si guarda ad una ruota panoramica si vede davvero una circonferenza? A partire dai consolidati percorsi didattici di Matematica nel parco di Mirabilandia il libro offre, oltre alla loro puntuale descrizione, anche molti spunti di approfondimento teorico e didattico. Viene affrontato il tema della modellizzazione e del suo insegnamento a scuola, del rapporto tra matematica e realtà, del ruolo dell'ambiente di apprendimento, del laboratorio di matematica. Viene illustrato l'utilizzo, a scuola e nei percorsi didattici, di giochi, software e calcolatrici grafiche, e di macchine matematiche, alcune delle quali ideate e costruite appositamente per il progetto Matebilandia. Si approfondiscono applicazioni didattiche di curve geometriche come ellissi, parabole, spirali, epicicloidi, fornendo utili schede di laboratorio pronte per l'utilizzo in aula.

Matebilandia-Sandra Gaudenzi 2012 Qual; la forma di un 'giro della morte' in un roller-coaster? Che traiettoria descrive il passeggero di una vorticosa giostra? Quando si guarda ad una ruota panoramica si vede davvero una circonferenza? A partire dai consolidati percorsi didattici di Matematica nel parco di Mirabilandia il libro offre, oltre alla loro puntuale descrizione, anche molti spunti di approfondimento teorico e didattico. Viene affrontato il tema della modellizzazione e del suo insegnamento a scuola, del rapporto tra matematica e realtÃ, del ruolo dell'ambiente di apprendimento, del laboratorio di matematica. Viene illustrato l'utilizzo, a scuola e nei percorsi didattici, di giochi, software e calcolatrici grafiche, e di macchine matematiche, alcune delle quali ideate e costruite appositamente per il progetto Matebilandia. Si approfondiscono applicazioni didattiche di curve geometriche come ellissi, parabole, spirali, epicicloidi, fornendo utili schede di laboratorio pronte per l'utilizzo in aula.

Bibliografia nazionale italiana- 2011-07

Curves and Surfaces-M. Abate 2012-06-11 The book provides an introduction to Differential Geometry of Curves and Surfaces. The theory of curves starts with a discussion of possible definitions of the concept of curve, proving in particular the classification of 1-dimensional manifolds. We then present the classical local theory of parametrized plane and space curves (curves in n-dimensional space are discussed in the complementary material): curvature, torsion, Frenet's formulas and the fundamental theorem of the local theory of curves. Then, after a self-contained presentation of degree theory for continuous self-maps of the circumference, we study the global theory of plane curves, introducing winding and rotation numbers, and proving the Jordan curve theorem for curves of class C2, and Hopf theorem on the rotation number of closed simple curves. The local theory of surfaces begins with a comparison of the concept of parametrized (i.e., immersed) surface with the concept of regular (i.e., embedded) surface. We then develop the basic differential geometry of surfaces in R3: definitions, examples, differentiable maps and functions, tangent vectors (presented both as vectors tangent to curves in the surface and as derivations on germs of differentiable functions; we shall consistently use both approaches in the whole book) and orientation. Next we study the several notions of curvature on a surface, stressing both the geometrical meaning of the objects introduced and the algebraic/analytical methods needed to study them via the Gauss map, up to the proof of Gauss' Teorema Egregium. Then we introduce vector fields on a surface (flow, first integrals, integral curves) and geodesics (definition, basic properties, geodesic curvature, and, in the complementary material, a full proof of minimizing properties of geodesics and of the Hopf-Rinow theorem for surfaces). Then we shall present a proof of the celebrated Gauss-Bonnet theorem, both in its local and in its

global form, using basic properties (fully proved in the complementary material) of triangulations of surfaces. As an application, we shall prove the Poincaré-Hopf theorem on zeroes of vector fields. Finally, the last chapter will be devoted to several important results on the global theory of surfaces, like for instance the characterization of surfaces with constant Gaussian curvature, and the orientability of compact surfaces in R3.

Teaching Mathematical Modelling: Connecting to Research and Practice-Gloria Ann Stillman 2013-10-27 This book provides readers with an overview of recent international research and developments in the teaching and learning of modelling and applications from a variety of theoretical and practical perspectives. There is a strong focus on pedagogical issues for teaching and learning of modelling as well as research into teaching and practice. The teaching of applications of mathematics and mathematical modelling from the early years through primary and secondary school and at tertiary level is rising in prominence in many parts of the world commensurate with an ever-increasing usage of mathematics in business, the environment, industry and everyday life. The authors are all members of the International Community of Teachers of Mathematical Modelling and Applications and important researchers in mathematics education and mathematics. The book will be of interest to teachers, practitioners and researchers in universities, polytechnics, teacher education, curriculum and policy.

Amusement Park Physics-Clarence Bakken 2011 Amusement park physics gives teachers a gamut of subjects ranging from ways to incorporate amusement parks in classroom work to practical suggestions for taking a class to Physics Day. In between are methods of collecting data and approaches to analyzing it.

Curves for the Mathematically Curious-Julian

Havil 2019-10-15 Ten amazing curves personally selected by one of today's most important math writers Curves for the Mathematically Curious is a thoughtfully 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. In telling the ten stories, Havil introduces many mathematicians and other innovators, some whose fame has withstood the passing of years and others who have slipped into comparative obscurity. You will meet Pierre Bézier, who is known for his ubiquitous and eponymous curves, and Adolphe Quetelet, who trumpeted the ubiquity of the normal curve but whose name now hides behind the modern body mass index. These and other ingenious thinkers engaged with the challenges, incongruities, and insights to be found in these remarkable curves—and now you can share in this adventure. Curves for the Mathematically Curious 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. Every curve has a story worth telling.

Challenging Mathematics In and Beyond the Classroom-Edward J. Barbeau 2009-04-21 In the mid 1980s, the International Commission on Mathematical Instruction (ICMI) inaugurated a series of studies in mathematics education by comm- sioning one on the influence of technology and informatics on mathematics and its teaching. These studies are designed to thoroughly explore topics of c- temporary interest, by gathering together a group of experts who prepare a Study Volume that provides a considered assessment of the current state and a guide to further developments. Studies have embraced a range of issues, some central, such as the teaching of algebra, some closely related, such as the impact of history and psychology, and some looking at mathematics education from a particular

perspective, such as cultural differences between East and West. These studies have been commissioned at the rate of about one per year. Once the ICMI Executive decides on the topic, one or two chairs are selected and then, in consultation with them, an International Program Committee (IPC) of about 12 experts is formed. The IPC then meets and prepares a Discussion Document that sets forth the issues and invites interested parties to submit papers. These papers are the basis for invitations to a Study Conference, at which the various dimensions of the topic are explored and a book, the Study Volume, is sketched out. The book is then put together in collaboration, mainly using electronic communication. The entire process typically takes about six years.

Englisch Ganz Leicht-Johannes Schumann 2006 Geeignet für Lernende mit geringen Vorkenntnissen, die ihren Wortschatz auf spielerische Weise und ohne Anstrengung festigen und erweitern wollen. Der Grundwortschatz Englisch kann damit leicht überprüft, ausgebaut und gefestigt werden. Gleichzeitig werden die Kenntnisse in Grammatik und Landeskunde aufgefrischt. Das Buch enthält jeweils 100 Wortschatztests in mehr als 10 Testformen wie z.B. Kreuzworträtsel, Lückentests, Wortsuchrätsel, Zuweisungsübungen u.a. mit umfangreichem Übungsangebot. Im Anhang findet sich ein Lösungsschlüssel.

Differential Geometry of Curves and Surfaces-Kristopher Tapp 2016-09-30 This is a textbook on differential geometry well-suited to a variety of courses on this topic. For readers seeking an elementary text, the prerequisites are minimal and include plenty of examples and intermediate steps within proofs, while providing an invitation to more excursive applications and advanced topics. For readers bound for graduate school in math or physics, this is a clear, concise, rigorous development of the topic including the deep global theorems. For the benefit of all

readers, the author employs various techniques to render the difficult abstract ideas herein more understandable and engaging. Over 300 color illustrations bring the mathematics to life, instantly clarifying concepts in ways that grayscale could not. Green-boxed definitions and purple-boxed theorems help to visually organize the mathematical content. Color is even used within the text to highlight logical relationships. Applications abound! The study of conformal and equiareal functions is grounded in its application to cartography. Evolutes, involutes and cycloids are introduced through Christiaan Huygens' fascinating story: in attempting to solve the famous longitude problem with a mathematically-improved pendulum clock, he invented mathematics that would later be applied to optics and gears. Clairaut's Theorem is presented as a conservation law for angular momentum. Green's Theorem makes possible a drafting tool called a planimeter. Foucault's Pendulum helps one visualize a parallel vector field along a latitude of the earth. Even better, a south-pointing chariot helps one visualize a parallel vector field along any curve in any surface. In truth, the most profound application of differential geometry is to modern physics, which is beyond the scope of this book. The GPS in any car wouldn't work without general relativity, formalized through the language of differential geometry. Throughout this book, applications, metaphors and visualizations are tools that motivate and clarify the rigorous mathematical content, but never replace it.

I Have a Photographic Memory-Paul R. Halmos 1999-04-27

10 Little Rubber Ducks Board Book-Eric Carle 2010-01-26 10 little rubber ducks overboard! Get swept away on a high-seas voyage of discovery with 10 little rubber ducks as they float to every part of the world. They all find adventure, but one duck finds something very special!

Public and Private Schools-James S. Coleman 1981

Studies in Mathematics Education-Robert W. Morris 1980

Mathematics & Mathematics Education: Searching for Common Ground-Michael N. Fried 2013-11-29 This book is the fruit of a symposium in honor of Ted Eisenberg concerning the growing divide between the mathematics community and the mathematics education community, a divide that is clearly unhealthy for both. The work confronts this disturbing gap by considering the nature of the relationship between mathematics education and mathematics, and by examining areas of commonality as well as disagreement. It seeks to provide insight into the mutual benefit both stand to gain by building bridges based on the natural bonds between them.

Solving Problems in Mathematical Analysis, Part II-Tomasz Radożycki 2020-02-22 This textbook offers an extensive list of completely solved problems in mathematical analysis. This second of three volumes covers definite, improper and multidimensional integrals, functions of several variables, differential equations, and more. The series contains the material corresponding to the first three or four semesters of a course in Mathematical Analysis. Based on the author's years of teaching experience, this work stands out by providing detailed solutions (often several pages long) to the problems. The basic premise of the book is that no topic should be left unexplained, and no question that could realistically arise while studying the solutions should remain unanswered. The style and format are straightforward and accessible. In addition, each chapter includes exercises for students to work on independently. Answers are provided to all problems, allowing students to check their work.

Though chiefly intended for early undergraduate students of Mathematics, Physics and Engineering, the book will also appeal to students from other areas with an interest in Mathematical Analysis, either as supplementary reading or for independent study.

Damnation Marked-SM Reine 2014-03-01 There's something in the earth deep below Elise Kavanagh's territory. A shadow is falling upon local demons to devour their flesh and harvest their souls. And it's coming for Elise next. The Union has an easy way out. They want to send Elise into hiding again with her former partner, James Faulkner. All she has to do is surrender the territory and trust that they can protect the ethereal ruins, the dark gate, and the city she's come to know as home. Greater powers have other plans for Elise and her fabled power as Godslayer–plans that mean surrendering her life and blood to the most powerful demon alive. But if she descends, there's no turning back. Once she gazes into the abyss, it will gaze back into her...and Elise will be damned forever.

Solving Problems in Mathematical Analysis, Part III-Tomasz Radożycki 2020-02-24 This textbook offers an extensive list of completely solved problems in mathematical analysis. This third of three volumes covers curves and surfaces, conditional extremes, curvilinear integrals, complex functions, singularities and Fourier series. The series contains the material corresponding to the first three or four semesters of a course in Mathematical Analysis. Based on the author's years of teaching experience, this work stands out by providing detailed solutions (often several pages long) to the problems. The basic premise of the book is that no topic should be left unexplained, and no question that could realistically arise while studying the solutions should remain unanswered. The style and format are straightforward and accessible. In addition, each chapter includes exercises for students to work on independently. Answers are provided to all problems, allowing students to check their

work. Though chiefly intended for early undergraduate students of Mathematics, Physics and Engineering, the book will also appeal to students from other areas with an interest in Mathematical Analysis, either as supplementary reading or for independent study.

Space-Filling Curves-Michael Bader 2012-10-14 Linking the differing techniques deployed in describing space-filling curves to their corresponding algorithms, this book introduces SFCs as tools in scientific computing, focusing in particular on the representation of SFCs and on the resulting algorithms.

Emus Can't Run Backwards-Angela Ingrassia Arwady 2019-10-27 Emu is a lovely bird, but she has one big problem. She can't run backwards! Follow Emu on her journey as she learns how a little creativity can help you solve the unsolvable.

Extreme Economies-Richard Davies 2020-07-20 To predict our future, we must look to the extremes. So argues the economist Richard Davies, who takes readers to the margins of the modern economy and beyond. These extreme economies illustrate the forces that test human resilience, drive societies to failure, and promise to shape our collective future. Reviving a foundational idea from the medical sciences, Extreme Economies turns the logic of modern economics on its head by arguing that these outlier societies can teach us more about our own than we might imagine. By adapting to circumstances unimaginable to most of us, the people in these societies are pioneering the economic infrastructure of the future.

Hilbert Functions of Filtered Modules-Maria Evelina Rossi 2010-08-25 Hilbert Functions play major roles in Algebraic Geometry and Commutative Algebra, and are becoming increasingly important also in Computational Algebra. They capture many useful numerical

characters associated to a projective variety or to a filtered module over a local ring. Starting from the pioneering work of D.G. Northcott and J. Sally, we aim to gather together in one place many new developments of this theory by using a unifying approach which gives self-contained and easier proofs. The extension of the theory to the case of general filtrations on a module, and its application to the study of certain graded algebras which are not associated to a filtration are two of the main features of the monograph. The material is intended for graduate students and researchers who are interested in Commutative Algebra, in particular in the theory of the Hilbert Functions and related topics.

Convolution Operators on Groups-Antoine Derighetti 2011-06-27 This volume is devoted to a systematic study of the Banach algebra of the convolution operators of a locally compact group. Inspired by classical Fourier analysis we consider operators on Lp spaces, arriving at a description of these operators and Lp versions of the theorems of Wiener and Kaplansky-Helson.

Zeta Functions over Zeros of Zeta Functions-André Voros 2009-11-21 In this text, the famous zeros of the Riemann zeta function and its generalizations (L-functions, Dedekind and Selberg zeta functions)are analyzed through several zeta functions built over those zeros.

Fallocaust-Quil Carter 2014-07-09 Over two hundred and thirty years ago the Fallocaust happened, killing almost everything that lived and creating what is now known as the greywastes. A dead wasteland where cannibalism is a necessity, death your reality, and life before the radiation nothing but pictures in dog-eared magazines. Reaver is a greywaster, living in a small block controlled by a distant ruler said to have started the Fallocaust. He is a product of the savage world he was raised in and prides himself on being cold and cruel. Then someone new to his town catches his eye, someone

different than everyone else. Without knowing why he starts to silently stalk him, unaware of where it will lead him.

Weird But True 9-National Geographic Kids 2017 Offers a collection of true facts about animals, food, science, pop culture, outer space, geography, and weather.

Three O'Clock in the Morning-Gianrico Carofiglio 2021-03-16 "In a real dark night of the soul it is always three o'clock in the morning." - F. Scott Fitzgerald A coming-of-age novel—a heady union of Before Sunrise and Beautiful Ruins—about a father and his teenage son who are forced to spend two sleepless nights exploring the city of Marseilles, a journey of unexpected adventure and profound discovery that helps them come to truly know each other. Antonio is eighteen years old and on the cusp of adulthood. His father, a brilliant mathematician, hasn't played a large part in his life since divorcing Antonio's mother but when Antonio is diagnosed with epilepsy, they travel to Marseille to visit a doctor who may hold the hope for an effective treatment. It is there, in a foreign city, under strained circumstances, that they will get to know each other and connect for the first time. A beautiful, gritty, and charming port city where French old-world charm meets modern bohemia, father and son stroll the streets sharing strained small talk. But as the hours pass and day gives way to night, the two find themselves caught in a series of caffeine-imbued adventures involving unexpected people (and unforeseen trysts) that connect father and son for the first time. As the two discuss poetry, family, sex, math, death, and dreams, their experience becomes a mesmerizing 48-hour microcosm of a lifetime relationship. Both learn much about illusions and regret, about talent and redemption, and, most of all, about love. Elegant, warm, and tender, set against the vivid backdrop of 1980s Marseille and its beautiful calanques—a series of cliffs and bays on the city's outskirts—Three O'Clock in the Morning is a bewitching coming-of-age story

imbued with nostalgia and a revelatory exploration of time and fate, youth and adulthood. Translated from the Italian by Howard Curtis

Professor Stewart's Incredible Numbers-Ian Stewart 2015-04-07 At its heart, mathematics is about numbers, our fundamental tools for understanding the world. In Professor Stewart's Incredible Numbers, Ian Stewart offers a delightful introduction to the numbers that surround us, from the common (Pi and 2) to the uncommon but no less consequential (1.059463 and 43,252,003,274,489,856,000). Along the way, Stewart takes us through prime numbers, cubic equations, the concept of zero, the possible positions on the Rubik's Cube, the role of numbers in human history, and beyond! An unfailingly genial guide, Stewart brings his characteristic wit and erudition to bear on these incredible numbers, offering an engaging primer on the principles and power of math.

An Odyssey-Daniel Adam Mendelsohn 2017-09-12 When eighty-one-year-old retired research scientist Jay Mendelsohn decides to enroll in the undergraduate Odyssey seminar that his son Daniel teaches at Bard College, the two find themselves on a transformative journey in reading--and reliving--Homer's epic masterpiece.

Vogue x Music-Editors of American Vogue 2018-10-30 Vogue has always been on the cutting edge of popular culture, and Vogue x Music shows us why. Whether they're contemporary stars or classic idols, whether they made digital albums or vinyl records, the world's most popular musicians have always graced the pages of Vogue. In this book you'll find unforgettable portraits of Madonna beside David Bowie, Kendrick Lamar, and Patti Smith; St. Vincent alongside Debbie Harry, and much more. Spanning the magazine's 126 years, this breathtaking book is filled with the work of

acclaimed photographers like Richard Avedon and Annie Leibovitz as well as daring, music-inspired fashion portfolios from Irving Penn and Steven Klein. Excerpts from essential interviews with rock stars, blues singers, rappers, and others are included on nearly every page, capturing exactly what makes each musician so indelible. Vogue x Music is a testament to star power, and proves that some looks are as timeless as your favorite albums.

Hyperfinite Dirichlet Forms and Stochastic Processes-Sergio Albeverio 2011-05-27 This monograph treats the theory of Dirichlet forms from a comprehensive point of view, using "nonstandard analysis." Thus, it is close in spirit to the discrete classical formulation of Dirichlet space theory by Beurling and Deny (1958). The discrete infinitesimal setup makes it possible to study the diffusion and the jump part using essentially the same methods. This setting has the advantage of being independent of special topological properties of the state space and in

this sense is a natural one, valid for both finite- and infinite-dimensional spaces. The present monograph provides a thorough treatment of the symmetric as well as the non-symmetric case, surveys the theory of hyperfinite Lévy processes, and summarizes in an epilogue the model-theoretic genericity of hyperfinite stochastic processes theory.

Love and Math-Edward Frenkel 2013-10-01 An awesome, globe-spanning, and New York Times best-selling journey through the beauty and power of mathematics What if you had to take an art class in which you were only taught how to paint a fence? What if you were never shown the paintings of van Gogh and Picasso, weren't even told they existed? Alas, this is how math is taught, and so for most of us it becomes the intellectual equivalent of watching paint dry. In Love and Math, renowned mathematician Edward Frenkel reveals a side of math we've never seen, suffused with all the beauty and elegance of a work of art. In this heartfelt and

passionate book, Frenkel shows that mathematics, far from occupying a specialist niche, goes to the heart of all matter, uniting us across cultures, time, and space. Love and Math tells two intertwined stories: of the wonders of mathematics and of one young man's journey learning and living it. Having braved a discriminatory educational system to become one of the twenty-first century's leading mathematicians, Frenkel now works on one of the biggest ideas to come out of math in the last 50 years: the Langlands Program. Considered by many to be a Grand Unified Theory of mathematics, the Langlands Program enables researchers to translate findings from one field to another so that they can solve problems, such as Fermat's last theorem, that had seemed intractable before. At its core, Love and Math is a story about accessing a new way of thinking, which can enrich our lives and empower us to better understand the world and our place in it. It is an invitation to discover the magic hidden universe of mathematics.

Chaos and Fractals-C.A. Pickover 1998-08-03 These days computer-generated fractal patterns are everywhere, from squiggly designs on computer art posters to illustrations in the most serious of physics journals. Interest continues to grow among scientists and, rather surprisingly, artists and designers. This book provides visual demonstrations of complicated and beautiful structures that can arise in systems, based on simple rules. It also presents papers on seemingly paradoxical combinations of randomness and structure in systems of mathematical, physical, biological, electrical, chemical, and artistic interest. Topics include: iteration, cellular automata, bifurcation maps, fractals, dynamical systems, patterns of nature created through simple rules, and aesthetic graphics drawn from the universe of mathematics and art. Chaos and Fractals is divided into six parts: Geometry and Nature; Attractors; Cellular Automata, Gaskets, and Koch Curves; Mandelbrot, Julia and Other Complex Maps; Iterated Function Systems; and Computer

Art. Additionally, information on the latest practical applications of fractals and on the use of fractals in commercial products such as the antennas and reaction vessels is presented. In short, fractals are increasingly finding application in practical products where computer graphics and simulations are integral to the design process. Each of the six sections has an introduction by the editor including the latest research, references, and updates in the field. This book is enhanced with numerous color illustrations, a comprehensive index, and the many computer program examples encourage reader involvement.

The General Theory of Homogenization-Luc Tartar 2009-12-03 Homogenization is not about periodicity, or Gamma-convergence, but about understanding which effective equations to use at macroscopic level, knowing which partial differential equations govern mesoscopic levels, without using probabilities (which destroy physical reality); instead, one uses various topologies of weak type, the G-convergence of Sergio Spagnolo, the H-convergence of François Murat and the author, and some responsible for the appearance of nonlocal effects, which many theories in continuum mechanics or physics guessed wrongly. For a better understanding of 20th century science, new mathematical tools must be introduced, like the author's H-measures, variants by Patrick Gérard, and others yet to be discovered.

Weird But True!, Level 1-National Geographic Kids 2018-08-28 Offers a collection of true facts about animals, food, science, pop culture, outer space, geography, and weather.

PMR English-

The Mathematics of the Gods and the Algorithms of Men-Paolo Zellini 2020-02-27 Is mathematics a discovery or an invention? Do

numbers truly exist? What sort of reality do formulas describe? The complexity of mathematics - its abstract rules and obscure symbols - can seem very distant from the everyday. There are those things that are real and present, it is supposed, and then there are mathematical concepts: creations of our mind, mysterious tools for those unengaged with the world. Yet, from its most remote history and deepest purpose, mathematics has served not just as a way to understand and order, but also as a foundation for the reality it describes. In this elegant book, mathematician and philosopher Paolo Zellini offers a brief cultural and intellectual history of mathematics, ranging widely from the paradoxes of ancient Greece to the sacred altars of India, from Mesopotamian calculus to our own contemporary obsession with algorithms. Masterful and illuminating, The Mathematics of the Gods and the Algorithms of Men transforms our understanding of mathematical thinking, showing that it is inextricably linked with the philosophical and the religious as well as the mundane - and, indeed, with our own very human experience of the universe.

Global Weirdness-Climate Central 2013 An accessible explanation of climate change summarizes its science while sharing insights into its implications for the future, answering key questions from the role of fossil fuels to the economic costs of reducing carbon emissions.

Trespassing on Einstein's Lawn-Amanda Gefter 2014-01-14 NAMED ONE OF THE BEST BOOKS OF THE YEAR BY KIRKUS REVIEWS In a memoir of family bonding and cutting-edge physics for readers of Brian Greene's The Hidden Reality and Jim Holt's Why Does the World Exist?, Amanda Gefter tells the story of how she conned her way into a career as a science journalist—and wound up hanging out, talking shop, and butting heads with the world's most brilliant minds. At a Chinese restaurant outside of Philadelphia, a father asks his fifteen-year-old

daughter a deceptively simple question: "How would you define nothing?" With that, the girl who once tried to fail geometry as a conscientious objector starts reading up on general relativity and quantum mechanics, as she and her dad embark on a life-altering quest for the answers to the universe's greatest mysteries. Before Amanda Gefter became an accomplished science writer, she was a twenty-one-year-old magazine assistant willing to sneak her and her father, Warren, into a conference devoted to their physics hero, John Wheeler. Posing as journalists, Amanda and Warren met Wheeler, who offered them cryptic clues to the nature of reality: The universe is a self-excited circuit, he said. And, The boundary of a boundary is zero. Baffled, Amanda and Warren vowed to decode the phrases—and with them, the enigmas of existence. When we solve all that, they agreed, we'll write a book. Trespassing on Einstein's Lawn is that book, a memoir of the impassioned hunt that takes Amanda and her father from New York to London to Los Alamos. Along the way, they bump up against quirky science and even quirkier personalities, including Leonard Susskind, the former Bronx plumber who invented string theory; Ed Witten, the soft-spoken genius who coined the enigmatic M-theory; even Stephen Hawking. What they discover is extraordinary: the beginnings of a monumental paradigm shift in cosmology, from a single universe we all share to a splintered reality in which each observer has her own. Reality, the Gefters learn, is radically observer-dependent, far beyond anything of which Einstein or the founders of quantum mechanics ever dreamed—with shattering consequences for our understanding of the universe's origin. And somehow it all ties back to that conversation, to that Chinese restaurant, and to the true meaning of nothing. Throughout their journey, Amanda struggles to make sense of her own life—as her journalism career transforms from illusion to reality, as she searches for her voice as a writer, as she steps from a universe shared with her father to at last carve out one of her own. It's a paradigm shift you might call growing up. By turns hilarious, moving, irreverent, and profound,

Trespassing on Einstein's Lawn weaves together story and science in remarkable ways. By the end, you will never look at the universe the same way again. Praise for Trespassing on Einstein's Lawn "Nothing quite prepared me for this book. Wow. Reading it, I alternated between depression—how could the rest of us science writers ever match this?—and exhilaration."—Scientific American "To Do: Read Trespassing on Einstein's Lawn. Reality doesn't have to bite."—New York "A zany superposition of genres . . . It's at once a coming-of-age chronicle and a father-daughter road trip to the far reaches of this universe and 10,500 others."—The Philadelphia Inquirer

Hitler's Philosophers-Yvonne Sherratt 2013-05-21 A gripping account of the philosophers who supported Hitler's rise to power and those whose lives were wrecked by his regime