

Wiskundeboeken Getal En Ruimte

Linear Lie Groups

This is an introductory undergraduate textbook in set theory. In mathematics these days, essentially everything is a set. Some knowledge of set theory is necessary part of the background everyone needs for further study of mathematics. It is also possible to study set theory for its own interest--it is a subject with intriguing results about simple objects. This book starts with material that nobody can do without. There is no end to what can be learned of set theory, but here is a beginning.

Uncle Petros is a family joke. An ageing recluse, he lives alone in a suburb of Athens, playing chess and tending to his garden. If you didn't know better, you'd surely think he was one of life's failures. But his young nephew suspects otherwise. For Uncle Petros, he discovers, was once a celebrated mathematician, brilliant and foolhardy enough to stake everything on solving a problem that had defied all attempts at proof for nearly three centuries - Goldbach's Conjecture. His quest brings him into contact with some of the century's greatest mathematicians, including the Indian prodigy Ramanujan and the young Alan Turing. But his struggle is lonely and single-minded, and by the end it has apparently destroyed his life. Until that is a final encounter with his nephew opens up to Petros, once more, the deep mysterious beauty of mathematics. Uncle Petros and Goldbach's Conjecture is an inspiring novel of intellectual adventure, proud genius, the

exhilaration of pure mathematics - and the rivalry and antagonism which torment those who pursue impossible goals.

'Math through the Ages' is a treasure, one of the best history of math books at its level ever written. Somehow, it manages to stay true to a surprisingly sophisticated story, while respecting the needs of its audience. Its overview of the subject captures most of what one needs to know, and the 30 sketches are small gems of exposition that stimulate further exploration. --Glen van Brummelen, Quest University, President (2012-14) of the Canadian Society for History and Philosophy of Mathematics Where did math come from? Who thought up all those algebra symbols, and why? What is the story behind π ? ... negative numbers? ... the metric system? ... quadratic equations? ... sine and cosine? ... logs? The 30 independent historical sketches in Math through the Ages answer these questions and many others in an informal, easygoing style that is accessible to teachers, students, and anyone who is curious about the history of mathematical ideas. Each sketch includes Questions and Projects to help you learn more about its topic and to see how the main ideas fit into the bigger picture of history. The 30 short stories are preceded by a 58-page bird's-eye overview of the entire panorama of mathematical history, a whirlwind tour of the most important people, events, and trends that shaped the mathematics we know today. ``What to Read Next'' and reading suggestions after each sketch provide starting points for readers who want to learn more. This book is ideal for a broad spectrum of audiences, including students

in history of mathematics courses at the late high school or early college level, pre-service and in-service teachers, and anyone who just wants to know a little more about the origins of mathematics.

The fun and easy way to get down to business with statistics Stymied by statistics? No fear? this friendly guide offers clear, practical explanations of statistical ideas, techniques, formulas, and calculations, with lots of examples that show you how these concepts apply to your everyday life. Statistics For Dummies shows you how to interpret and critique graphs and charts, determine the odds with probability, guesstimate with confidence using confidence intervals, set up and carry out a hypothesis test, compute statistical formulas, and more. Tracks to a typical first semester statistics course Updated examples resonate with today's students Explanations mirror teaching methods and classroom protocol Packed with practical advice and real-world problems, Statistics For Dummies gives you everything you need to analyze and interpret data for improved classroom or on-the-job performance. Among the traditional purposes of such an introductory course is the training of a student in the conventions of pure mathematics: acquiring a feeling for what is considered a proof, and supplying literate written arguments to support mathematical propositions. To this extent, more than one proof is included for a theorem - where this is considered beneficial - so as to stimulate the students' reasoning for alternate approaches and ideas. The second half of this book, and consequently the second

semester, covers differentiation and integration, as well as the connection between these concepts, as displayed in the general theorem of Stokes. Also included are some beautiful applications of this theory, such as Brouwer's fixed point theorem, and the Dirichlet principle for harmonic functions. Throughout, reference is made to earlier sections, so as to reinforce the main ideas by repetition. Unique in its applications to some topics not usually covered at this level.

An accessible and practical guide to animation programming In effective animation programming, one must be able to rely on theoretical knowledge as well as research-based insights in applicability. This updated version of Animation Maths contains an overview of both. In addition to exploring collision detection, it also puts forward a discussion of programmable kinematics. These physics of motion, designed to complement programming, offer an invaluable tool in adding realism to games and animations. Furthermore, screen effects and image handling are taken to a professional level by a detailed outline of all the basic transformations. The uniqueness of this book lies in its calculus-free approach. In order to cover the basics of the discipline, Animation Maths contains a brief summary of the fundamentals in arithmetics, solving systems and trigonometry. Animation Maths is accompanied by the website www.animationmaths.be which contains online support and useful downloads. 'Animation Maths achieves a perfect balance between deductive mathematics and broad accessibility, particularly through its interactive companion site.' Leo Storme

(Pure Mathematics and Computer Algebra, UGent) 'With Animation Maths, Ivo De Pauw and Bieke Masselis present motion related mathematical subjects, ranging from trigonometry to quaternions and kinematics in an understandable fashion. It's a true game developers toolkit.' Fries Carton (Guerrilla Games, Amsterdam)

Bullshit isn't what it used to be. Now, two science professors give us the tools to dismantle misinformation and think clearly in a world of fake news and bad data. "A modern classic . . . a straight-talking survival guide to the mean streets of a dying democracy and a global pandemic."—Wired Misinformation, disinformation, and fake news abound and it's increasingly difficult to know what's true. Our media environment has become hyperpartisan. Science is conducted by press release. Startup culture elevates bullshit to high art. We are fairly well equipped to spot the sort of old-school bullshit that is based in fancy rhetoric and weasel words, but most of us don't feel qualified to challenge the avalanche of new-school bullshit presented in the language of math, science, or statistics. In *Calling Bullshit*, Professors Carl Bergstrom and Jevin West give us a set of powerful tools to cut through the most intimidating data. You don't need a lot of technical expertise to call out problems with data. Are the numbers or results too good or too dramatic to be true? Is the claim comparing like with like? Is it confirming your personal bias? Drawing on a deep well of expertise in statistics and computational biology, Bergstrom and West exuberantly unpack examples of selection bias and muddled data visualization, distinguish between correlation and causation, and examine the susceptibility of science to modern bullshit. We have always needed people who call bullshit when necessary, whether within a circle of friends, a community of scholars, or the

citizenry of a nation. Now that bullshit has evolved, we need to relearn the art of skepticism. Iran, 1969. In the house of the mosque, the family of Aqa Jaan has lived for eight centuries. The house teems with life, played out under the watchful eyes of the storks that nest on the minarets above. But this family will experience upheaval unknown to previous generations. For in Iran, political unrest is brewing. The shah is losing his hold on power; the ayatollah incites rebellion from his exile in France; and one day the ayatollah returns. The consequences will be felt in every corner of Aqa Jaan's family.

'My favourite author has done it again. Numbers Don't Lie is by far his most accessible book to date, and I highly recommend it to anyone who is curious about the world' Bill Gates Is flying dangerous? How much do the world's cows weigh? And what makes people happy? From Earth's nations and inhabitants, through the fuels and foods that energize them, to the transportation and inventions of our modern world - and how all of this affects the planet itself - in Numbers Don't Lie, Professor Vaclav Smil takes us on a fact-finding adventure, using surprising statistics and illuminating graphs to challenge lazy thinking. Smil is on a mission to make facts matter, because after all, numbers may not lie, but which truth do they convey? 'Smil's title says it all: to understand the world, you need to follow the trendlines, not the headlines. This is a compelling, fascinating, and most important, realistic portrait of the world and where it's going' Steven Pinker 'The best book to read to better understand our world. It should be on every bookshelf!' Linda Yueh 'There is perhaps no other academic who paints pictures with numbers like Smil' Guardian

This book discusses imaginary future generations and how current decision-making will influence those future generations. Markets and democracies focus on the present and

therefore tend to make us forget that we are living in the present, with ancestors preceding and descendants succeeding us. Markets are excellent devices to equate supply and demand in the short term, but not for allocating resources between current and future generations, since future generations do not exist yet. Democracy is also not “applicable” for future generations, since citizens vote for candidates who will serve members of their, i.e., the current, generation. In order to overcome these shortcomings, the authors discuss imaginary future generations and future ministries in the context of current decision-making in fields such as the environment, urban management, forestry, water management, and finance. The idea of imaginary future generations comes from the Native American Iroquois, who had strong norms that compelled them to incorporate the interests of people seven generations ahead when making decisions.

Integrate problem solving into your math curriculum with this tested approach. Explains what math problem solving involves, its importance, and how to develop a program that works. Includes activities, step-by-step teaching suggestions, and a guide.

David Poole's innovative *LINEAR ALGEBRA: A MODERN INTRODUCTION*, 4e emphasizes a vectors approach and better prepares students to make the transition from computational to theoretical mathematics. Balancing theory and applications, the book is written in a conversational style and combines a traditional presentation with a focus on student-centered learning. Theoretical, computational, and applied topics are presented in a flexible yet integrated way. Stressing geometric understanding before computational techniques, vectors and vector geometry are introduced early to help students visualize concepts and develop mathematical maturity for abstract thinking. Additionally, the book includes ample applications

drawn from a variety of disciplines, which reinforce the fact that linear algebra is a valuable tool for modeling real-life problems. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

A guide to the potential and pleasures of math explores the patterns and properties associated with numbers, reveals the origins of mathematical theories and principles, and includes more than one hundred mathematical puzzles

The most comprehensive account of the mathematician's life and work John Napier (1550–1617) is celebrated today as the man who invented logarithms—an enormous intellectual achievement that would soon lead to the development of their mechanical equivalent in the slide rule: the two would serve humanity as the principal means of calculation until the mid-1970s. Yet, despite Napier's pioneering efforts, his life and work have not attracted detailed modern scrutiny. John Napier is the first contemporary biography to take an in-depth look at the multiple facets of Napier's story: his privileged position as the eighth Laird of Merchiston and the son of influential Scottish landowners; his reputation as a magician who dabbled in alchemy; his interest in agriculture; his involvement with a notorious outlaw; his staunch anti-Catholic beliefs; his interactions with such peers as Henry Briggs, Johannes Kepler, and Tycho Brahe; and, most notably, his estimable mathematical legacy. Julian Havil explores Napier's original development of logarithms, the motivations for his approach, and the reasons behind certain adjustments to them. Napier's inventive mathematical ideas also include formulas for solving spherical triangles, "Napier's Bones" (a more basic but extremely popular alternative device for calculation), and the use of decimal notation for fractions and binary arithmetic. Havil also considers Napier's study of the Book of Revelation, which led to

his prediction of the Apocalypse in his first book, *A Plaine Discovery of the Whole Revelation of St. John*—the work for which Napier believed he would be most remembered. John Napier assesses one man's life and the lasting influence of his advancements on the mathematical sciences and beyond.

The field of Games is rapidly expanding, prompting institutions throughout the world to create game development programs and courses focusing on educational games. As a result, games have also become a hot topic in the area of educational technology research. This increased interest is due to the technological advancement of digital games and the fact that a new, digital generation is emerging with a strong gaming background. *Games: Purpose and Potential in Education* focuses on the issues of incorporating games into education and instructional design. Ideas of identity development, gender diversity, motivation, and integrating instructional design within game development are addressed since each of these areas is important in the field of instructional design and can have a significant impact on learning. This volume brings together leading experts, researchers, and instructors in the field of gaming and explores current topics in gaming and simulations, available resources, and the future of the field.

A practical hands-on guide which focuses on interactive programming, numerical computing, and data analysis with IPython. This book is for Python developers who use Python as a scripting language or for software development, and are interested in learning IPython for increasing their productivity during interactive sessions in the console. Knowledge of Python is required, whereas no knowledge of IPython is necessary.

This book presents storytelling in mathematics as a medium for creating a classroom in which

mathematics is appreciated, understood, and enjoyed. The authors demonstrate how students' mathematical activity can be engaged via storytelling. Readers are introduced to many mathematical stories of different kinds, such as stories that provide a frame or a background to mathematical problems, stories that deeply intertwine with the content, and stories that explain concepts or ideas. Moreover, the authors present a framework for creating new stories, ideas for using and enriching existing stories, as well as several techniques for storytelling that make telling more interactive and more appealing to the learner. This book is of interest for those who teach mathematics, or teach teachers to teach mathematics. It may be of interest to those who like stories or like mathematics, or those who dislike either mathematics or stories, but are ready to reconsider their position.

The present book builds upon an earlier work of J. Hale, "Theory of Functional Differential Equations" published in 1977. We have tried to maintain the spirit of that book and have retained approximately one-third of the material intact. One major change was a complete new presentation of linear systems (Chapters 6~9) for retarded and neutral functional differential equations. The theory of dissipative systems (Chapter 4) and global attractors was completely revamped as well as the invariant manifold theory (Chapter 10) near equilibrium points and periodic orbits. A more complete theory of neutral equations is presented (see Chapters 1, 2, 3, 9, and 10). Chapter 12 is completely new and contains a guide to active topics of research. In the sections on supplementary remarks, we have included many references to recent literature, but, of course, not nearly all, because the subject is so extensive. Jack K. Hale
Sjoerd M. Verduyn Lunel Contents Preface..... v Introduction

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This book offers 150 12-lead ECGs and rhythm strips, each with a clinical case history and question. The full ECG is reproduced and a study of it with the case history should be enough to give an answer. On the back the case is examined, with a description of the main features of the ECG along with a clinical interpretation and a "what to do" section. The cases are graded in difficulty. The unique page size allows presentation of all 12-lead ECGs across a single page for clarity. Several of the cases incorporate chest X-rays and coronary angiograms illustrating the appearances that are associated with various cardiac conditions. All the cases are graded in difficulty and are cross-referenced to the new editions of ECG Made Easy and ECG in Practice for further information. For this Fourth Edition over 30 new ECGs have been included, mainly to provide clearer examples, though the book deliberately retains some technically poor records to maintain a 'real-world' perspective.

In his "Géométrie" of 1637 Descartes achieved a monumental innovation of mathematical techniques by introducing what is now called analytic geometry. Yet the key question of the book was foundational rather than technical: When are geometrical objects known with such clarity and distinctness as befits the exact science of geometry? Classically, the answer was sought in procedures of geometrical construction, in particular by ruler and compass, but the introduction of new algebraic techniques made these procedures insufficient. In this detailed study, spanning essentially the period from the first printed edition of Pappus' "Collection" (1588, in Latin translation) and Descartes' death in 1650, Bos explores the current ideas about construction and geometrical exactness, noting that by the time Descartes entered the field the incursion of algebraic techniques, combined with an increasing uncertainty about the proper means of geometrical problem solving, had produced a certain impasse. He then analyses how Descartes transformed geometry by a redefinition of exactness and by a demarcation of geometry's proper subject and procedures in such a way as to incorporate the use of algebraic methods without destroying the true nature of geometry. Although mathematicians later essentially discarded Descartes' methodological convictions, his influence was profound and pervasive. Bos' insistence on the foundational aspects of the "Géométrie" provides new insights both in the genesis of Descartes' masterpiece and in its significance for the development of the conceptions of mathematical exactness.

Euclidesmaandblad voor de didactiek van de wiskunde
Statistics For Dummies
John Wiley & Sons

When Frankie Hermans emerges from a coma after 200 days, he knows his life is

never going to be the same again. For a start, he can't talk, he can't walk and it's a struggle even to wield a pen. And then there's Joe Speedboat -- a boy who arrived in the sleepy village of Lomark like a blazing comet and who's been stirring things up ever since. Whether setting off bombs, racing mopeds or building a bi-plane, Joe has the touch of a magician and the spirit of a daredevil. He also sees a use for Frankie's good right arm beyond writing: as a champion arm-wrestler Frankie will be strong enough to impress his friends, and maybe even win the favour of the gorgeous, golden-haired girl who has them all in a spin. Full of vitality, verve and chutzpah, Joe Speedboat tells the fast-paced story of an unlikely friendship between two boys, and of their lightning dash towards adulthood.

These selected mathematical writings cover the years when the foundations were laid for the theory of numbers, analytic geometry, and the calculus. Originally published in 1986. The Princeton Legacy Library uses the latest print-on-demand technology to again make available previously out-of-print books from the distinguished backlist of Princeton University Press. These editions preserve the original texts of these important books while presenting them in durable paperback and hardcover editions. The goal of the Princeton Legacy Library is to vastly increase access to the rich scholarly heritage found in the thousands of books published by Princeton University Press since its founding in 1905.

Since the publication of the first edition of the present volume in 1980, the stochastic

stability of differential equations has become a very popular subject of research in mathematics and engineering. To date exact formulas for the Lyapunov exponent, the criteria for the moment and almost sure stability, and for the existence of stationary and periodic solutions of stochastic differential equations have been widely used in the literature. In this updated volume readers will find important new results on the moment Lyapunov exponent, stability index and some other fields, obtained after publication of the first edition, and a significantly expanded bibliography. This volume provides a solid foundation for students in graduate courses in mathematics and its applications. It is also useful for those researchers who would like to learn more about this subject, to start their research in this area or to study the properties of concrete mechanical systems subjected to random perturbations.

Clear, detailed exposition that can be understood by readers with no background in advanced mathematics. More than 200 problems and full solutions, plus 100 numerical exercises. 1949 edition.

“What is important for citizens to know and be able to do?” The OECD Programme for International Student Assessment (PISA) seeks to answer that question through the most comprehensive and rigorous international assessment of student knowledge and skills.

#1 INTERNATIONAL BESTSELLER AN ADAM SAVAGE BOOK CLUB PICK The book-length answer to anyone who ever put their hand up in math class and asked, “When

am I ever going to use this in the real world?” “Fun, informative, and relentlessly entertaining, *Humble Pi* is a charming and very readable guide to some of humanity's all-time greatest miscalculations—that also gives you permission to feel a little better about some of your own mistakes.” —Ryan North, author of *How to Invent Everything*

Our whole world is built on math, from the code running a website to the equations enabling the design of skyscrapers and bridges. Most of the time this math works quietly behind the scenes . . . until it doesn't. All sorts of seemingly innocuous mathematical mistakes can have significant consequences. Math is easy to ignore until a misplaced decimal point upends the stock market, a unit conversion error causes a plane to crash, or someone divides by zero and stalls a battleship in the middle of the ocean. Exploring and explaining a litany of glitches, near misses, and mathematical mishaps involving the internet, big data, elections, street signs, lotteries, the Roman Empire, and an Olympic team, Matt Parker uncovers the bizarre ways math trips us up, and what this reveals about its essential place in our world. Getting it wrong has never been more fun.

This second edition updates a course which has proven to be a perfect fit for classes the world over. Engaging content and a strong focus on grammar and vocabulary combine to make this course a hit with both teachers and students. Popular course features have been refreshed with new content, including the imaginative reading and listening topics, 'Culture in Mind', and 'Everyday English' sections. New for the second

edition is a DVD-ROM with the Level 1 Student's Book containing games, extra exercises and videos featuring the photostories' characters as well as a 'Videoke' record-yourself function. There is a full 'Vocabulary bank' at the back of the book which expands upon lexical sets learned in the units.

John Tanner is returning home after serving two years in prison for shooting a man. He arrives home to find that his father has had his safe looted and all his savings taken.

Moreover, the robbers have taken Becky, the woman he went to jail to protect

This text provides a reader-friendly guide to the structural patterns of modern standard Hindi. Ideal for both independent learners and classroom students alike, this book covers the essentials of Hindi grammar in readable, jargon-free sections. Key features include: sections on the speech sounds of Hindi detailed analysis of Hindi sentence structure full examples throughout.

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