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JavaScriptゲームプログラミング□知っておきたい数学と物理の基本 Mathematics Into Type Math into LaTeX Discrete Mathematics First Steps in LaTeX Multimedia Tools for Communicating Mathematics Mathematica3による工科の数学 科捜研・久龍小春の鑑定ファイル 小さな数学者と秘密の鍵 Pythonで学ぶ線形代数学 Reflections on the Foundations of Mathematics Intelligent Computer Mathematics Electronic Information and Communication in Mathematics マグロウヒル大学演習 離散数学（改訂3版） Visualization and Mathematics Organic Mathematics Differentiating Assessment in Middle and High School Mathematics and Science Teaching Mathematics Using ICT Math Physics Foundation of Advanced Remote Sensing Digital Image Processing A Student's Guide to the Study, Practice, and Tools of Modern Mathematics Engineering Mathematics with MATLAB Handbook of Writing for the Mathematical Sciences 高校数学でわかるディープラーニングのしくみ Mathematical Software – ICMS 2016 Interactive Systems for Experimental Applied Mathematics Martingales and Financial Mathematics in Discrete Time Math for Programmers OMDoc -- An Open Markup Format for Mathematical Documents [version 1.2] Mathematics and Philosophy 2 Computational Support for Discrete Mathematics MoCap for Artists Programming Mathematics Using MATLAB More Math Into LaTeX Pythonで動かして学ぶ!あたらしい数学の教科書 機械学習・深層学習に必要な基礎知識 Teaching and Learning Mathematics Online Math into TeX: A Simple Guide to Typesetting Math Using AMS-LaTex Intelligent Computer Mathematics Excelで学ぶ食品微生物学 増殖・死滅の数学モデル予測 Text and Math Into LaTeX Programming Projects in C for Students of Engineering, Science, and Mathematics Intelligent Computer Mathematics

JavaScriptゲームプログラミング□知っておきたい数学と物理の基本

2017-03-24

本書では前提としている言語はhtml javascriptだけです directxやopengl webglといった高度なapiは使いません ゲーム用ライブラリも一切使用しません 自分で数式を実装し その結果をcanvas上に描画しながら2dや3dのゲームを実装してゆきます すべて自分の手でプログラミングすることで 数学や物理の基礎に親しむとともに プログラミングの楽しさを実感してもらうのが本書の狙いです 本書は3部で構成されています 基礎編 では ゲームプログラミングで使用する速度 加速度 三角関数 ベクトル 行列という数学物理の基本をjavascriptのプログラミングを通して解説します 物理や数学の法則をどのようにコードに落とし込むか 多くの例を使って説明します ２d編 では 基礎編 での学習を元に 画像処理 物理エンジンのサンプルプログラムを作成します ３d編 では 簡単な３dビューワの実装を通して3d描画の基礎を学んでゆきます そのあとで ３dを利用したゲーム ブロック崩し 迷路 tiltなど を何種類か作成します 目次 基礎編 第1章 速度 加速度 第2章 三角関数 第3章 ベクトル 第4章 行列 ２d編 第5章 画像処理 第6章 物理エンジン ３d編 第7章 簡易vrml ビューワ 第8章 3d ゲームサンプル

Mathematics Into Type

1999-01-01

this edition updated by arlene o sean and antoinette schleyer of the american mathematical society brings ms swanson s work up to date reflecting the more technical reality of publishing today while it includes information for copy editors proofreaders and production staff to do a thorough traditional copyediting and proofreading of a manuscript and proof copy it is increasingly more useful to authors who have become intricately involved with the typesetting of their manuscripts

Math into LaTeX

2013-12-01

a new chapter a visual introduction to miktex an open source implementation of tex and latex for windows operating systems another new chapter describing amsrefs a simpler method for formatting references that incorporates and replaces bibtex data integrates a major revision to the amsart document class along with updated examples

Discrete Mathematics

2020-10-29

in a comprehensive yet easy to follow manner discrete mathematics for new technology follows the progression from the basic mathematical concepts covered by the gcse in the uk and by high school algebra in the usa to the more sophisticated mathematical concepts examined in the latter stages of the book the book punctuates the rigorous treatment of theory with frequent uses of pertinent examples and exercises enabling readers to achieve a feel for the subject at hand the exercise hints and solutions are provided at the end of the book topics covered include logic and the nature of mathematical proof set theory relations and functions matrices and systems of linear equations algebraic structures boolean algebras and a thorough treatise on graph theory although aimed primarily at computer science students the structured development of the mathematics enables this text to be used by undergraduate mathematicians scientists and others who require an understanding of discrete mathematics

First Steps in LaTeX

1999-10-01

are you in a hurry a friend received a letter from the american mathematical society ams inform ing him that his paper had been accepted for publication in the proceedings of the ams if he submitted it as a lt tex document it would be published in 20 weeks any other format would take almost a year before the appearance in print of the article the friend had it t ex installed on his computer on friday borrowed the manu script of this book and mailed a it t ex version of his article to the ams on monday first steps in yi ex is for the mathematician physicist engineer scientist or technical typist who needs to quickly learn how to write and typeset articles con taining mathematical formulas a quick introduction to e te c and the ams enhancements is provided so that you will be ready to prepare your first article such as the sample articles on pages 53 54 and 67 69 in only a few hours specific topics can be found in the table of contents the quick finder or the index while the index is jt tex oriented the quick finder lists the main topics using terminology common to wordprocessing applications for example to find out how to italicize text look under italics in the quick finder setting the stage watch someone type a mathematical article in i lfe c you will see how to type the document using a text editor to create a jt te c source file

Multimedia Tools for Communicating Mathematics

2012-12-06

this book on multimedia tools for communicating mathematics arose from presentations at an international workshop organized by the centro de matemtica e aplicacoes fundamentais at the university of lisbon in november 2000 with the collaboration of the sonderforschungsbereich 288 at the university of technology in berlin and of the centre for experimental and constructive mathematics at simon fraser university in burnaby canada the mtcm2000 meeting aimed at the scientific methods and algorithms at work inside multimedia tools and it provided an overview of the range of present multimedia projects of their limitations and the underlying mathematical problems this book presents some of the tools and algorithms currently being used to create new ways of making enhanced interactive presentations and multimedia courses it is an invaluable and up to date reference book on multimedia tools presently available for mathematics and related subjects

Mathematica3による工科の数学

1999-05

本書の目的は mathematicaを用いて工科系の大学で学ぶ数学の全体像を概観することです 数学の厳密な記述やコマンドの詳細な説明はできるだけ軽くし すべて実例を通して工科系の数学とmathematicaの機能の基本的な部分が全体として把握できるように配慮してあります

科捜研・久龍小春の鑑定ファイル 小さな数学者と秘密の鍵

2024-04-03

元科捜研研究員の著者が描く 最前線の警察科学捜査ミステリー 特殊捜査班の熊谷は ほぼ全焼した養護施設に向かい 科捜研の小春と共に 出火原因の調査を行う すると煙草の不始末による失火で その煙草を始末したのは 行方不明の少年 望だと判明 彼が書いた遺書も見つかった しかし 望が生きていると踏んだ小春は熊谷と共に捜査を続行し 第22回 このミス 大賞 隠し玉作品

Pythonで学ぶ線形代数学

2020-04-20

pythonを使って線形代数学を見える化して学ぼう 本書は 大学初年次に学ぶ基礎数学科目の一つであり 具体的なところでは機械学習やコンピュータグラフィックス ゲームプログラミングなどの基礎となる線形代数を pythonを使って学ぶものです 線形代数は 微分 積分とならび基礎的な数学の一つですが ふつうに勉強するとベクトル 行列計算が面倒くさく また定義や概念が多く抽象的な表現も多いためなかなか理解しづらい学問といえます そこで本書は pythonによるプログラミングを用いて以下の工夫を施すことで よりわかりやすく またビジュアルにベクトルを見るなどの体験を通して 線形代数を学べるようにまとめたものです 1 2次元平面や3次元空間のベクトルを視覚的に表現する 2 関数をグラフ化することで ベクトル計算の意味を理解しやすくする 3 面倒なベクトルや行列の計算をプログラミングで表現する 4 手計算では不可能な高次の線形計算を 具体的なデータ 音や画像 を用いて表現する 5 通常の教科書の演習問題レベルの計算問題をプログラミングによる数式処理で求める このような方におすすめ 理工系の大学学部生 機械学習や3dゲーム制作などで線形代数を学ぶ必要があるがオーソドックスな数学本はつらいエンジニア pythonによる数式処理を学びたい方 主要目次 第1章 数学の基礎とpythonによる表現 第2章 線形空間と線形写像 第3章 基底と次元 第4章 行列 第5章 行列の基本変形と不変量 第6章 内積とノルム 第7章 固有値と固有ベクトル 第8章 ジョルダン標準形とスペクトル集合 第9章 力学系 第10章 線形代数の応用と発展

Reflections on the Foundations of Mathematics

2019-11-11

this edited work presents contemporary mathematical practice in the foundational mathematical theories in particular set theory and the univalent foundations it shares the work of significant scholars across the disciplines of mathematics philosophy and computer science readers will discover systematic thought on criteria for a suitable foundation in mathematics and philosophical reflections around the mathematical perspectives the volume is divided into three sections the first two of which focus on the two most prominent candidate theories for a foundation of mathematics readers may trace current research in set theory which has widely been assumed to serve as a framework for foundational issues as well as new material elaborating on the univalent foundations considering an approach based on homotopy type theory hott the third section then builds on this and is centred on philosophical questions connected to the foundations of mathematics here the authors contribute to discussions on foundational criteria with more general thoughts on the foundations of mathematics which are not connected to particular theories this book shares the work of some of the most important scholars in the fields of set theory s friedman non classical logic g priest and the philosophy of mathematics p maddy the reader will become aware of the advantages of each theory and objections to it as a foundation following the latest and best work across the disciplines and it is therefore a valuable read for anyone working on the foundations of mathematics or in the philosophy of mathematics

Intelligent Computer Mathematics

2014-06-30

this book constitutes the joint refereed proceedings of calculemus 2014 digital mathematics libraries dml 2014 mathematical knowledge management mkm 2014 and systems and projects s p 2014 held in coimbra portugal during july 7 11 2014 as four tracks of cicm 2014 the conferences on intelligent computer mathematics the 26 full papers and 9 systems and projects descriptions presented together with 5 invited talks were carefully reviewed and selected from a total of 55 submissions the calculemus track of cicm examines the integration of symbolic computation and mechanized reasoning the digital mathematics libraries track evolved from the dml workshop series features math aware technologies standards algorithms and processes towards the fulfillment of the dream of a global dml the mathematical knowledge management track of cicm is concerned with all aspects of managing mathematical knowledge in the informal semi formal and formal settings the systems and projects track presents short descriptions of existing systems or on going projects in the areas of all the other tracks of the conference

Electronic Information and Communication in Mathematics

2003-09-03

this book constitutes the thoroughly refereed post proceedings of the icm 2002 international satellite conference on electronic information and communication in mathematics held in beijing china in august 2002 the 18 revised and reviewed papers assess the state of the art of the production and dissemination of electronic information in mathematics among the topics addressed are models and standards for information and metainformation representation data search discovery retrieval and analysis access to distributed and heterogeneous digital collections intelligent user interfaces to digital libraries information agents and cooperative work on mathematical data digital collection generation business models and data security and protection

マグロウヒル大学演習 離散数学（改訂*3*版）

2024-06-07

基礎から始めて必ず修得できる教科書 自習書の決定版 本書は 長年にわたり全世界で教科書や自習書として広く利用され 定評を得ている米国mcgraw hill社のschaum s outline seriesの日本語翻訳版です コンピュータ科学を学ぼうとする学生を主対象に 論理代数からグラフ理論 数え上げ アルゴリズム 形式言語とオートマトンまで コンピュータ科学に必要な数学の基礎を例題解説と演習問題を通して確実に身につけることができるよう構成されています 改訂版の日本語版では 原著者と原書出版社の理解を得て 日本における標準的な離散数学のカリキュラムに沿う形で 一部の章の割愛と 日本語版オリジナルとして 序章および付録の追加を行っています このような方におすすめ 情報科学 情報工学 情報処理学科などの理工系および文科系の大学学部 短大 高専 専修学校の学生 教官の方ならびに数学に興味をもっている方 主要目次 序章 集合論 関係 関数およびアルゴリズムの基礎知識 第1章 論理と命題計算 第2章 数え上げ 順列と組合せ 第3章 数え上げの発展的技法 再帰 第4章 グラフ理論 第5章 有向グラフ 第6章 2分木 第7章 整数の性質 第8章 言語 オートマトン 文法 第9章 有限状態機械とチューリングマシン 第10章 順序集合および束 第11章 ブール代数 付録 代数系と暗号

Visualization and Mathematics

2012-12-06

visualization and mathematics have begun a fruitful relationship establishing links between problems and solutions of both fields in some areas of mathematics like differential geometry and numerical mathematics visualization techniques are applied with great success however visualization methods are relying heavily on mathematical concepts applications of visualization in mathematical research and the use of mathematical methods in visualization have been topic of an international workshop in berlin in june 1995 selected contributions treat topics of particular interest in current research experts are reporting on their latest work giving an overview on this fascinating new area the reader will get insight to state of the art techniques for solving visualization problems and mathematical questions

Organic Mathematics

1997

this volume is the hardcopy version of the electronic manuscript proceedings of the organic mathematics workshop held at simon fraser university in december 1995 cecm sfu ca organics the book provides a fixed easily referenced and permanent version of what is otherwise an evolving document contained in this work is a collection of articles on experimental and computational mathematics contributed by leading mathematicians around the world the papers span a variety of mathematical fields from juggling to differential equations to prime number theory the book also contains biographies and photos of the contributing mathematicians and an in depth characterization of organic mathematics

Differentiating Assessment in Middle and High School Mathematics and Science

2013-09-05

this book by sheryn spencer waterman follows the bestselling handbook on differentiated instruction for middle and high schools with numerous examples and strategies it is an all inclusive manual on assessing student readiness interests learning and thinking styles it includes examples of pre formative and summative assessments informal and formal assessments oral and written assessments project and performance assessments highly structured and enrichment assessments for struggling to gifted students assessment tools and rubrics

Teaching Mathematics Using ICT

2010-04-08

this fully updated third edition of teaching mathematics using ict incorporates all the most recent developments in mathematics education including the new national curriculum and recent ofsted maths report the authors also bring the hardware and software sections of the book right up to date as well as telling you where to find all the best free resources the book reflects the shift in focus to personalized learning and cross curricular approaches and suggested answers to the reflective questions peppered throughout the text are featured on the book s dedicated website this user friendly book is the definitive guide to using ict to teach mathematics and will be a valuable resource for all secondary school maths teachers and trainees

Math Physics Foundation of Advanced Remote Sensing Digital Image Processing

2023-07-31

this book focuses on the mathematical and physical foundations of remote sensing digital image processing and introduces key algorithms utilized in this area the book fully introduces the basic mathematical and physical process of digital imaging the basic theory and algorithm of pixel image processing and the higher order image processing algorithm and its application this book skillfully and closely integrates theory algorithms and applications making it simple for readers to understand and use researchers and students working in the fields of remote sensing computer vision geographic information science electronic information etc can profit from this book for their work and research in digital image processing they can master the fundamentals of imaging and image processing techniques

A Student's Guide to the Study, Practice, and Tools of Modern Mathematics

2010-11-29

a student s guide to the study practice and tools of modern mathematics provides an accessible introduction to the world of mathematics it offers tips on how to study and write mathematics as well as how to use various mathematical tools from latex and beamer to mathematica and maple to matlab and r along with a color insert the text include

Engineering Mathematics with MATLAB

2019-02-01

chapter 1 vectors and matrices 1 1 vectors 1 1 1 geometry with vector 1 1 2 dot product 1 1 3 cross product 1 1 4 lines and planes 1 1 5 vector space 1 1 6 coordinate systems 1 1 7 gram schmidt orthonolization 1 2 matrices 1 2 1 matrix algebra 1 2 2 rank and row column spaces 1 2 3 determinant and trace 1 2 4 eigenvalues and eigenvectors 1 2 5 inverse of a matrix 1 2 6 similarity transformation and diagonalization 1 2 7 special matrices 1 2 8 positive definiteness 1 2 9 matrix inversion lemma 1 2 10 lu cholesky qr and singular value decompositions 1 2 11 physical meaning of eigenvalues eigenvectors 1 3 systems of linear equations 1 3 1 nonsingular case 1 3 2 undetermined case minimum norm solution 1 3 3 overdetermined case least squares error solution 1 3 4 gauss ian elimination 1 3 5 rls recursive least squares algorithm problems chapter 2 vector calculus 2 1 derivatives 2 2 vector functions 2 3 velocity and acceleration 2 4 divergence and curl 2 5 line integrals and path independence 2 5 1 line integrals 2 5 2 path independence 2 6 double integrals 2 7 green s theorem 2 8 surface integrals 2 9 stokes theorem 2 10 triple integrals 2 11 divergence theorem problems chapter 3 ordinary differential equation 3 1 first order differential equations 3 1 1 separable equations 3 1 2 exact differential equations and integrating factors 3 1 3 linear first order differential equations 3 1 4 nonlinear first order differential equations 3 1 5 systems of first order differential equations 3 2 higher order differential equations 3 2 1 undetermined coefficients 3 2 2 variation of parameters 3 2 3 cauchy euler equations 3 2 4 systems of linear differential equations 3 3 special second order linear odes 3 3 1 bessel s equation 3 3 2 legendre s equation 3 3 3 chebyshev s equation 3 3 4 hermite s equation 3 3 5 laguerre s equation 3 4 boundary value problems problems chapter 4 laplace transform 4 1 definition of the laplace transform 4 1 1 laplace transform of the unit step function 4 1 2 laplace transform of the unit impulse function 4 1 3 laplace transform of the ramp function 4 1 4 laplace transform of the exponential function 4 1 5 laplace transform of the complex exponential function 4 2 properties of the laplace transform 4 2 1 linearity 4 2 2 time differentiation 4 2 3 time integration 4 2 4 time shifting real translation 4 2 5 frequency shifting complex translation 4 2 6 real convolution 4 2 7 partial differentiation 4 2 8 complex differentiation 4 2 9 initial value theorem ivt 4 2 10 final value theorem fvt 4 3 the inverse laplace transform 4 4 using of the laplace transform 4 5 transfer function of a continuous time system problems 300 chapter 5 the z transform 5 1 definition of the z transform 5 2 properties of the z transform 5 2 1 linearity 5 2 2 time shifting real translation 5 2 3 frequency shifting complex translation 5 2 4 time reversal 5 2 5 real convolution 5 2 6 complex convolution 5 2 7 complex differentiation 5 2 8 partial differentiation 5 2 9 initial value theorem 5 2 10 final value theorem 5 3 the inverse z transform 5 4 using the z transform 5 5 transfer function of a discrete time system 5 6 differential equation and difference equation problems chapter 6 fourier series and fourier transform 6 1 continuous time fourier series ctfs 6 1 1 definition and convergence conditions 6 1 2 examples of ctfs 6 2 continuous time fourier transform ctft 6 2 1 definition and convergence conditions 6 2 2 generalized ctft of periodic signals 6 2 3 examples of ctft 6 2 4 properties of ctft 6 3 discrete time fourier transform dtft 6 3 1 definition and convergence conditions 6 3 2 examples of dtft 6 3 3 dtft of periodic sequences 6 3 4 properties of dtft 6 4 discrete fourier transform dft 6 5 fast fourier transform fft 6 5 1 decimation in time dit fft 6 5 2 decimation in frequency dif fft 6 5 3 computation of idft using fft algorithm 6 5 4 interpretation of dft results 6 6 fourier bessel legendre chebyshev cosine sine series 6 6 1 fourier bessel series 6 6 2 fourier legendre series 6 6 3 fourier chebyshev series 6 6 4 fourier cosine sine series problems chapter 7 partial differential equation 7 1 elliptic pde 7 2 parabolic pde 7 2 1 the explicit forward euler method 7 2 2 the implicit forward euler method 7 2 3 the crank nicholson method 7 2 4 using the matlab function pdepe 7 2 5 two dimensional parabolic pdes 7 3 hyperbolic pdes 7 3 1 the explict central difference method 7 3 2 tw dimensional hyperbolic pdes 7 4 pdes in other coordinate systems 7 4 1 pdes in polar cylindrical coordinates 7 4 2 pdes in spherical coordinates 7 5 laplace fourier transforms for solving pdes 7 5 1 using the laplace transform for pdes 7 5 2 using the fourier transform for pdes problems chapter 8 complex analysis 509 8 1 functions of a complex variable 8 1 1 complex numbers and their powers roots 8 1 2 functions of a complex variable 8 1 3 cauchy riemann equations 8 1 4 exponential and logarithmic functions 8 1 5 trigonometric and hyperbolic functions 8 1 6 inverse trigonometric hyperbolic functions 8 2 conformal mapping 8 2 1 conformal mappings 8 2 2 linear fractional transformations 8 3 integration of complex functions 8 3 1 line integrals and contour integrals 8 3 2 cauchy goursat theorem 8 3 3 cauchy s integral formula 8 4 series and residues 8 4 1 sequences and series 8 4 2 taylor series 8 4 3 laurent series 8 4 4 residues and residue theorem 8 4 5 real integrals using residue theorem problems chapter 9 optimization 9 1 unconstrained optimization 9 1 1 golden search method 9 1 2 quadratic approximation method 9 1 3 nelder mead method 9 1 4 steepest descent method 9 1 5 newton method 9 2 constrained optimization 9 2 1 lagrange multiplier method 9 2 2 penalty function method 9 3 matlab built in functions for optimization 9 3 1 unconstrained optimization 9 3 2 constrained optimization 9 3 3 linear programming lp 9 3 4 mixed integer linear programing milp problems chapter 10 probability 10 1 probability 10 1 1 definition of probability 10 1 2 permutations and combinations 10 1 3 joint probability conditional probability and bayes rule 10 2 random variables 10 2 1 random variables and probability distribution density function 10 2 2 joint probability density function 10 2 3 conditional probability density function 10 2 4 independence 10 2 5 function of a random variable 10 2 6 expectation variance and correlation 10 2 7 conditional expectation 10 2 8 central limit theorem normal convergence theorem 10 3 ml estimator and map estimator 653 problems

Handbook of Writing for the Mathematical Sciences

1998-01-01

this handy volume enlivened by anecdotes unusual paper titles and humorous quotations provides even more information on the issues you will face when writing a technical paper or talk from choosing the right journal in which to publish to handling your references its overview of the entire publication process is invaluable for anyone hoping to publish in a technical journal

高校数学でわかるディープラーニングのしくみ

2019-12-11

この商品はタブレットなど大きいディスプレイを備えた端末で読むことに適しています また 文字だけを拡大することや 文字列のハイライト 検索 辞書の参照 引用などの機能が使用できません aiという言葉をメディアで目にしない日はありません これはartificial intelligenceの頭文字をとったもので 人工知能を意味します 1990年代には工場のラインを支えるロボットの 人工知能が産業を大きく変えました しかし その時の人工知能は完全に人間から教え込まれるタイプのものでした それに対し 現在の ai は 自ら学んでいくタイプのものです それを実現する手段の一つがディープラーニングです 本書では 人間の脳のニューロンの働きを数学的に抽象化し 人工的にネットワーク化した ニューラルネットワーク を基本とする ディープラーニングのしくみを 高校までの数学で丁寧に解説していきます

Mathematical Software – ICMS 2016

2016-07-05

this book constitutes the proceedings of the 5th international conference on mathematical software icms 2015 held in berlin germany in july 2016 the 68 papers included in this volume were carefully reviewed and selected from numerous submissions the papers are organized in topical sections named univalent foundations and proof assistants software for mathematical reasoning and applications algebraic and toric geometry algebraic geometry in applications software of polynomial systems software for numerically solving polynomial systems high precision arithmetic effective analysis and special functions mathematical optimization interactive operation to scientific artwork and mathematical reasoning information services for mathematics software services models and data semdml towards a semantic layer of a world digital mathematical library miscellanea

Interactive Systems for Experimental Applied Mathematics

2012-12-02

interactive systems for experimental applied mathematics is a collection of papers presented at the 1967 association for computing machinery acm inc symposium on interactive systems for experimental mathematics held in washington d c in conjunction with the acm national meeting this book is organized into five parts encompassing 46 chapters the opening part deals with the general criteria for interactive on line systems that seem most important for the experimental solution of mathematical problems this part specifically describes the amtran reduce easl pose venus and charybdis computer systems and languages the next two parts cover the components of interactive systems including coherent programming interactive console mathematical symbol processing message system and computer aided instruction the fourth part examines a scheme for permitting a user of conventional procedural programming languages namely fortran to test actual error propagation in numerical calculations this part also describes the features of analyst assistance program an on line graphically oriented conversational computing system designed to perform small nonrecurring numerical computations the concluding part presents several implications of selected computer systems the resulting problems and their proposed solutions this book is of great benefit to computer scientists and engineers mathematicians and undergraduate and graduate students in applied mathematics

Martingales and Financial Mathematics in Discrete Time

2022-01-26

this book is entirely devoted to discrete time and provides a detailed introduction to the construction of the rigorous mathematical tools required for the evaluation of options in financial markets both theoretical and practical aspects are explored through multiple examples and exercises for which complete solutions are provided particular attention is paid to the cox ross and rubinstein model in discrete time the book offers a combination of mathematical teaching and numerous exercises for wide appeal it is a useful reference for students at the master s or doctoral level who are specializing in applied mathematics or finance as well as teachers researchers in the field of economics or actuarial science or professionals working in the various financial sectors martingales and financial mathematics in discrete time is also for anyone who may be interested in a rigorous and accessible mathematical construction of the tools and concepts used in financial mathematics or in the application of the martingale theory in finance

Math for Programmers

2020-11-30

a gentle introduction to some of the most useful mathematical concepts that should be in your developer toolbox christopher haupt new relic explore important mathematical concepts through hands on coding purchase of the print book includes a free ebook in pdf kindle and epub formats from manning publications filled with graphics and more than 300 exercises and mini projects this book unlocks the door to interesting and lucrative careers in some of today s hottest fields as you tackle the basics of linear algebra calculus and machine learning you ll master the key python libraries used to turn them into real world software applications summary to score a job in data science machine learning computer graphics and cryptography you need to bring strong math skills to the party math for programmers teaches the math you need for these hot careers concentrating on what you need to know as a developer filled with lots of helpful graphics and more than 200 exercises and mini projects this book unlocks the door to interesting and lucrative careers in some of today s hottest programming fields about the technology skip the mathematical jargon this one of a kind book uses python to teach the math you need to build games simulations 3d graphics and machine learning algorithms discover how algebra and calculus come alive when you see them in code what s inside vector geometry for computer graphics matrices and linear transformations core concepts from calculus simulation and optimization image and audio processing machine learning algorithms for regression and classification about the reader for programmers with basic skills in algebra about the author paul orland is a programmer software entrepreneur and math enthusiast he is co founder of tachyus a start up building predictive analytics software for the energy industry you can find him online at paulor land table of contents 1 learning math with code part i vectors and graphics 2 drawing with 2d vectors 3 ascending to the 3d world 4 transforming vectors and graphics 5 computing transformations with matrices 6 generalizing to higher dimensions 7 solving systems of linear equations part 2 calculus and physical simulation 8 understanding rates of change 9 simulating moving objects 10 working with symbolic expressions 11 simulating force fields 12 optimizing a physical system 13 analyzing sound waves with a fourier series part 3 machine learning applications 14 fitting functions to data 15 classifying data with logistic regression 16 training neural networks

OMDoc -- An Open Markup Format for Mathematical Documents [version 1.2]

2006-08-17

open mathematical documents omdoc is a content markup scheme for mathematical documents including articles textbooks interactive books and courses omdoc also serves as the content language for agent communication of mathematical services and a mathematical software bus this book documents omdoc version 1 2 the final and mature release of omdoc 1 the system has been validated in varied applications and features modularized language design openmath and mathml for the representation of mathematical objects

Mathematics and Philosophy 2

2023-05-09

from pythagoreans to hegel and beyond this book gives a brief overview of the history of the notion of graphs and introduces the main concepts of graph theory in order to apply them to philosophy in addition this book presents how philosophers can use various mathematical notions of order throughout the book philosophical operations and concepts are defined through examining questions relating the two kinds of known infinities discrete and continuous and how woodin s approach can influence elements of philosophy we also examine how mathematics can help a philosopher to discover the elements of stability which will help to build an image of the world even if various approaches for example negative theology generally cannot be valid finally we briefly consider the possibilities of weakening formal thought represented by fuzziness and neutrosophic graphs in a nutshell this book expresses the importance of graphs when representing ideas and communicating them clearly with others

Computational Support for Discrete Mathematics

2008

with recent technological advances in workstations graphics graphical user interfaces and object oriented programming languages a significant number of researchers are developing general purpose software and integrated software systems for domains in discrete mathematics including graph theory combinatorics combinatorial optimization and sets this software aims to provide effective computational tools for research applications prototyping and teaching in march 1992 dimacs sponsored a workshop on computational support for discrete mathematics in order to facilitate interactions between the researchers developers and educators who work in these areas containing refereed papers based on talks presented at the workshop this volume documents current and past research in these areas and should provide impetus for new interactions

MoCap for Artists

2020-05-09

make motion capture part of you graphics and effects arsenal with a mastery of the state of the art systems and workflows

Programming Mathematics Using MATLAB

2016-02-15

providing an alternative to engineering focused resources in the area programming mathematics using matlab introduces the basics of programming and of using matlab by highlighting many mathematical examples emphasizing mathematical concepts through the visualization of programming throughout the book this useful resource utilizes examples that may be familiar to math students such as numerical integration and others that may be new such as fractals additionally the text uniquely offers a variety of matlab projects all of which have been class tested thoroughly and which enable students to put matlab programming into practice while expanding their comprehension of concepts such as taylor polynomials and the gram schmidt process programming mathematics using matlab is appropriate for readers familiar with sophomore level mathematics vectors matrices multivariable calculus and is useful for math courses focused on matlab specifically and those focused on mathematical concepts which seek to utilize matlab in the classroom provides useful visual examples throughout for student comprehension includes valuable class tested projects to reinforce both familiarity with matlab and a deeper understanding of mathematical principles offers downloadable matlab scripts to supplement practice and provide useful example

More Math Into LaTeX

2019-09-17

for over two decades this comprehensive manual has been the standard introduction and complete reference for writing articles and books containing mathematical formulas if the reader requires a streamlined approach to learning latex for composing everyday documents grätzer s 2014 practical latex may also be a good choice in this carefully revised fifth edition the short course has been brought up to date and reflects a modern and practical approach to latex usage new chapters have been added on illustrations and how to use latex on an ipad key features an example based visual approach and a gentle introduction with the short course a detailed exposition of multiline math formulas with a visual guide a unified approach to tex latex and the ams enhancements a quick introduction to creating presentations with formulas from earlier reviews grätzer s book is a solution european mathematical society newsletter there are several latex guides but this one wins hands down for the elegance of its approach and breadth of coverage amazon com best of 2000 editor s choice a novice reader will be able to learn the most essential features of latex sufficient to begin typesetting papers within a few hours of time an experienced tex user on the other hand will find a systematic and detailed discussion of latex features report on mathematical physics a very helpful and useful tool for all scientists and engineers review of astronomical tools

Pythonで動かして学ぶ!あたらしい数学の教科書 機械学習・深層学習に必要な基礎知識

2020-05-10

ai開発に必要な数学の基礎知識がこれ1冊でわかる 本書の目的 本書は以下のような対象読者に向けて 線形代数 確率 統計 微分 といった数学の基礎知識をわかりやすく解説した書籍です 対象読者 数学がaiや機械学習を勉強する際の障壁になっている方 aiをビジネスで扱う必要に迫られた方 数学を改めて学び直したい方 文系の方 非エンジニアの方で数学の知識に自信のない方 コードを書きながら数学を学びたい方 目次 序章 イントロダクション 第1章 学習の準備をしよう 第2章 pythonの基礎 第3章 数学の基礎 第4章 線形代数 第5章 微分 第6章 確率 統計 第7章 数学を機械学習で実践 appendix さらに学びたい方のために 本電子書籍は同名出版物を底本として作成しました 記載内容は印刷出版当時のものです 印刷出版再現のため電子書籍としては不要な情報を含んでいる場合があります 印刷出版とは異なる表記 表現の場合があります 予めご了承ください プレビューにてお手持ちの電子端末での表示状態をご確認の上 商品をお買い求めください 翔泳社

Teaching and Learning Mathematics Online

2013-11-09

online education has become a major component of higher education worldwide in mathematics and statistics courses there exists a number of challenges that are unique to the teaching and learning of mathematics and statistics in an online environment these challenges are deeply connected to already existing difficulties related to math anxiety conceptual understanding of mathematical ideas communicating mathematically and the appropriate use of technology teaching and learning mathematics online bridges these issues by presenting meaningful and practical solutions for teaching mathematics and statistics online it focuses on the problems observed by mathematics instructors currently working in the field who strive to hone their craft and share best practices with our professional community the book provides a set of standard practices improving the quality of online teaching and the learning of mathematics instructors will benefit from learning new techniques and approaches to delivering content features based on the experiences of working educators in the field assimilates the latest technology developments for interactive distance education focuses on mathematical education for developing early mathematics courses

Math into TeX: A Simple Guide to Typesetting Math Using AMS-LaTex

2008-07-27

this book constitutes the joint refereed proceedings of the 9th international conference on artificial intelligence and symbolic computation aisc 2008 the 15th symposium on the integration of symbolic computation and mechanized reasoning calculemus 2008 and the 7th international conference on mathematical knowledge management mkm 2008 held in birmingham uk in july august as cicm 2008 the conferences on intelligent computer mathematics the 14 revised full papers for aisc 2008 10 revised full papers for calculemus 2008 and 18 revised full papers for mkm 2008 plus 5 invited talks were carefully reviewed and selected from a total of 81 submissions for a joint presentation in the book the papers cover different aspects of traditional branches in cs such as computer algebra theorem proving and artificial intelligence in general as well as newly emerging ones such as user interfaces knowledge management and theory exploration thus facilitating the development of integrated mechanized mathematical assistants that will be routinely used by mathematicians computer scientists and engineers in their every day business

Intelligent Computer Mathematics

2015-12-18

食品を汚染する微生物の増殖 死滅のモデルをシミュレーションする 本書は食品を汚染する微生物が食品の製造及び流通過程でどのように増殖するかあるいは殺菌されるのかを数学モデルを使って解析し さらに予測し 食品の安全性確保のために役立てることを目的として書かれたものです またexcelを使ってモデルのシミュレーションができます このような方におすすめ食品企業での実務者 食品衛生行政関係者 食品工学 生物工学 食品衛生学 分野の学生主要目次はじめに 第1部 基礎編 第1章 食品における微生物の増殖と死滅 第2章 excelを用いた数値計算とグラフ作成 第3章 基礎となる数学とモデル評価 第2部 微生物の増殖解析 第4章 基本増殖モデル 第5章 環境要因モデル 第6章 増殖予測とその応用 第7章 微生物間の競合 第8章 毒素産生 第3部 微生物の死滅解析 第9章 基本熱死滅モ

デル 第10章 熱死滅の環境要因モデル 第11章 熱死滅の予測 第12章 加熱殺菌の評価 f値 第13章 食品内部温度および熱死滅の推定 第14章 各種熱死滅モデル 第15章 その他の物理化学的ストレスによる死滅

*Excel*で学ぶ食品微生物学 増殖・死滅の数学モデル予測

2024

for more than 30 years this comprehensive manual has been the standard introduction and complete reference for writing articles and books containing mathematical formulas this sixth edition uses a slightly changed title text and math into latex to emphasize the importance of text in mathematical scientific composition sections that contained commands no longer much needed such as includeonly and the introductory sections to pdf now ubiquitous have been omitted many sections are now enhanced with discussion of new and useful packages an occasional encouragement for the reader to consult chatgpt for confirmation on various points illustrates the positive relationship between chatgpt and latex the new chapter 17 describes recent developments that enhance or replace bibtex the new appendix c introduces the reader to chatgpt

Text and Math Into LaTeX

2014-09-03

like a pianist who practices from a book of études readers of programming projects in c for students of engineering science and mathematics will learn by doing written as a tutorial on how to think about organize and implement programs in scientific computing this book achieves its goal through an eclectic and wide ranging collection of projects each project presents a problem and an algorithm for solving it the reader is guided through implementing the algorithm in c and compiling and testing the results it is not necessary to carry out the projects in sequential order the projects contain suggested algorithms and partially completed programs for implementing them to enable the reader to exercise and develop skills in scientific computing require only a working knowledge of undergraduate multivariable calculus differential equations and linear algebra and are written in platform independent standard c the unix command line is used to illustrate compilation and execution

Programming Projects in C for Students of Engineering, Science, and Mathematics

2016-07-11

this book constitutes the refereed proceedings of the 9th international conference on intelligent computer mathematics cicm 2016 held in bialystok poland in july 2016 the 10 full papers and 2 short papers presented were carefully reviewed and selectedfrom a total of 41 submissions the papers are organized in topical sections according to the five tracks of the conference calculemus digital mathematics libraries mathematical knowledge management surveys and projects and systems and data

Intelligent Computer Mathematics

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