1. Record Nr. UNINA9910454291203321

Titolo	Selected topics in post-genome knowledge discovery [[electronic resource] /] / editor[s], Limsoon Wong, Louxin Zhang
Pubbl/distr/stampa	Singapore, : Singapore University Press Singapore ; ; River Edge, NJ, : World Scientific Pub. Co., c2004
ISBN	1-281-93473-9 9786611934736 981-279-484-0
Descrizione fisica	1 online resource (176 p.)
Collana	Lecture notes series ; ; vol. 3
Altri autori (Persone)	WongLimsoon <1965-> ZhangLouxin
Disciplina	572.8 572.80285
Soggetti	Genetics - Mathematics Genetics Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Contents ; Foreword ; Preface ; Dynamic Programming Strategies for Analyzing Biomolecular Sequences ; 1. Introduction ; 2. Elementary Dynamic-Programming Algorithms ; 2.1. Fibonacci numbers ; 2.2. The maximum-sum substring problem ; 2.3. Longest increasing subsequence 2.4. Longest common subsequence 3. Sequence Alignment ; 3.1. Global alignment ; 3.2. Local alignment ; 3.3. Affine gap penalties ; 3.4. Space-saving strategies ; 3.5. Multiple sequence alignment ; The Representation Comparison and Prediction of Protein Pathways ; 1. Introduction 2. Online Pathway Resources 3. Pathway Representation ; 3.1. Pathway Space ; 3.2. SLIPR Format ; 4. Pathway Comparison

; 4.1. Comparing Individual Components ;
4.2. Aligning Two Pathways Using Dynamic Programming
; 4.3. Pathway Database Comparison
4.4. One Implementation: PM_search Documentation
5. Orthologous Pathway Prediction ; 6. Discussion ; 6.1. Theoretical Issues on Evolutionary Study of Pathways ; 6.2. Establishing a Relational Pathway Database and its Web Interfaces
; 6.3. Pathway Prediction and Beyond
Gene Network Inference and Biopathway Modeling
1. Introduction ; 2. Gene Network Inference from Microarray Data ; 2.1. Boolean Network Model ; 2.2. Bayesian Network Model
; 3. Modeling and Simulation ; 3.1. Architecture for Biopathway Modeling ; 3.2. How to Model Biopathways
3.3. Genomic Object Net and Biopathway Databases Towards Simulation

Sommario/riassunto

The Institute for Mathematical Sciences at the National University of Singapore organized a program on "Post-Genome Knowledge Discovery" from January to June 2002. The program focused on the computational and statistical analysis of sequences and genetics, and the mathematical modeling of complex biological interactions, which are critical to the accurate annotation of genomic sequences, the study of the interplay between genes and proteins, and the study of the genetic variability of species. As part of the program, tutorials for graduate students and newcomers to this transdisciplinary area

2. Record Nr. UNINA9910141174603321

Titolo	Introduction to integral calculus [[electronic resource]] : systematic studies with engineering applications for beginners / / Ulrich L. Rohde ... [et al.]
Pubbl/distr/stampa	Hoboken, N.J., : Wiley, c2012
ISBN	1-283-40084-7 9786613400840 1-118-13034-0 1-118-13033-2 1-118-13031-6
Descrizione fisica	1 online resource (430 p.)
Classificazione	SK 400
Altri autori (Persone)	RohdeUlrich L
Disciplina	515/.43
Soggetti	Calculus, Integral
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction to Integral Calculus: Systematic Studies with Engineering Applications for Beginners; CONTENTS; FOREWORD; PREFACE; BIOGRAPHIES; INTRODUCTION; ACKNOWLEDGMENT; 1 Antiderivative(s) [or Indefinite Integral(s)]; 1.1 Introduction; 1.2 Useful Symbols, Terms, and Phrases Frequently Needed; 1.3 Table(s) of Derivatives and their corresponding Integrals; 1.4 Integration of Certain Combinations of Functions; 1.5 Comparison Between the Operations of Differentiation and Integration; 2 Integration Using Trigonometric Identities; 2.1 Introduction 2.2 Some Important Integrals Involving sin x and cos x2.3 Integrals of the Form B;(dx/(asin x + b cosx)), where a, r; 3a Integration by Substitution: Change of Variable of Integration; 3a.1 Introduction; 3a.2 Generalized Power Rule; 3a.3 Theorem; 3a.4 To Evaluate Integrals of the Form B; a sin x + b cos x/c sin x + d cos x dx; where a, b, c, and d are constant; 3b Further Integration by Substitution: Additional Standard Integrals; 3b.1 Introduction; 3b.2 Special Cases of Integrals and Proof for Standard Integrals; 3b.3 Some New Integrals; 3b.4 Four More Standard Integrals

4a Integration by Parts 4a.1 Introduction; 4a.2 Obtaining the Rule for Integration by Parts; 4a.3 Helpful Pictures Connecting Inverse Trigonometric Functions with Ordinary Trigonometric Functions; 4a.4 Rule for Proper Choice of First Function; 4b Further Integration by Parts: Where the Given Integral Reappears on Right-Hand Side; 4b.1 Introduction; 4b.2 An Important Result: A Corollary to Integration by Parts; 4b.3 Application of the Corollary to Integration by Parts to Integrals that cannot be Solved Otherwise; 4b.4 Simpler Method(s) for Evaluating Standard Integrals
4b.5 To Evaluate x2 + bx + cdx5 Preparation for the Definite Integral: The Concept of Area; 5.1 Introduction; 5.2 Preparation for the Definite Integral; 5.3 The Definite Integral as an Area; 5.4 Definition of Area in Terms of the Definite Integral; 5.5 Riemann Sums and the Analytical Definition of the Definite Integral; 6a The Fundamental Theorems of Calculus; 6a.1 Introduction; 6a.2 Definite Integrals; 6a.3 The Area of Function A(x); 6a.4 Statement and Proof of the Second Fundamental Theorem of Calculus; 6a.5 Differentiating a Definite Integral with Respect to a Variable Upper Limit
6b The Integral Function x1 1/ t dt, (x > 0) Identified as ln x or logex
6b.1 Introduction; 6b.2 Definition of Natural Logarithmic Function; 6b.3 The Calculus of ln x; 6b.4 The Graph of the Natural Logarithmic Function ln x; 6b.5 The Natural Exponential Function [exp(x) or ex]; 7a Methods for Evaluating Definite Integrals; 7a.1 Introduction; 7a.2 The Rule for Evaluating Definite Integrals; 7a.3 Some Rules (Theorems) for Evaluation of Definite Integrals; 7a.4 Method of Integration by Parts in Definite Integrals; 7b Some Important Properties of Definite Integrals; 7b.1 Introduction
7b.2 Some Important Properties of Definite Integrals

Sommario/riassunto

An accessible introduction to the fundamentals of calculus needed to solve current problems in engineering and the physical sciences Integration is an important function of calculus, and Introduction to Integral Calculus combines fundamental concepts with scientific problems to develop intuition and skills for solving mathematical problems related to engineering and the physical sciences. The authors provide a solid introduction to integral calculus and feature applications of integration, solutions of differential equations, and evaluation methods. With logical organization coup