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Nota di contenuto	CONTENTS; Preface; Hypergeometric Summation Revisited S. A. Abramov, M. Petkovsek; 1. Introduction; 2. Validity conditions of the discrete Newton-Leibniz formula; 2.1. A criterion; 2.2. Summation of proper hypergeometric sequences; 2.3. When the interval I contains no leading integer singularity of L; 3. The spaces VI(L) and WI(R(k), L); 3.1. The structure of WI(R(k), L); 3.2. When a rational solution of Gosper's equation is not unique; 3.3. If Gosper's equation has a rational solution R(k) then WI(R, L) = 0; References Five Applications of Wilf-Zeilberger Theory to Enumeration and Probability M. Apagodu, D. ZeilbergerExplicit Formulas vs. Algorithms; The Holonomic Ansatz; Why this Paper?; The Maple packages AppsWZ

and AppsWZmulti; Asymptotics; First Application: Rolling a Die; Second Application: How many ways to have r people chip in to pay a bill of n cents; Third Application: Hidden Markov Models; Fourth Application: Lattice Paths Counting; References; Factoring Systems of Linear Functional Equations Using Eigenrings M. A. Barkatou; 1. Introduction and notations; 2. Preliminaries
3. Eigenrings and reduction of pseudo-linear equationsMaximal Decompsition; 4. Spaces of homomorphisms and factorization; Appendix A. K[X; ,].modules and matrix pseudo-linear equations; Appendix A.1. Pseudo-linear operators; Appendix A.2. Similarity, reducibility, decomposability and complete reducibility; Appendix A.3. The ring of endomorphisms of a pseudo-linear operator; References; Modular Computation for Matrices of Ore Polynomials H. Cheng, G. Labahn; 1. Introduction; 2. Preliminaries; 2.1. Notation; 2.2. Definitions; 2.3. The FFreduce Elimination Algorithm
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Logarithmic Functional and the Weil Reciprocity Law A. Khovanskii1. Introduction; 1.1. The Weil reciprocity law; 1.2. Topological explanation of the reciprocity law over the field C; 1.3. Multi-dimensional reciprocity laws; 1.4. The logarithmic functional; 1.5. Organization of material; 2. Formulation of the Weil reciprocity law; 3. LB-functional of the pair of complex valued functions of the segment on real variable; 4. LB-functional of the pair of complex valued functions and one-dimensional cycle on real manifold; 5. Topological proof of the Weil reciprocity law
6. Generalized LB-functional

Sommario/riassunto

Written by world-renowned experts, the book is a collection of tutorial presentations and research papers catering to the latest advances in symbolic summation, factorization, symbolic-numeric linear algebra and linear functional equations. The papers were presented at a workshop celebrating the 60th birthday of Sergei Abramov (Russia), whose highly influential contributions to symbolic methods are adopted in many leading computer algebra systems.