Ramanujan's Lost Notebook [Part I /

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Springer New York, 2005

Monografía

This volume is the first of approximately four volumes devoted to providing statements, proofs, and discussions of all the claims made by Srinivasa Ramanujan in his lost notebook and all his other manuscripts and letters published with the lost notebook. In addition to the lost notebook, this publication contains copies of unpublished manuscripts in the Oxford library, in particular, his famous unpublished manuscript on the partition and tau-functions; fragments of both published and unpublished papers; miscellaneous sheets; and Ramanujan's letters to G. H. Hardy, written from nursing homes during Ramanujan's final two years in England. This volume contains accounts of 442 entries (counting multiplicities) made by Ramanujan in the aforementioned publication. The present authors have organized these claims into eighteen chapters, containing anywhere from two entries in Chapter 13 to sixty-one entries in Chapter 17. Most of the results contained in Ramanujan's Lost Notebook fall under the purview of q-series. These include mock theta functions, theta functions, partial theta function expansions, false theta functions, identities connected with the Rogers-Fine identity, several results in the theory of partitions, Eisenstein series, modular equations, the Rogers-Ramanujan continued fraction, other q-continued fractions, asymptotic expansions of q-series and q-continued fractions, integrals of theta functions, integrals of q-products, and incomplete elliptic integrals. Other continued fractions, other integrals, infinite series identities, Dirichlet series, approximations, arithmetic functions, numerical calculations, diophantine equations, and elementary mathematics are some of the further topics examined by Ramanujan in his lost notebook

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Título: Ramanujan's Lost Notebook Recurso electrónico] Part I by George E. Andrews, Bruce Berndt

Editorial: New York, NY Springer New York 2005

Descripción física: XIV, 437 p.

Mención de serie: Springer eBooks

Contenido: Preface -- Introduction -- The Rogers–Ramanujan Continued Fraction and Its Modular Properties -- Explicit Evaluations of the Rogers–Ramanujan Continued Fraction -- A Fragment on the Rogers–Ramanujan and Cubic Continued Fractions -- The Rogers–Ramanujan Continued Fraction and Its Connections with Partitions and Lambert Series -- Finite Rogers–Ramanujan Continued Fractions -- Other q-continued Fractions -- Asymptotic Formulas for Continued Fractions -- Ramanujan's Continued Fraction for $(q2; q3)8/(q; q3)8$ -- The Rogers–Fine Identity -- An Empirical Study of the Rogers–Ramanujan Identities -- Rogers–Ramanujan–Slater Type Identities --

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Detalles del sistema: Forma de acceso: World Wide Web

ISBN: 9780387281247

Autores: Berndt, Bruce

Entidades: SpringerLink