

Logique et fondements

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Prof. Olli Lehto, is a surprisingly compelling story, for reflected in the history of the International Mathematical Union (IMU) is all the strife among world powers, as well as aspirations for cooperation among nations in an increasingly interdependent world. But what keeps you turning pages is the very human story of individuals, among them many of the great mathematicians of our century, united in the common purpose of advancing their science, told against the backdrop of world events.

Vladimir MAZ'YA, Tatyana SHAPOSHNIKOVA. — **Jacques Hadamard, a universal mathematician.** — History of mathematics, vol. 14. — Un vol. relié, 19×26, de xxv, 574 p. — ISBN 0-8218-0841-9. — Prix: £52.00. — American Mathematical Society, Providence R.I., distributed by Oxford University Press, Oxford, 1998.

This book presents the story of the long life and great accomplishments of Jacques Hadamard (1865-1963), who was once called "the living legend of mathematics". Hadamard's contributions to mathematics are landmarks in various fields. His life is linked with world history of the 20th century in a dramatic way. This work provides an inspiring view of the development of various branches of mathematics during the 19th and 20th centuries. Hadamard's life is described in a readable and inviting way and the book contains over 300 photographs and illustrations.

Michael MONASTYRSKY. — **Modern mathematics in the light of the Fields medals.** — Un vol. broché, 12×19,5, de xv, 160 p. — ISBN 1-56881-083-0. — Prix: US\$19.95. — A.K. Peters, Wellesley, Mass., 1998.

This short book examines the evolution of certain areas of modern mathematics by recounting the past winners of the international Fields medal, the "Nobel prize" of mathematics. Subjects like topology, complex analysis, number theory, and mathematical logic are brought to life through the personalities of those who fundamentally contributed to their development. It makes a charming addition to any mathematician's bookshelf.

V.S. VARADARAJAN. — **Algebra in ancient and modern times.** — Mathematical world, vol. 12. — Un vol. broché, 18×25,5, de xii, 142 p. — ISBN 0-8218-0989-X. — Prix: US\$25.00. — American Mathematical Society, Providence R.I., and Hindustan Book Agency, New Delhi, 1998, distributed world-wide except in India, Sri Lanka, Bangladesh, Pakistan and Nepal by the American Mathematical Society, Providence R.I.

This text offers a special account of Indian work in diophantine equations during the 6th through 12th centuries and Italian work on solutions of cubic and biquadratic equations from the 11th through 16th centuries. The volume traces the historical development of algebra and the theory of equations from ancient times to the beginning of modern algebra, outlining some modern themes, such as the fundamental theorem of algebra, Clifford algebras, and quaternions. It is geared toward undergraduates who have no background in calculus.

Logique et fondements

Samuel R. BUS, (Editor). — **Handbook of proof theory.** — Studies in logic and the foundations of mathematics, vol. 137. — Un vol. relié, 16×23, de 811 p. — ISBN 0-444-89840-9. — Prix: Dfl. 280.00. — Elsevier, Amsterdam, 1998.

Samuel R. Buss: An introduction to proof theory. — Samuel R. Buss: First-order proof theory of arithmetic. — Matt Fairtlough and Stanley S. Wainer: Hierarchies of provably recursive functions. — Wolfram Pohlers: Subsystems of set theory and second order number

theory. — Jeremy Avigad and Solomon Feferman: Gödel's functional ("Dialectica") interpretation. — Anne S. Troelstra: Realizability. — Giorgi Japaridze and Dick de Jongh: The logic of provability. — Pavel Pudlák: The lengths of proofs. — Gerhard Jäger and Robert F. Stärk: A proof-theoretic framework for logic programming. — Robert L. Constable: Types in logic, mathematics and programming.

Théorie des ensembles

Carlos Augusto DI PRISCO, Jean A. LARSON, Jean BAGARIA and A.R.D. MATHIAS, (Editors) — **Set theory: techniques and applications.** — Curaçao 1995 and Barcelona 1996 conferences. — Un vol. relié, $16,5 \times 25$, de x, 226 p. — ISBN 0-7923-4905-9. — Prix: Dfl. 175.00. — Kluwer Academic Publishers, Dordrecht, 1998.

During the past 25 years, set theory has developed in several interesting directions. The most outstanding results regard the application of sophisticated techniques to problems in analysis, topology, infinitary combinatorics and other areas of mathematics. This book contains a selection of contributions, some of which are expository in nature, embracing various aspects of the latest developments. Among topics treated are forcing axioms and their applications, combinatorial principles used to construct models, and a variety of other set theoretical tools including inner models, partitions and trees.

S.M. SRIVASTAVA. — **A course on Borel sets.** — Graduate texts in mathematics, vol. 180. — Un vol. relié, 16×24 , de xvi, 261 p. — ISBN 0-387-98412-7. — Prix: DM 98.00. — Springer, New York, 1998.

This course provides a thorough introduction to Borel sets and measurable selections, and acts as a stepping stone to descriptive set theory by presenting important techniques such as universal sets, prewellordering, and scales. It is written in an easily understandable style and employs only naive set theory, general topology, analysis and algebra. A large number of interesting exercises are given throughout the text.

Analyse combinatoire

Armen S. ASRATIAN, Tristan M.J. DENLEY and Roland HÄGGKVIST. — **Bipartite graphs and their applications.** — Cambridge tracts in mathematics, 131. — Un vol. relié, $15,5 \times 23,5$, de xi, 259 p. — ISBN 0-521-59345-X. — Prix: £40.00. — Cambridge University Press, Cambridge, 1998.

Bipartite graphs are perhaps the most basic of objects in graph theory. However, until now they have been considered only as a special class in some wider context. This is the first book which deals solely with bipartite graphs. Essentially all proofs are given in full and numerous exercises of all standards have also been included. The theory is illustrated with many applications especially to problems in timetabling, chemistry, communication networks and computer science.

Béla BOLLOBÁS. — **Modern graph theory.** — Graduate texts in mathematics, vol. 184. — Un vol. broché, $16,5 \times 23,5$, de xiii, 394 p. — ISBN 0-387-98488-7. — Prix: DM 68.00. — Springer, New York, 1998.

This book is an in-depth account of graph theory. It reflects the current state of the subject and emphasizes connections with other branches of pure mathematics. The volume grew out of the author's earlier book *Graph theory: an introductory course*, but its length is well over twice