

Logique et fondements

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topology and physics. The author takes into account his own research at the Riemann archives of Göttingen University and developments over the last decade that connect Riemann with numerous significant ideas and methods reflected throughout contemporary mathematics and physics. Special attention is paid to new results on the Riemann-Hilbert problem and to recent discoveries in field theory and condensed matter such as the quantum Hall effect, quasicrystals, membranes with nontrivial topology, “fake” differential structures on 4-dimensional Euclidean space, new invariants of knots, and more.

Reviel NETZ. — **The shaping of deduction in Greek mathematics: a study in cognitive history.** — Ideas in context. — Un vol. relié, 16×23,5, de xvii, 327 p. — ISBN 0-521-62279-4. — Prix: £40.00. — Cambridge University Press, Cambridge, 1999.

The aim of this book is to explain the shape of Greek mathematical thinking. It can be read on three levels: first as a description of the practices of Greek mathematics; second as a theory of the emergence of the deductive method; and the third as a case-study for a general view on the history of science. The starting-point for the enquiry is geometry and the lettered diagram. Reviel Netz exploits the mathematicians' practices in the construction and lettering of their diagrams, and the continuing interaction between text and diagram in their proofs, to illuminate the underlying cognitive processes. Two crucial chapters set out to show how mathematical proofs are structured and explain why Greek mathematical practice manages to be so satisfactory. A final chapter looks into the broader historical setting of Greek mathematical practice.

Jacques SESIANO. — **Une introduction à l'histoire de l'algèbre: résolution des équations des Mésopotamiens à la Renaissance.** — Un vol. broché, 15,5×22,5, de viii, 168 p. — ISBN 2-88074-394-X. — Prix: SFr. 39.00. — Presses polytechniques et universitaires romandes, Lausanne, 1999.

L'auteur retrace l'histoire de la résolution des équations et montre comment la résolution d'équations de degrés croissants conduit aux extensions successives du domaine des nombres: négatifs, irrationnels, complexes. Il amène ainsi le lecteur à comprendre quels types de problèmes ont causé les diverses extensions du domaine des nombres. La traduction littérale de problèmes et la reproduction des originaux grecs, latins, arabes et italiens sont données en appendice. Ce livre intéressera les enseignants en mathématiques, les étudiants en sciences et les personnes intéressées par l'histoire des sciences.

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S. Barry COOPER, John K. TRUSS, (Editors). — **Models and computability.** — Invited papers from Logic Colloquium '97 - European Meeting of the Association for Symbolic Logic, Leeds, July 1997. — London Mathematical Society lecture note series, vol. 259. — Un vol. broché, 15,5×23, de ix, 419 p. — ISBN 0-521-63550-0. — Prix: £29.95. — Cambridge University Press, Cambridge, 1999.

Together, *Models and Computability*, and its sister volume *Sets and Proofs* will provide readers with a comprehensive guide to the current state of mathematical logic. All the authors are leaders in their fields and are drawn from the invited speakers at “Logic Colloquium '97” (the major international meeting of the Association of Symbolic Logic). It is expected that the breadth and timeliness of these two volumes will prove an invaluable and unique resource for specialists, post-graduate researchers, and the informed and interested nonspecialist.

S. Barry COOPER, John K. TRUSS, (Editors). — **Sets and proofs.** — Invited papers from Logic Colloquium '97 - European Meeting of the Association for Symbolic Logic, Leeds, July 1997. — London Mathematical Society lecture note series, vol. 258. — Un vol. broché, 15,5×23, de IX, 436 p. — ISBN 0-521-63549-7. — Prix: £29.95. — Cambridge University Press, Cambridge, 1999.

From the preface: "Together, we hope that *Sets and Proofs*, and *Models and Computability* will provide readers with a comprehensive guide to the current state of mathematical logic, and while not pretending to the definitiveness of a handbook, perhaps communicating more of the excitement of a subject in flight. All the authors are leaders in their fields, some articles pushing forward the technical boundaries of the subject, others providing readable and authoritative overviews of particular important topics... a number of papers can be expected to become classics, essential to any good library (individual or institutional)."

Paul TAYLOR. — **Practical foundations of mathematics.** — Cambridge studies in advanced mathematics, vol. 59. — Un vol. relié, 16×23,5, de XI, 572 p. — ISBN 0-521-63107-6. — Prix: £50.00. — Cambridge University Press, Cambridge, 1999.

This book collects the methods of construction of the objects of twentieth century mathematics. Although it is mainly concerned with a framework essentially equivalent to intuitionistic ZF, the book looks forward to more subtle bases in categorical type theory and the machine representation of mathematics. Each idea is illustrated by wide-ranging examples, and followed critically along its natural path, transcending disciplinary boundaries between universal algebra, type theory, category theory, set theory, sheaf theory, topology and programming.

Analyse combinatoire

Andreas BRANDSTÄDT, Van Bang LE, Jeremy P. SPINRAD. — **Graph classes: a survey.** — SIAM monographs on discrete mathematics and applications. — Un vol. broché, 18×25,5, de XI, 304 p. — ISBN 0-89871-432-X. — Prix: US\$54.40. — Society for Industrial and Applied Mathematics, Philadelphia, 1999.

This well-organized reference is a definitive encyclopedia for the literature on graph classes. It contains a survey of more than 200 classes of graphs, organized by types of properties used to define and characterize the classes, citing key theorems and literature references for each. The authors state results without proof, providing readers with easy access to far more key theorems than are commonly found in other mathematical texts. Interconnections between graph classes are also provided to make the book useful to a variety of readers.

Fan CHUNG, Ron GRAHAM. — **Erdős on graphs: his legacy of unsolved problems.** — Un vol. broché, 19×23,5, de XIII, 142 p. — ISBN 1-56881-111-X. — Prix: US\$25.00. — A.K. Peters, Natick, Massachusetts, 1999.

This book is a tribute to Paul Erdős, the wandering mathematician once described as "the prince of problem solvers and the absolute monarch of problem posers". It examines - within the context of his unique personality and lifestyle - the legacy of open problems he left to the world of mathematics after his death in 1996. By cataloguing the unsolved problems of Erdős in a comprehensive and well-documented volume, the authors hope to continue the work of an unusual and special man who fundamentally influenced the field of mathematics.