

Histoire

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Alain LICHNEWSKY, (Editor). — **Modélisation mathématique: un autre regard.** — Scopus, vol. 16. — Un vol. broché, 24 × 16, de xv, 267 p. — ISBN 3-540-43136-5. — Prix: € 42.61. — Springer, Berlin, 2002.

Cet ouvrage rassemble plusieurs textes qui ont été soumis aux candidats de l'épreuve de modélisation du concours d'agrégation de mathématiques. Il s'agit d'un ouvrage collectif écrit par des membres du jury. Les textes sont complétés par une présentation de l'auteur, et plusieurs propositions d'exploitation convenant soit à cette épreuve, soit au contexte des T.I.P.E. et T.P.E. sont proposés. Ce livre sera utile aussi bien aux étudiants préparant le concours qu'aux enseignants qui souhaitent développer la modélisation mathématique à travers des projets de T.I.P.E. et de T.P.E.

Charles Chapman PUGH. — **Real mathematical analysis.** — Undergraduate texts in mathematics. — Un vol. relié, 16 × 24, de xi, 437 p. — ISBN 0-387-95297-7. — Prix: € 59.95. — Springer, New York, 2002.

In this new introduction to undergraduate real analysis, the author takes a different approach from past presentations of the subject by stressing the importance of pictures in mathematics and hard problems. The exposition is informal and relaxed, with many helpful asides, examples, and occasional comments from mathematicians such as Dieudonné, Littlewood, and Osserman. This book is based on the honors version of a course that the author has taught many times, over the last thirty-five years, at the University of California, Berkeley.

Micheál Ó SEARCÓID. — **Elements of abstract analysis.** — Springer undergraduate mathematics series. — Un vol. broché, 17 × 23,5, de xii, 298 p. — ISBN 1-85233-424-X. — Prix: € 34.95. — Springer, London, 2002.

The book is written specifically for final-year undergraduate students who should already be familiar with most of the mathematical structures discussed – for example, rings, linear spaces, and metric spaces – and with many of the principal analytical concepts – convergence, connectedness, continuity, compactness and completeness. It reviews the concepts at a slightly greater level of abstraction and enables students to understand their place within the broad framework of set-based mathematics. This book is a rigorous, self-contained introduction to functional analysis that will also serve as a text on abstract mathematics.

David WOLFE, Tom RODGERS, (Editors). — **Puzzlers' tribute: a feast for the mind.** — Un vol. relié, 16 × 23,5, de xiii, 420 p. — ISBN 1-56881-121-7. — Prix: US\$ 35.00. — A. K. Peters, Natick, Mass., 2002.

Mathematicians, puzzle aficionados, and magicians are experts in the unsolvable, the undoable, and the unbelievable. Their currency is paradox. Martin Gardner stands at the nexus of these communities, and this collection brings together offerings in tribute to him. The list of contributors reads like a *Who's Who* in science and the world of puzzles. The breadth of contributions in form and content, ranging from puzzles to poems, from brainteasers to brief biographical accounts of the greatest puzzler of all, is sure to appeal to a wide variety of readers and the fan club of Martin Gardner.

Histoire

Robert CHURCHHOUSE. — **Codes and ciphers: Julius Caesar, the Enigma, and the internet.** — Un vol. broché, 15 × 23, de x, 240 p. — ISBN 0-521-00890-5 (relié: 0-521-81054-X). — Prix: £ 14.95 (relié: £ 40.00). — Cambridge University Press, Cambridge, 2001.

The design of code and cipher systems has undergone major changes in modern times. Powerful personal computers have resulted in an explosion of e-banking, e-commerce and

e-mail, and as a consequence the encryption of communications to ensure security has become a matter of public interest and importance. This book describes and analyses many cipher systems ranging from the earliest and most elementary to the most recent and sophisticated, such as RSA and DES, as well as wartime machines such as the Enigma and Hagelin, and ciphers used by spies. Security issues and possible methods of attack are discussed and illustrated by examples. The design of many systems involves advanced mathematical concepts and these are explained in detail in a major appendix.

C. C. HEYDE, S. E. FIENBERG, J. GANI, (Editors). — **Statisticians of the centuries.** — Un vol. broché, 15,5 × 23,5, de XII, 500 p. — ISBN 0-387-95283-7. — Prix: € 44.95. — Springer, New York, 2001.

This work aims to demonstrate the achievements of statistics to a broad audience, and to commemorate the work of celebrated statisticians. This is done through short bibliographies that put the statistical work in its historical and sociological context, emphasizing contributions to science and society in the broadest terms rather than narrow technical achievements. The discipline is treated from its earliest times, and only individuals born prior to the 20th century are included.

Jens HØYRUP. — **Lengths, widths, surfaces: a portrait of old Babylonian algebra and its kin.** — Sources and studies in the history of mathematics and physical sciences. — Un vol. relié, 24 × 16, de XIV, 459 p. — ISBN 0-387-95303-5. — Prix: € 99.95. — Springer, New York, 2002.

In this new examination of the texts of Babylonian cuneiform tablets, the author proposes an interpretation, based on a detailed investigation of the terminology and discursive organization of the texts. The texts turn out to speak not of pure numbers, but of the dimensions and areas of rectangles and other measurable geometrical magnitudes, often serving as representatives of other magnitudes (prices, workdays, etc...), much as pure numbers represent concrete magnitudes in modern applied algebra. The texts show why the procedures are correct, but do not aim at creating theory, nor are their second-degree “equations” of any practical use. Høyrup argues that we should focus on the function of the texts within the schools and within Babylonian culture at large. The book provides a detailed reading of many tablets and a careful examination of the context in which they were produced.

Benjamin H. YANDELL. — **The Honors Class: Hilbert’s problems and their solvers.** — Un vol. relié, 16 × 24, de IX, 486 p. — ISBN 1-56881-141-1. — Prix: US\$39.00. — A. K. Peters, Natick, Mass., 2002.

This very readable book focuses on the people of mathematics and draws the reader into their fascinating world. Hilbert’s problems have become a guiding inspiration to many mathematicians. Those who have succeeded in solving these problems or advancing their solutions form an *Honors Class* among research mathematicians of this century. Yandell presents vivid portraits of the people who devoted their lives to meet Hilbert’s challenge. This book connects mathematicians to their history. It is a wonderful opportunity to acquaint others with the culture of mathematics and its people.

Logique et fondements

Egon BÖRGER, Erich GRÄDEL, Yuri GUREVICH. — **The classical decision problem.** — Universitext. — Un vol. broché, 16 × 24, de X, 482 p. — ISBN 3-540-42324-9. — Prix: € 44.95. — Springer, Berlin, 2001.

This is the most comprehensive treatment available in book form of the classical decision problem of mathematical logic and of the role of the classical decision problem in modern com-