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intersection of algebra and geometry. It furnishes in-depth discussions on Hopf algebras and quantum groups, Brauer groups, localization theory, K-theory, linear algebra over rings, category theory, noncommutative algebraic geometry, and more. Containing some 900 display equations and over 400 bibliographic citations and illustrations, the book is a valuable resource for algebraists, number theorists, ring theorists, and graduate-level students in these disciplines.

S.K. JAIN, S. Tariq RIZVI, (Editors). — **Advances in ring theory.** — Trends in mathematics. — Un vol. relié, 16×24, de vi, 333 p. — ISBN 0-8176-3969-1 (Boston), 3-7643-3969-1 (Basel). — Prix: SFr. 148.00. — Birkhäuser, Boston, 1997.

This research volume provides a collection of invited research papers, many of which were presented at 23rd Ohio State Denison Math Conference held at Denison University, Granville, in May 1996. The articles give the latest developments and trends in classical ring theory. Containing contributions of over 35 well-known mathematicians, the volume examines wide-ranging developments in ring theory and provides a variety of methodologies which will be useful to any researchers in the field.

Gerhard SAAD and Momme Johs THOMSEN, (Editors). — **Nearrings, nearfields and K-loops.** — Proceedings of the Conference on Nearrings and Nearfields, Hamburg, Germany, July 30-August 6, 1995. — Mathematics and its applications, vol. 426. — Un vol. relié, 16,5×24,5, de xiii, 444 p. — ISBN 0-7923-4799-4. — Prix: Dfl. 340.00. — Kluwer Academic Publishers, Dordrecht, 1997.

The volume contains the written version of five invited lectures concerning the development from nearfields to K-loops, non-zerosymmetric nearrings, nearrings of homogeneous functions, the structure of Ω -groups, and ordered nearfields. They are followed by 30 contributed papers reflecting the diversity of the subject of nearrings and related structures with respect to group theory, combinatorics, geometry, topology as well as the purely algebraic structure theory of these algebraic structures.

Catégories, algèbre homologique, cohomologie des groupes

F. William LAWVERE, Stephen H. SCHANUEL. — **Conceptual mathematics: a first introduction to categories.** — Un vol. broché, 17,5×25, de xii, 358 p. — ISBN 0-521-47817-0. — Prix: £24.95 (relié: £65.00). — Cambridge University Press, Cambridge, 1997.

This book is the first book to serve both as a skeleton key to mathematics for the general reader or beginning student and as an introduction to categories for computer scientists, logicians, physicists, linguists, etc. While the ideas and techniques of basic category theory are useful throughout modern mathematics, this book does not presuppose knowledge of specific fields but rather develops elementary categories such as directed graphs and discrete dynamical systems from the beginning. The fundamental ideas are then illuminated in an engaging way by examples in these categories.

Théorie des groupes et généralisation

Jürgen ELSTRODT, Fritz GRUNEWALD, Jens MENNICKE. — **Groups acting on hyperbolic space: harmonic analysis and number theory.** — Springer monographs in mathematics. — Un vol. relié, 16×24, de xv, 524 p. — ISBN 3-540-63745-6. — Prix: DM 149.00. — Springer, Berlin, 1998.

This book deals with a broad range of topics from the theory of automorphic functions on three-dimensional hyperbolic space and its arithmetic, group-theoretic, and geometric

ramifications. Starting off with several models of hyperbolic space and its group of motions the authors discuss the spectral theory of the Laplacian and Selberg's theory for cofinite groups. The interplay with arithmetic is demonstrated by means of the groups $\mathrm{PSL}(2)$ over rings of quadratic integers, their Eisenstein series and their associated Hermitian forms. A comprehensive chapter on concrete examples of arithmetic and non arithmetic cofinite groups enhances the usefulness of this work for a wide audience of mathematicians.

E.I. KHUKHRO. — ***p*-automorphisms of finite *p*-groups.** — London Mathematical Society lecture note series, vol. 246. — Un vol. broché, 15×23 , de xvii, 204 p. — ISBN 0-521-59717-X. — Prix: £24.95. — Cambridge University Press, Cambridge, 1998.

This book provides a detailed but concise account of the theory of structure of finite p -groups admitting p -automorphisms with few fixed points. The relevant preliminary material on Lie rings is introduced and the main theorems of the book on the solubility of finite p -groups are then presented. The proofs involve notions such as viewing automorphisms as linear transformations, associated Lie rings, powerful p -groups, and the correspondences of A.I. Mal'cev and M. Lazard given by the Baker-Hausdorff formula. Many exercises are included.

Groupes topologiques et groupes et algèbres de Lie

E.A. DE KERF, G.G.A. BÄUERLE, A.P.E. TEN KROODE. — **Lie algebras, Part 2: Finite and infinite dimensional.**

Lie algebras and applications in physics. — Studies in mathematical physics, vol. 7. — Un vol. relié, 16×23 , de x, 554 p. — ISBN 0-444-82836-2. — Prix: Dfl. 265.00. — North-Holland, Amsterdam, 1997.

Extensions of Lie algebras. — Explicit construction of affine Kac-Moody algebras. — Representations – enveloping algebra techniques. — The Weyl group and integrable representations. — More on representations. — Characters and multiplicities. — Quarks, leptons and gauge fields. — Lie algebras of infinite matrices. — Representations of loop algebras. — KP-hierarchies. — Conformal symmetry.

Juan TIRAO, David A. VOGAN, Jr., Joseph A. WOLF, (Editors). — **Geometry and representation theory of real and *p*-adic groups.** — Progress in mathematics, vol. 158. — Un vol. relié, 16×24 , de x, 323 p. — ISBN 0-8176-3941-4. — Prix: SFr. 118.00. — Birkhäuser, Boston, 1998.

The representation theory of Lie groups plays an important rôle in both classical and recent developments in mathematics and physics. The 14 expository articles in this book provide a fast-paced and thorough introduction to the more active parts of representation theory and to some of its ongoing applications. These expositions contain many interesting conjectures and indications of fruitful future research areas. Some of these directions are filled in by the research articles of Bratten, Burde, Garnica, Galina, Johnson and Levstein-Tiraboshi.

Fonctions de variables réelles

Alan F. BEARDON. — **Limits: a new approach to real analysis.** — Undergraduate text in mathematics. — Un vol. relié, 16×24 , de ix, 189 p. — ISBN 0-387-98274-4. — Prix: DM 58.00. — Springer, New York, 1997.

This book includes all the standard material such as sequences, infinite series, continuity, differentiation, and integration, together with worked examples and exercises. By unifying and