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Kapitel: Corps et polynômes

as well as survey papers which provide the reader with an overview of past and future developments in the field.

Jeffrey STOPPLE. — **A primer of analytic number theory: from Pythagoras to Riemann.** — Un vol. broché, 15×23, de XIII, 383 p. — ISBN 0-521-01253-8 (relié: 0-521-81309). — Prix: US$35.00 (relié: US$95.00). — Cambridge University Press, Cambridge, 2003.

This undergraduate introduction to analytic number theory develops analytic skills in the course of a study of ancient questions on polygonal numbers, perfect numbers, and amicable pairs. The question of how the primes are distributed among all integers is central in analytic number theory. This distribution is determined by the Riemann zeta function, and Riemann's work shows how it is connected to the zeros of his function and the significance of the Riemann hypothesis. Starting from a traditional calculus course and assuming no complex analysis, the author develops the basic ideas of elementary number theory. The text is supplemented by a series of exercises to further develop the concepts and includes brief sketches of more advanced ideas, to present contemporary research problems at a level suitable for undergraduates.

Corps et polynômes

Leila SCHNEPS, (Editor). — **Galois groups and fundamental groups.** — Mathematical Sciences Research Institute publications, vol. 41. — Un vol. relié, 16,5×24, de XIV, 467 p. — ISBN 0-521-80831-6. — Prix: £50.00. — Cambridge University Press, Cambridge, 2003.

This book explores recent research underlining the remarkable connections between the algebraic and arithmetic world of Galois theory and the topological and geometric world of fundamental groups. B.H. Matzat and M. van der Put introduce differential Galois theory and solve the differential inverse Galois problem over global fields in positive characteristic; D. Harbater gives a comparative exposition of formal and rigid patching starting from the familiar complex case. S. Mochizuki discusses aspects of Grothendieck's famous anabelian geometry, while the articles by R. Guralnick, A. Tamagawa, and F. Pop and M. Saïdi investigate the structure of the fundamental groups of curves over different kinds of characteristic p fields. M. Imbert and L. Schneps study the structure of the Hurwitz spaces and moduli spaces of curves, which are of great importance to Galois theory because of the Galois action on their fundamental groups. The first interesting such group is $SL_2(\mathbf{Z})$, a family of special subgroups of which is studied by F. Bogomolov and Y. Tschinkel. Finally, R. Hain and M. Matsumoto present their result proving part of a conjecture by Deligne on the structure of the Lie algebra associated to the Galois action on the fundamental group of the thrice-punctured projective plane.

Géométrie algébrique

Igor DOLGACHEV. — **Lectures on invariant theory**. — London Mathematical Society lecture note series, vol. 296 — Un vol. broché, 15×23, de XVI, 220 p. — ISBN 0-521-52548-5 — Prix: £29.95. — Cambridge University Press, Cambridge, 2003.

The primary goal of this book is to give a brief introduction to the main ideas of algebraic and geometric invariant theory. It assumes only a minimal background in algebraic geometry, algebra and representation theory. Topics covered include the symbolic method for computation of invariants on the space of homogeneous forms, the problem of finite generatedness of the algebra of invariants, the theory of covariants and constructions of categorical and geometric quotients.