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with applications to coding theory... covers classical and new material on algebraic numbers, transcendence theory, and diophantine approximation, including the recent proof of algebraic independence of the numbers  $p$ ,  $e^p$ ,  $G(1/4)$ ... dwells on the connections between the distribution of primes and the Riemann zeta-function... etc.

## *Géométrie algébrique*

C.G. GIBSON. — **Elementary geometry of algebraic curves: an undergraduate introduction.** — Un vol. broché,  $15,5 \times 23$ , de xvi, 250 p. — ISBN 0-521-64641-3. — Prix: £15.95 (relié: £42.50). — Cambridge University Press, Cambridge, 1998.

This is an introduction to plane algebraic curves from a geometric viewpoint. The book is well illustrated, and contains several hundred worked examples and exercises. From the familiar lines and conics of elementary geometry the reader proceeds to general curves in the real affine plane, with excursions to more general fields to illustrate applications, such as number theory. By adding points at infinity the affine plane is extended to the projective plane, yielding a natural setting for curves and providing a flood of illumination into the underlying geometry. A minimal amount of algebra leads to the famous theorem of Bézout, whilst the ideas of linear systems are used to discuss the classical group structure on the cubic.

Juan C. MIGLIORE. — **Introduction to liaison theory and deficiency modules.** — Progress in mathematics, vol. 165. — Un vol. relié,  $16 \times 24$ , de xii, 215 p. — ISBN 0-8176-4027-4. — Prix: SFr. 88.00. — Birkhäuser, Boston, 1998.

This book carefully examines liaison theory and deficiency modules from basic principles, taking a geometric approach to the subject. The focus is on the role of deficiency modules in algebraic geometry, particularly with respect to liaison theory, which is treated here both as a subject in itself and as a tool. The structure and classification of liaison classes are explored, and a variety of ways are described in which liaison has been applied to geometric questions. The classical study of liaison via complete intersections is compared and contrasted with the relatively new study of the subject via arithmetic Gorenstein ideals.

## *Algèbre linéaire et multilinéaire, théorie des matrices*

Albrecht BÖTTCHER, Bernd SILBERMANN. — **Introduction to large truncated Toeplitz matrices.** — Universitext. — Un vol. relié,  $16,5 \times 24$ , de xi, 258 p. — ISBN 0-387-98570-0. — Prix: DM 98.00. — Springer, New York, 1999.

This is a text on the application of functional analysis and operator theory to some concrete asymptotic problems of linear algebra. The book contains results on the stability of projection methods, deals with asymptotic inverses and Moore-Penrose inversion of large Toeplitz matrices, and embarks on the asymptotic behavior of the norms of inverses, the pseudospectra, the singular values, and the eigenvalues of large Toeplitz matrices. The approach is heavily based on Banach algebra techniques and nicely demonstrates the usefulness of  $C^*$ -algebras and local principles in numerical analysis.

## *Anneaux et algèbres*

J. ELIAS, J.M. GIRAL, R.M. MIRÓ-ROIG, S. ZARZUELA, (Editors). — **Six lectures on commutative algebra.** — Progress in mathematics, vol. 166. — Un vol. relié,  $16,5 \times 24$ , de ix, 398 p. — ISBN 3-7643-5951-X. — Prix: SFr. 108.00. — Birkhäuser Verlag, Basel, 1998.

Interest in commutative algebra has surged over the past decades. In order to survey and highlight recent developments in this rapidly expanding field, the Centre de Recerca Matema-