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**Groupes de Monodromie en Géométrie Algébrique.** — Séminaire de géométrie algébrique du Bois-Marie 1967-1969, (SGA 7 II) par P. Deligne et N. Katz. — Lecture notes in mathematics, 340. — Un volume broché,  $16,5 \times 24$ , de x, 438 pages. — Prix: DM 40.00. — Springer, Berlin/Heidelberg/New York, 1973.

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Contient 5 exposés de: H. P. F. Swinnerton-Dyer. — B. Dwork. — N. Katz. — J.-P. Serre. — P. Cartier. — Y. Roy.

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S. BREHMER; H. HAAR. — **Differentialformen und Vektoranalysis.** — Mit 82 Abbildungen. Relié, 17 × 23,5, de 303 pages. — Prix: DM 28. — VEB Deutscher Verlag der Wissenschaften, Berlin, 1973.

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Integrale im euklidischen Raum; Die Differentialoperationen der Vektoranalysis; Element der Potentialtheorie; Vektor- und Tensoranalysis im krummlinigen Koordinaten. — Ausblick auf die Theorie der Riemannschen Räume: Topologische Räume, Hausdorffsche Räume; Differenzierbare Mannigfaltigkeiten; Affin zusammenhängende Räume; Riemannsche Räume.

Hermann MINKOWSKI. — **Briefe an David Hilbert.** — Mit Beiträgen und herausgegeben von L. Rüdénberg und H. Zassenhaus. — Mit 43 Abbildungen. — Broché,  $18 \times 24$ , de 165 pages. — Prix: DM 32. — Springer Verlag, Berlin/Heidelberg/New York, 1973.

Einleitung: Erinnerung an H. Minkowski (par Lily Rüdénberg). — Zur Vorgeschichte des Zahlberichts (par Hans Zassenhaus). — Über Friedrich Althoff (par Hans Zassenhaus). — Minkowski: Briefe an Hilbert.

H. KIESEWETTER. — **Vorlesungen über lineare Approximation.** — Studienbücherei. — Broché,  $16,5 \times 23$ , de 219 pages, avec 12 figures. — Prix: DM 16.80. — VEB Deutscher Verlag der Wissenschaften, Berlin, 1973.

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Steven A. GAAL. — **Linear analysis and representation theory.** — Die Grundlehren der mathematischen Wissenschaften, Band 198. — Relié,  $15,5 \times 23,5$ , de ix, 688 pages. — Prix: DM 124. — Springer Verlag, Berlin/Heidelberg/New York, 1973.

Algebras and Banach algebras. — Operators and operators algebras. — The spectral theorem, stable subspaces and V. Neumann algebras. — Elementary representation theory in Hilbert space. — Topological groups, invariant measures, convolutions and representations. — Induced representations. — Isomorphism theorems implying the Frobenius reciprocity relation. — Square integrable representations, spherical functions and trace formulas. — Lie algebras, manifolds and Lie groups.

Carl FAITH. — **Algebra: Rings, modules and categories I.** — Die Grundlehren der mathematischen Wissenschaften, Band 190. — Relié,  $15,5 \times 23,5$ , de xxii, 565 pages. — Prix: DM 54. — Springer Verlag, Berlin/Heidelberg/New York, 1973.

*Introduction to the operations: Monoid, semigroup, group, category, ring and module: Operations: monoid, semigroup, group, and category; Product and coproduct; Ring and module; Correspondence theorems for projective modules and the structure of simple Noetherian rings; Limits, adjoints and algebras; Abelian categories. — Structure of Noetherian semiprime rings: General Weddeburn Theorems; Semisimple modules and homological dimension; Noetherian semiprime rings; Orders in semilocal matrix rings. — Tensor algebra: Tensor products and flat modules; Marita theorems and the Picard group; Algebras over fields. — Structure of Abelian categories: Grothendieck categories; Quotient categories and localizing functors; Torsion theories, radicals, and idempotent, topologizing, and multiplicative sets.*

John B. CONWAY. — **Functions of one complex variable.** — Graduate texts in mathematics, 11. — Broché,  $15,5 \times 23,5$ , xi, 313 pages. — Prix: DM 41.10. — Springer Verlag, New York/Heidelberg/Berlin, 1973.

The complex number system. — Metric spaces and the topology of  $\mathbb{C}$ . — Elementary properties and examples of analytic functions. — Complex integration. — Singularities. — Compactness and convergence in the space of analytic functions. — Runge's theorem. — Analytic continuation and Riemann surfaces. — Harmonic functions. — Entire functions. — The range of an analytic function.

Svatopluk FUČÍK; Jindrich NEČAS; Jiri SOUČEK; Vladimír SOUČEK. — **Spectral analysis of non-linear operators.** — Lecture notes in mathematics, 346. — Broché, 16,5 × 24,5, de 287 pages. — Prix: DM 26. — Springer Verlag, Berlin/Heidelberg/New York, 1973.

Preliminaries. — Fredholm alternative for non-linear operators. — Ljusternik-Schnirelmann theory. — Morse-Sard theorem. — The converse of Ljusternik-Schnirelmann theory. — Remark to M. A. Krasnoselskij's main bifurcation theorem. — Non-linear integral equations. — Boundary value problem for ordinary differential equations. — Nonanalytic case. — Nonlinear Sturm-Liouville equation. — Boundary value problem for partial differential equations. — Final remarks.

Keith J. DEVLIN. — **Aspects of constructibility.** — Lecture notes in mathematics, 354. — Broché, 16,5 × 24,5, de XII, 240 pages. — Prix: DM 22. — Springer Verlag, Berlin/Heidelberg/New York, 1973.

Elementary theory. — Jensen's fine structure theory. — On large cardinals in the constructible universe. — Model theory in the constructible universe; Morasses. — Large cardinals and constructibility. — Relative constructibility.

Maurice SION. — **A Theory of semigroup valued measures.** — Lecture notes in mathematics, 255. — Broché, 16,5 × 24,5, de 140 pages. — Prix: DM 16. — Springer Verlag, Berlin/Heidelberg/New York, 1973.

Semigroup valued outer measures. — Measurable and integrable functions. — Differentiation. — Appendix: The Lifting theorem.

N. J. A. SLOANE. — **A Handbook of integer sequences.** — Relié, 15 × 23,5, de XIII, 206 pages. — Academic Press, New York/London, 1973.

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Herbert HEYER. — **Mathematische Theorie statistischer Experimente.** — Unter Mitwirkung von Hartmut Scheller. — Hochschultext. — Broché, 16,5 × 24,5, de XXII, 209 pages. — Prix: DM 19,80. — Springer Verlag, Berlin/Heidelberg/New York, 1973.

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Polynomials and polynomial functions. — Algebraic equations. — Composition of polynomials and polynomial functions. — Composition of polynomials and polynomial functions over rings and fields. — Composition of polynomials and polynomial functions over groups. — *Appendix*: Sets; Lattices; Multioperator groups; Rings; Fields; Semi-groups and groups; Linear algebra and representation theory; Near rings; Miscellaneous.

D. H. FREMLIN. — **Topological Riesz spaces and measure theory.** — Relié, 15 × 23,5, de xiv, 266 pages. — Prix: £5.90. — Cambridge, At the University Press, 1954.

Riesz spaces. — Topological Riesz spaces. — Dual spaces. — Riesz spaces on Boolean rings. — Measure algebras. — Measure spaces. — Representation of linear functionals. — Weak compactness. — *Appendix*: Linear topological spaces; Spaces of continuous functions.

**New developments in topology.** — The edited and revised Proceedings of the Symposium on algebraic topology, Oxford, June 1972. — Edited by Graeme Segal. — London Mathematical Society lecture note series, 11. — Broché, 15 × 23, de 128 pages. — Prix: £2.60, \$7.95. — Cambridge, At the University Press, 1974.

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Jean CHINAL. — **Design methods for digital systems.** — Translated from French by A. Preston and A. Summer. (French edition: "Techniques Booléennes et calculateurs arithmétiques"). — Relié, 15,5 × 23,5, de xvii, 506 pages, avec 310 figures et tables. — Prix: DM 88. — Springer Verlag, Berlin/Heidelberg/New York, 1973.

General concepts. — Numeration systems. Binary numeration. — Codes. — Algebra of contacts. — Algebra of classes. Algebra of logic. — Boolean algebra. — Boolean functions. — Geometric representations of Boolean functions. — Applications and examples. — The Simplification of combinational networks. — Concept of the sequential network. — Sequential networks. Definitions and representations. — Regular expressions and regular events. — The Simplification of sequential networks and minimisation of transition tables. — The Synthesis of synchronous sequential networks. — Counters.

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Wilhelm KLINGENBERG. — **Eine Vorlesung über Differentialgeometrie.** — Heidelberger Taschenbücher, Band 107. — Broché, 13,5 × 20,5, de x, 135 pages. — Prix: DM 14.80 — Springer Verlag, Berlin/Heidelberg/New York, 1973.

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Preliminaries. — Admissibility and Hammerstein equations. — Frequency techniques and stability. — Wiener-Hopf equations. — Further methods and topics.

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Spectral representation. — Norm and inner product. — Hilbert space. — Bounded operators. — Operators with discrete spectra. — Non-bounded spectra. — Differential operators. — Perturbation of spectra.

J. L. LIONS. — **Sur le contrôle optimal de systèmes distribués.** — Conférences faites, à l'invitation du Professeur Pontryagin et de l'Académie des sciences d'URSS, dans le cadre des Conférences de l'Union mathématique internationale, au Séminaire des Professeurs Nikolski et Pontryagin à l'Institut Stekloff, Moscou, Novembre 1972. — Monographie n° 20 de « L'Enseignement mathématique ». — Série des Conférences de l'Union mathématique internationale, n° 3. — Extrait de « L'Enseignement mathématique », 19 (1973), p. 125-166. — Un volume broché, 16 × 24, de 45 pages. — Prix: FS 12. — « L'Enseignement mathématique », Université/Genève, 1973.

Problèmes d'existence. — Cas linéaire quadratique. — Remarques sur le système d'optimalité. — Equations d'état non linéaires. — Phénomènes de perturbations singulières. — Problèmes de gestion optimale et inéquations variationnelles.

F. E. P. HIRZEBRUCH. — **Hilbert modular surfaces.** — Lectures given at Tokyo, February-March 1972, under the sponsorship of the International Mathematical Union. — Monographie n° 21 de « L'Enseignement mathématique ». — Série des Conférences de l'Union mathématique internationale, n° 4. — Extrait de « L'Enseignement mathématique », 19 (1973), p. 183-282. — Un volume broché, 16 × 24, de 103 pages. — Prix: FS 22. — « L'Enseignement mathématique », Université, Genève, 1973.

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*General theory*: Topological vector spaces; Completeness; Convexity; Duality in Banach spaces; Some applications. — *Distributions and Fourier transforms*: Test functions and distributions; Fourier transforms; Applications to differential equations; Tauberian theory. — *Banach algebras and spectral theory*: Banach algebras; Commutative Banach algebras; Bounded operators on a Hilbert space; Unbounded operators.

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Categories and functors. — Model theory. — Combinatorial functions. — Recursive equivalence. — Identities. — Frames. — The dimension case. — Sound values. — The automorphism extension property. — Satisfiability.

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Normal operators. — Analytic functions of operators. — Shift operators. — Examples of invariant subspace lattices. — Compact operators. — Existence of invariant and hyperinvariant subspaces. — Certain results on von Neumann algebras. — Transitive operator algebras. — Algebras associated with invariant subspaces. — Some unsolved problems.

F. F. BONSALL; J. DUNCAN. — **Complete normed algebras.** — Ergebnisse der Mathematik und ihrer Grenzgebiete, Band 80. — Un volume relié,  $16 \times 24$ , de X, 301 pages. — Prix: DM 68. — Springer, Berlin/Heidelberg/New York, 1973.

Concepts and elementary results. — Commutativity. — Representation theory. — Minimal ideals. — Star algebras. — Cohomology. — Miscellany.

J. DIEUDONNÉ. — **Cours de géométrie algébrique.** — 1: Aperçu historique sur le développement de la géométrie algébrique. — Collection SUP, « Le mathématicien », 10. — Un volume broché,  $11,5 \times 18$ , de 234 pages. — Prix: FF 26.40. — Presses universitaires de France, Paris, 1974.

Préhistoire (ca. 400 av. J.-C. — 1630 apr. J.-C.). — Exploration (1630-1795). — L'âge d'or de la géométrie projective (1795-1850). — Riemann et la géométrie birationnelle (1850-1866). — Développement et chaos (1866-1920). — Nouvelles structures en géométrie algébrique (1920-1950). — Faisceaux et schémas (1950- ). — Résultats récents et problèmes non résolus.

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**Higher K-theories.** — Proceedings of the Conference held at the Seattle research Center of the Batelle Memorial Institute, from August 28 to September 8, 1972. — Edited by H. Bass. — Lecture notes in mathematics, 341. — Un volume broché,  $16,5 \times 24,5$ , de xv, 335 pages. — Prix: DM 26. — Springer, Berlin/Heidelberg/New York, 1973.

*Comparisons and problems*: 4 exposés de S. M. Gersten, D. W. Anderson, M. Karoubi et J. Wagoner. — *Constructions*: 3 exposés de D. Quillen, J. Wagoner et F. Keune. — *Toward some calculations*: 5 exposés de D. Quillen, D. Husemoller, S. Bloch, S. M. Gersten et S. B. Priddy. — *Higher K-theory and algebraic geometry*: 4 exposés de S. Bloch, K. S. Brown, S. M. Gersten et J.-P. Jouanolou.

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*The functors  $K_0$  and  $K_1$* : 9 exposés de H. Bass, L. Roberts, J.-L. Loday, C. Pedrini, M. P. Murthy, K. G. Choo, K. Y. Lam, E. Luft, A. J. Casson et F. Waldhausen. — *Representation theory*: 1 exposé de A. W. M. Dress. — *The functor  $K_2$  of Milnor*: 6 exposés de R. K. Dennis, M. R. Stein, J. E. Humphreys, Wu-Chung Hsiang, A. E. Hatcher, B. Harris et J. Stasheff. —  *$K_2$  of fields via symbols*: 4 exposés de H. Bass, J. Tate, R. Elman, T. Y. Lam, J. E. Carroll et J. Graham. — *Arithmetic aspects of K-theory*: 4 exposés de S. Lichtenbaum, J. Coates et J. Tate.

**Hermitian K-theory and geometric applications.** — Proceedings of the Conference held at the Seattle Research Center of the Battelle Memorial Institute, from August 28 to September 8, 1972. — Edited by H. Bass. — Lecture notes in mathematics, 343. — Un volume broché,  $16,5 \times 24,5$ , de xv, 572 pages. — Prix: DM 38. — Springer, Berlin/Heidelberg/New York, 1973.

Contient 13 exposés de J. L. Shaneson, M. Karoubi, H. Bass, C. T. C. Wall, A. A. Ranicki, R. Sharpe, L. R. Taylor, S. Cappell, S. Maumary et T. Petrie.

**Modular functions of one variable II.** — Proceedings International Summer School, University of Antwerp, RUCA, July 17-August 3, 1972. — Edited by Pierre Deligne and Willem Kuyk. — Lecture notes in mathematics, 349. — Un volume broché,  $16,5 \times 24,5$ , de 598 pages. — Prix: DM 38. — Springer, Berlin/Heidelberg/New York, 1973.

*W. Casselman*: An assortment of results on representations of  $GL_2(k)$ . — *P. Deligne*: Formes modulaires et représentations de  $GL(2)$ . — *W. Casselman*: On representations of  $GL_2$  and the arithmetic of modular curves. — *P. Deligne et M. Rapoport*: Les schémas de modules de courbes elliptiques. — *I. I. Piateckii-Shapiro*: Zeta-functions of modular curves. — *R. P. Langlands*: Modular forms and  $l$ -adic representations. — *P. Deligne*: Les constantes des équations fonctionnelles des fonctions L.

W. L. J. VAN DER KALLEN. — **Infinitesimally central extensions of Chevalley groups.** — Lecture notes in mathematics, 356. — Un volume broché, 16,5 × 24,5, de vii, 147 pages. — Prix: DM 16. — Springer, Berlin/Heidelberg/New York, 1973.

Universal central extensions. Central trick. — Degenerate sums. The extension  $r : g'_Z \rightarrow g_Z$ . — The action  $\hat{A}d$ . Structure of  $g_Z^*$ ,  $g_R^*$ . — Admissible lattices and the category  $\mathcal{L}_V$ .  $\Sigma$ -connected components. — The  $G$ -module  $\ker \pi$ . —  $G$ -invariant  $[p]$ -structures. — The extension  $\phi : G^* \rightarrow G$ . — Extensions of  $G$  by a  $G$ -module. — The Hochschild groups. — The existence of  $\phi : G^* \rightarrow G$ . — Relations in the open cell. — Representatives in  $G^*$  of the Weyl group. — The Theorem of generators and relations and its consequences. — The group functor  $G^*$ .

W. BORHO; P. GABRIEL; R. RENTSCHLER. — **Primideale in Einhüllenden auflösbarer Lie-Algebren (Beschreibung durch Bahnräume).** — Lecture notes in mathematics, 357. — Un volume broché, 16,5 × 24,5, de 182 pages. — Prix: DM 18. — Springer, Berlin/Heidelberg/New York, 1973.

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F. L. WILLIAMS. — **Tensor products of principal series representations: reduction of tensor products of principal series; representations of complex semisimple Lie groups.** — Lecture notes in mathematics, 358. — Un volume broché, 16,5 × 24,5, de vi, 132 pages. — Prix: DM 16. — Springer, Berlin/Heidelberg/New York, 1973.

Preliminaries on induced representations. — Representations induced by characters of a subgroup of the Cartan subgroup. — The tensor product of principal series representations of a complex semi-simple Lie group.

U. STAMMBACH. — **Homology in group theory.** — Lecture notes in mathematics, 359. — Un volume broché, 16,5 × 24,5, de viii, 183 pages. — Prix: DM 18. — Springer, Berlin/Heidelberg/New York, 1973.

Varieties of groups. — Elements of homology theory. — Extensions in  $V$  with abelian kernel. — The lower central series. — Central extensions. — Localization of nilpotent groups.

W. J. PADGETT; R. L. TAYLOR. — **Laws of large numbers for normed linear spaces and certain Fréchet spaces.** — Lecture notes in mathematics, 360. — Un volume broché, 16,5 × 24,5, de 111 pages. — Prix: DM 16. — Springer, Berlin/Heidelberg/New York, 1973.

Mathematical preliminaries. — Random elements in separable metric spaces. — Laws of large numbers for random variables and separable Hilbert spaces. — Strong laws of large numbers for normed linear spaces. — Weak laws of large numbers for normed linear spaces. — Laws of large numbers for Fréchet spaces. — Some applications.

J. H. SCHUTZ. — **Foundations of special relativity: kinematic axioms for Minkowski space-time.** — Lecture notes in mathematics, 361. — Un volume broché, 16,5 × 24,5, de xi, 314 pages. — Prix: DM 26. — Springer, Berlin/Heidelberg/New York, 1973.

Kinematic axioms for Minkowski space-time. — Conditionally complete particles. — Implications of collinearity. — Collinear sub-sprays after coincidence. — Collinear particles. — Theory of parallels. — One-dimensional kinematics. — Three-dimensional kinematics. — Concluding remarks. — Characterisation of the elementary spaces. — Homogeneous coordinates in hyperbolic and euclidean spaces.

B. L. VAN DER WAERDEN. — **Einführung in die algebraische Geometrie.** — 2. Auflage. — Die Grundlehren der mathematischen Wissenschaften, Band 51. — Un volume relié, 16 × 24, de XI, 280 pages, avec 17 figures, — Prix: DM 42. — Springer, Berlin/Heidelberg/New York, 1973.

Projektive Geometrie des  $n$ -dimensionalen Raumes. — Algebraische Funktionen. — Ebene algebraische Kurven. — Algebraische Mannigfaltigkeiten. — Algebraische Korrespondenzen und ihre Anwendung. — Der Multiplizitätsbegriff. — Lineare Scharen. — Der noethersche Fundamentalsatz und seine Folgerungen. — Die Analyse der Singularitäten ebener Kurven.

**Proceedings of the Conference on the numerical solution of ordinary differential equations.** — 19, 20 October, The University of Texas at Austin. — Edited by Dale G. Bettis. — Lecture notes in mathematics, 362. — Un volume broché, 16,5 × 24,5, de VIII, 490 pages, avec figures et tables. — Prix: DM 34. — Springer, Berlin/Heidelberg/New York, 1974.

Contient 24 exposés de: Joseph Stoer, Fred T. Krogh, J. C. Butcher, Dale G. Bettis, Roy Danchick, Bernard E. Howard, Paul R. Beudet, Hays Moore, D. B. Frazho, W. F. Powers, R. P. Canale, C. E. Velez, P. J. Cefola, A. C. Long, K. S. Nimitz, J. Baumgarte, E. Stiefel, R. Broucke, R. H. Miller, Roland Wielen, Guy Janin, Avram Hayli, Afaq Ahmad, Leon Cohen, Haywood Smith Jr., L. J. Gallaher, I. E. Perlin, P. J. Firnett, B. A. Troesch, Frank Stenger, Myron Lecar, Rudolf Loeser, Jerome R. Cherniack et Otis Graf.

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