Prof. Dr. J. C. H. GERRETSEN, State University of Groningen

Lectures on Tensor Calculus and Differential Geometry

1962 — xii + 204 pages, Dfl. 21,50, cloth Dfl. 25,-.

1. Linear vector spaces - 2. Metric vector spaces - 3. Bilinear and quadratic forms - 4. Tensors - 5. Manifolds in a metric point space - 6. Curves (Frenet's equations) - 7. Geodesic differentiation (the Christoffel 3-index symbols, Ricci's coefficients of rotation) - 8. Hypersurfaces (the "Theorema egregium") - 9. Theory of curvature of general manifolds (the tensor of Riemann) - 10. Theory of integrability (Bonnet's problem) - Bibliography - Index.

From the Preface :

"This book has been designed to provide its readers with a reasonably self-contained introduction of the methods of differential geometry of general manifolds (...). It is the hope of the author that, when a reader has acquainted himself with the tensor calculus as developed along the chosen lines, he will appreciate the direct introduction of its intricate formalism as needed for the study of general spaces endowed with an arbitrary affine, conformal or metric structure, without reference to an embedding space".

Order through your local bookseller or directly from

P. NOORDHOFF N.V.

P.O.B. 39 - GRONINGEN - THE NETHERLANDS

In preparation (to be published early next year):

A. L. Khovanskii, The Application of Continued Fractions and their Generalizations to Problems in Approximation Theory

Translation of the 1956 Russian edition by Dr. P. Wynn.

This book will be of special interest to students and research workers in the field of Numerical Analysis; besides, it will be of considerable general interest.

The author, who is a lecturer in the Pedagogic Institute at loshkar-Ola, has written the book with great care and clarity.

Chapters. I. Certain Problems in the Theory of Continued Fractions. II. Continued Fraction Expansions of Certain Functions. III. Further Methods for Obtaining Rational Function Approximations. IV. Generalized Continued Fractions.

P. NOORDHOFF N.V. - GRONINGEN - THE NETHERLANDS

A 1962 Noordhoff publication, giving an exposition different from the usual presentation of the

FUNDAMENTALS OF **GALOIS THEORY**

by M. M. POSTNIKOV

Translated from the first Russian edition by Leo F. Boron, with the editorial collaboration of Robert A. Moore, both of Pennsylvania State University.

Contents. Foreword. Part I. The Elements of Galois Theory

1. Elements of Field Theory. - Preliminary remarks. Some important types of extensions. Minimal polynomial. Structure of simple algebraic extensions. Algebraicity of finite extensions. Structure of composite algebraic extensions. Composite finite extensions. Theorem to the effect that a composite algebraic extension is simple. Field of algebraic numbers. Composition of fields.

2. Basic Information from Group Theory. - Definition of a group. Subgroups, normal divisors and factor groups. Homomorphic mappings. 3. Galois Theory. - Normal extensions. Automorphisms of fields. The Galois group. Order of the Galois group. The Galois correspondence. Theorem on conjugate elements. The Galois group of a normal subfield. The Galois group of the composition of two fields.

Part II. The Solution of Equations in Radicals

1. Supplementary Information from the General Theory of Groups. -Generalization of the theorem on homomorphisms. Normal series. Cyclic groups. Solvable and Abelian groups.

2. Equations which are Solvable in Radicals. - Simple radical extensions. Cyclic extensions. Radical extensions. Normal fields with solvable Galois group. Equations which are solvable in radicals.

3. Structure of Equations which are Not Solvable in Radicals. - The Galois group of an equation considered as a permutation group. The decomposition of permutations into the product of cycles. Even permutations. The alternating group. The structure of the alternating group and of the symmetric group. Example of an equation with symmetric Galois group. Evaluation of results obtained above.

4. Non-Solvability in Radicals of the General Equation of Degree $n \ge 5$. — Field of formal power series. Field of fractional-power series. The Galois group of the general equation of degree n. The solution of equations of lower degree.

Books and papers for further reading. Index.

141 pp. - Dfl. 8, - (US \$ 2.25)

For university courses as well as for independent study

Order through your local bookseller or directly from

P. NOORDHOFF N.V. P.O.B. 39 -

GRONINGEN - THE NETHERLANDS