

General Preface

A large number of mathematical books begin as lecture notes; but, since mathematicians are busy, and since the labor required to bring lecture notes up to the level of perfection which authors and the public demand of formally published books is very considerable, it follows that an even larger number of lecture notes make the transition to book form only after great delay or not at all. The present lecture note series aims to fill the resulting gap. It will consist of reprinted lecture notes, edited at least to a satisfactory level of completeness and intelligibility, though not necessarily to the perfection which is expected of a book. In addition to lecture notes, the series will include volumes of collected reprints of journal articles as current developments indicate, and mixed volumes including both notes and reprints.

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MAURICE LÉVY

Preface

These lecture notes represent the content of a course given at Princeton University during the academic year 1950/51. This course was a revised and extended version of a series of lectures given at New York University during the preceding summer. They cover the theory of valuation, local class field theory, the elements of algebraic number theory and the theory of algebraic function fields of one variable. It is intended to prepare notes for a second part in which global class field theory and other topics will be discussed.

Apart from a knowledge of Galois theory, they presuppose a sufficient familiarity with the elementary notions of point set topology. The reader may get these notions for instance in N. Bourbaki, *Éléments de Mathématique, Livre III, Topologie générale*, Chapitres I-III.

In several places use is made of the theorems on Sylow groups. For the convenience of the reader an appendix has been prepared, containing the proofs of these theorems.

The completion of these notes would not have been possible without the great care, patience and perseverance of Mr. I. T. A. O. Adamson who prepared them. Of equally great importance have been frequent discussions with Mr. J. T. Tate to whom many simplifications of proofs are due. Very helpful was the assistance of Mr. Peter Ceike who gave a lot of his time preparing the stencils for these notes.

Finally I have to thank the Institute for Mathematics and Mechanics, New York University, for mimeographing these notes.

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