although only a basic knowledge of algebra and function theory is supposed, the proofs are very concise.

One hundred pages are devoted to the general theory underlying the theory of algebraic functions and numbers; ten pages are devoted to the special study of algebraic numbers; and two hundred pages to the study of function fields.

Much material is covered and unified. Many references are given. Indeed, the last few sections are mainly summaries of the papers quoted. The book's main value is for reference - it serves this purpose well, although it omits the description of the theta and zeta functions of algebraic number fields and covers only summarily the theory of complex multiplication.

Chapter I. A review of linear algebra in which the author develops the theory of linear divisors and the Riemann-Roch theorem for linear divisors. In an appendix the theta function is discussed.

Chapter II. The general framework of the theory. Ideals, discriminants differential Hilbert theory. A brief section on algebraic number fields.

Chapter III. Algebraic functions and differentials. The author returns to a description of classical function theory rather than continuing the methods of Chapter II. The Riemann-Roch theorem for a function field.

Chapter IV. Algebraic functions over the field of complex numbers. Riemann surfaces, elliptic functions, modular functions.

Chapter V. Correspondences between fields of algebraic functions. Applications to number theory. Correspondences of modular functions and applications to quadratic forms. In this chapter are the most interesting and deepest applications. The proofs, however, are at best very sketchy.

The book is well-translated, physically appealing; the notation clear and consistent.

A. Trojan, McGill University

Fibonacci and Lucas numbers, by Verner E. Hoggatt Jr. Houghton Mifflin Company, Boston, 1969. 92 pages.

This little book offers the reader a beautiful, and yet casual, introduction to the fascinating topic of Fibonacci and Lucas numbers. The close relationship between these two types of numbers is continually pointed out to the reader. All the proofs given are elementary in nature. The one thing this book lacks is a chapter on some recent interesting results (e.g. the determining of all the Fibonacci numbers and Lucas numbers which are perfect squares) and some unsolved conjectures.

H. London, McGill University

Studies in number theory, edited by A.V. Malyshev. Consultants Bureau, Plenum Publishing Corp., 227 W. 17th St., New York 10011, 1968. 66 pages. U.S. $12.50.

This is a translation of the original Russian edition, published in 1966. It is the first volume in the Seminars in Mathematics series of the V.A. Steklov Mathematical Institute, Leningrad.

(From the editor's foreward) "The first two papers (A.V. Malyshev, B.Z. Moroz) are closely related and are devoted to the question of the asymptotic distribution of integer points on quadrics.

"The three notes by D.K. Faddeev are partially methodological. A new version of the proof of the explicit formula of the Kummer-Takagi-Hesse reciprocity law is given in the first note. The "Algorithmus der Erhöhung", developed by B.N. Delone (Delaunay) for the solution of indeterminate equations $f(x, y) = 1$, where f is an irreducible cubic form of negative discriminant, is studied in the second; the algorithm is here interpreted in terms of ring theory. The third note is devoted to some refinements of the result of A. Baker on a third-order equation admitting of effective solutions.

"Finally, the last note (A.V. Malyshev) is almost purely methodological. A slight refinement and simplification are given here of the technical details for the proof of the upper bound of Fourier coefficients of parabolic modular forms, due substantially, to Salie."

(Unsigned)

Colloquium on the foundations of mathematics, mathematical machines, and and their applications, held at Tihany (Hungary), September 11-15, 1962. Akadémiai Kiadó, Budapest, 1965. 314 pages. U.S. $9.

This is a collection of 44 papers presented (some as abstracts only) at an international symposium. The papers are in four languages: English (19); French (2); German (16); Russian (7). There are seven parts dealing respectively with foundations, abstract machines, circuits and logical design, mathematical linguistics, programming languages, economic applications, and artificial intelligence. Representative titles : "An independence question in recursive arithmetic" by A. Church; "Non-classical class-calculi" by H. Rasiowa; "A mathematical explication of inductive inference" by S. Watanabe (44 pages); "Algebraic theory of computers" by L. Kalmar; "Programming and partial recursion" by R. Peter; "New class of mathematical languages and addressless computers" by Z. Pawlak; "Automation of industrial systems" by J. Destouches; "Machine-generated problem solving graphs" by H. Gelernter (26 pages).

The general presentation is excellent and many articles are of interest to the workers in the respective fields. Or rather, the articles would have been some years ago - this is the most serious fault of this book - the long delay in publication, in fields as active as those covered here.

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