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Wolfart, Jürgen
Introduction to number theory and algebra. (Einführung in die Zahlentheorie und Algebra.)
Vieweg Studium: Aufbaukurs Mathematik. Braunschweig: Vieweg. x, 223 S. (1996).

The concern of this book is to present the contents of a two semester course in number theory as well as in algebra, the range of which is based upon the idea that problems in number theory are instantly understood as questions which are worth studying, and that algebra is the language which must be developed for doing so. In this respect the book is quite different from the many existing ones in this area, no matter whether they regard algebraic or analytic number theory on the one hand or algebra on the other – none of them really include both at the same time. However, the actual presentation of the individual topics follows the standard pattern. The material covers congruences, groups (including Sylow subgroups and abelian groups), rings (including Euclidean rings and some Diophantine problems, such as Fermat's equation and the *abc*-conjecture), arithmetic modulo n together with the quadratic reciprocity law and ramification in quadratic fields, prime number tests and factorization, fields and Galois theory (including Kummer theory and the transcendence of e.g. π and e). The feature I like most about the book is that, in connection with the introduction of the classical items, the author constantly refers to today's research work, thereby hinting at new theories, giving numerous references, and, most importantly, directing the reader's attention to current mathematics and, in this way, arousing her or his curiosity. *J.Ritter (Augsburg)*

Classification: F65 H45
Keywords: number theory; algebra; congruences; Sylow subgroups; abelian groups; Euclidean rings; Diophantine problems; Fermat's equation; *abc*-conjecture; quadratic reciprocity law; ramification in quadratic fields; prime number tests; factorization; field theory; Galois theory; Kummer theory; transcendence