the 13th International Symposium on Mathematical Programming held on the Kasuga campus of Chuo University, Tokyo, August 29–September 2, 1988.

W. G.

31[68U30].—ERICH KALTOFEN & STEPHEN M. WATT (Editors), *Computers and Mathematics*, Springer, 1989, xiii + 326 pp., 24 cm. Price $39.00.

Computers and Mathematics '89 is the third in a series of international conferences devoted to the use of computers in mathematics and the mathematical sciences. It was held from June 13–17, 1989, at the Massachusetts Institute of Technology. This volume contains 36 papers covering a wide range of topics on mathematical computing. The main subject areas covered include symbolic computation (symbolic integration, computer-enhanced analysis, expert systems for learning mathematics), numerical analysis (differential equations, fractals, hyperbolic manifolds, differential geometry), group algorithms (fast group membership testing, cohomology, group representation theory), and numerical algebra (Jordan forms, algebraic varieties, symmetric matrices, quadratic forms, symmetric polynomials). There are also papers on other areas of mathematical computing.

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32[11Y40, 68Q40].—MICHAEL POHST (Editor), *Algorithmic Methods in Algebra and Number Theory*, Academic Press, London, 1987, 135. pp., 24 $\frac{1}{2}$ cm. Price: Softcover $12.50.

This volume is a special issue of the Journal of Symbolic Computation dedicated to H. Zassenhaus on the occasion of his 75th birthday. It includes 14 publications, introducing algorithms from the fields of computational algebra and number theory, such as a principal ideal test in algebraic number fields (J. Buchmann & H. C. Williams), an analytic method of computing the class number of an algebraic number field (C. Eckhardt), a method to resolve Thue inequalities (A. Pethö), a procedure for generating nonsymmetric modular binary forms over $\mathbf{Q}(\sqrt{2})$ (H. Cohn & J. I. Deutsch), and an extension of the LLL-algorithm for integral lattices (M. Pohst). Also, L. Cerlienco et al. and E. Kaltofen address computational aspects of polynomials such as irreducibility testing and computation of their measure. Two special cases of the inverse problem of Galois theory are solved by G. Malle and by H. Matzat & A. Zeh-Marschke, respectively. Other algorithms include methods for determining integral bases of algebraic number fields (E. Maus), constructing maximal orders