Many of these applications share the same basic kinds of mathematical models: finite difference methods, spectral methods, or particle methods, which in turn lead to systems of linear equations, FFTs, and PIC algorithms. As a result, there were many independent papers on dense linear algebra (block algorithms, matrix communication libraries, parallel eigenvalue, singular value, and least squares algorithms) and sparse linear algebra (sparse matrix-vector multiply and Krylov subspace methods, reordering matrices to reduce fill during elimination, multifrontal methods, and the sparse simplex algorithm). Some of the other numerical methods addressed include domain decomposition, graph partitioning, fast Poisson solvers, constrained optimization, random number generation, interval Newton, and discrete time optimal control.

There were also a large number of papers on parallel programming tools, including load partitioners for mesh and particle methods, distributed object libraries, parallel Fortran and other parallel programming languages and constructs, tools for heterogeneous network computing, communication algorithms, load balancing, scheduling, partitioning, performance modeling, architecture and visualization.

Finally, there was a session on education, including free courseware available electronically for undergraduate courses on parallel computing.

J. W. D.

35[68–06, 68Q40].—THOMAS LEE (Editor), *Mathematical Computation with Maple* V: *Ideas and Applications*, Birkhäuser, Boston, 1993, viii+199 pp., 28 cm. Price: Softcover $34.50.

This is a proceedings of a summer 1993 workshop and symposium conducted by the Waterloo Maple Software company, vendors of the Maple V computer algebra system.

The papers are grouped according to their general topics: introduction of computer algebra systems in educational situations (calculus, engineering, physics): 6 papers; exposition on using Maple for specific tasks in applied mathematics, science, and engineering: 13 papers. Two papers on solids modeling struck this reviewer as particularly interesting.

The education papers (and their references) may be of particular use to faculty considering introducing a computer algebra system (Maple, Mathematica, or some other program) into their curriculum.

RICHARD J. FATEMAN

Computer Science Division, EECS Dept.
University of California
Berkeley, CA 94720

36[01A75, 11–03].—D. MCCARTHY (Editor), *Selected Papers of D. H. Lehmer*, The Charles Babbage Research Center, Winnipeg, Canada, 1981, 3 vols., ixx+368 pp., 429 pp., 341 pp., $23\frac{1}{2}$ cm. Price $105.00 hardcover, $72.00 paperback (for the set).

The issuing of this three-volume set in 1981 has given to the mathematical world a collection of the major writings of one of the foremost computational