

the unwary. A simple such example is that no distinction is made between a column-vector and a row-vector.

Although we have tried to restrict our comments here to the book under review, readers may wish to refer to reviews of the *Mathematica program* as well. Simon [7] compares *Mathematica* to several other systems in terms of computational speed and convenience on a set of problems. Another review [5] discusses at length how well the program fulfills the goals set out by the designers.

Readers who have become aware, through *Mathematica*, of the general capabilities of symbolic manipulation programs may find it beneficial to examine literature on alternative systems such as *Derive*, *Macsyma*, *Maple*, *Reduce*, and *Theorist*. Determining the "best" system is necessarily dependent on individual circumstances. At the very least, it appears that some of these other systems get correct answers when *Mathematica* does not. Quoting further specific flaws or discrepancies between the documentation and the system may be pointless because the behavior of the system may be changed freely.

What we have observed is consistent with the disclaimer on the inside title page: "The author, Wolfram Research and Addison-Wesley shall not be responsible under any circumstances for providing information on or corrections to errors and omissions discovered at any time in this book or the software it describes, whether or not they are aware of the errors or omissions. The author, Wolfram Research and Addison-Wesley do not recommend the use of the software described in this book for applications in which errors or omissions could threaten life, injury or significant loss."

RICHARD J. FATEMAN

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

1. N. Blachman, *Mathematica, a practical approach*, Prentice-Hall, 1991.
2. B. Buchberger, G. E. Collins, and R. Loos (eds.), *Computer algebra: Symbolic and algebraic computation*, Springer-Verlag, 1983.
3. B. W. Char, K. O. Geddes, G. H. Gonnet, M. B. Monagan, and S. M. Watt, *MAPLE reference manual*, Symbolic Computation Group, Dept. of Comput. Sci., Univ. of Waterloo, Waterloo Maple Publ., 1990.
4. J. H. Davenport, Y. Siret, and E. Tournier, *Computer algebra*, Academic Press, 1988.
5. Richard Fateman, *A review of Mathematica*, J. Symbolic Comput. (to appear).
6. Roman Maeder, *Programming in Mathematica*, Addison-Wesley, 1989.
7. Barry Simon, *Four computer mathematical environments*, Notices Amer. Math. Soc. **37** (1990), 861–868.

**13[68–06].**—DAVID V. CHUDNOVSKY & RICHARD D. JENKS (Editors), *Computers in Mathematics*, Lecture Notes in Pure and Appl. Math., Vol. 125, Marcel Dekker, New York and Basel, 1990, vii + 410 pp., 25 cm. Price \$89.75.

This volume contains 14 contributions to the International Conference on Computers and Mathematics, which took place July 29–August 1, 1986, at Stanford University. The papers deal with the role of computers in subjects

as diverse as number theory, analysis, special functions, algebraic geometry, topology and mathematical physics. Topics include: factorization, polynomial root finding, algorithms for solving differential equations, computer animation, automated theorem proving, symbolic computation, computer algebra, and several others.

H. C. W.