In addition to the notes and references at the end of each chapter, Rubio provides exercises for each chapter in one appendix, and an 85-page bibliography in another.

Students can test their understanding of this material not only by working through the suggested exercises but also by correcting quite frequent typographical errors; e.g., replacing "$\subseteq$" by "$\supseteq$" near the bottom of page 18, "$\bigcup_{i\in\mathbb{N}}$" by "$\bigcup_{n\in\mathbb{N}}$" in Eq. 1.25, and "$\exists x\psi$" by "$\exists z\psi$" in Definition 1.7d.

Much of this book develops sophisticated mathematical concepts needed for advanced applications of nonstandard analysis, rather than concentrating on just the more familiar concepts needed for certain simpler applications. For example, properties of κ-saturated superstructures are developed for arbitrary infinite cardinals κ, before discussing the embedding of the ordered field $\mathbb{R}$ of reals into the ordered field $^*\mathbb{R}$ of hyperreals. Consequently, this book is more for the mathematician seeking powerful new ways to study advanced optimization theory, rather than for the numerical analyst with only a casual interest in nonstandard analysis.

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12[65-06, 65Y05]—*Parallel processing for scientific computing*, David H. Bailey, Petter E. Bjørstad, John R. Gilbert, Michael V. Mascagni, Robert S. Schreiber, Horst D. Simon, Virginia J. Torczon, and Layne T. Watson (Editors), SIAM Proceedings Series, Society for Industrial and Applied Mathematics, Philadelphia, PA, 1995, xviii + 875 pp., $25\frac{1}{2}$ cm, softcover, $105.00

These are the proceedings of the Seventh SIAM Conference on the topic of the title, held February 15–17, 1995, in San Francisco. Included are minisymposia papers, contributed papers, and short summaries of poster presentations. The nearly 200 papers, organized in three parts, each further subdivided into four chapters, give an impressive account of the current use of parallelism in a vast variety of application areas. Specifically, Part I entitled "Applications", contains chapters on image, signal, and information processing; optimization and control; computational physics; and mathematical applications. Part II, entitled "Algorithms", has chapters on n-body simulation; partial differential equations; sparse linear systems; and eigenvalues. Part III, entitled "Systems", finally concludes with chapters on mesh partitioning and load balancing; languages and compliers; libraries and runtime systems; and visualization and performance. There is a final chapter containing position papers from a Panel Discussion on the question "Is scalable parallel computing a myth?". An author index concludes the volume.

W. G.

13[11-01, 11Yxx]—*A course in computational algebraic number theory*, by Henri Cohen, Graduate Texts in Mathematics, Vol. 138, Springer, Berlin, 1993, xxii + 534 pp., 24 cm, $49.00

The present book is one of the most popular texts on computational number theory. Its attitude is *practical.* For instance, in the first chapter, among some gen-