5[65–02, 65C05, 65D30, 65D32, 65V05].—PHILIP J. DAVIS & PHILIP RABINOWITZ, *Methods of Numerical Integration*, 2nd ed., Academic Press, Orlando, Fla., 1984, xiv + 612 pp., 23 cm. Price $52.00.

This book is the third volume on this subject by the same authors. The first was *Numerical Integration*, Blaisdell Publishing Co., Waltham, Mass., 1967 (see Review **43**, *Math. Comp.*, v. 22, 1968, pp. 459–460; *Math. Reviews*, v. 35, 1968, #2482); the second was *Methods of Numerical Integration*, Academic Press, Waltham, Mass., 1975 (see Review **28**, *Math. Comp.*, v. 30, 1976, pp. 666–667; *Math. Reviews*, v. 56, 1978, #7119). This latest version is larger by about 1/3 than the previous. It is an update with an attempt to include some of the many new results that have been published during the interlude since the previous edition, but with more emphasis on applications. Although the organization is very similar to the previous well-organized edition, updates have been made in nearly every section. In addition, references to the many newly published texts and articles have been included.

The authors' previous texts on this subject were very well written, easy to read and understand, requiring only an understanding of calculus and in a few instances a concept of elementary analytic function theory. This is also true of the present version, except that it is more complete.

A glance at the table of contents reveals the following: Chapter 1, *Introduction* (with 16 sections); Chapter 2, *Approximate Integration over a Finite Interval* (with 13 sections); Chapter 3, *Approximate Integration over Infinite Intervals* (with 10 sections); Chapter 4, *Error Analysis* (with 9 sections); Chapter 5, *Approximate Integration in Two or More Dimensions* (with 10 sections); Chapter 6, *Automatic Integration* (with 6 sections); Appendix 1, *On the Practical Evaluation of Integrals* (by Milton Abramowitz); Appendix 2, *Fortran Programs*; Appendix 3, *Bibliography of Algol, Fortran, and PL/I Procedures*; Appendix 4, *Bibliography of Tables*; Appendix 5, *Bibliography of Books and Articles*; and Index.

I recommend this book highly, for both the numerical integration user and researcher.

F. S.

6[35–01, 78A05].—NORMAN BLEISTEIN, *Mathematical Methods for Wave Phenomena*, Computer Science and Applied Mathematics, A Series of Monographs and Textbooks, Werner Rheinboldt, Editor, Academic Press, Orlando, Fla., 1984, 23 cm. Price $55.00.

The present book contains nine chapters with the following headings: First-order partial differential equations; The Dirac delta function, Fourier transforms, and asymptotics; Second-order partial differential equations; The wave equation in one space dimension; The wave equation in two and three dimensions; The Helmholtz equation and other elliptic equations; More on asymptotics; Asymptotics techniques for direct scattering problems; Inverse methods for reflector imaging.

The above list of chapter headings is more revealing about the scope of the book than the title, which may mean different things to different people. Indeed, there is a