voted to general remarks on approximation, the other to properties of Chebyshev polynomials, and an appendix with some material on linear difference equations with constant coefficients and Bessel functions. The book concludes with a list of formulas.

Unfortunately, the quality of the exposition does not live up to the standards one has come to expect from this series. Not only is the treatment inexcusably superficial, but the author is given to loose terminology, and inaccurate, sometimes misleading, or even faulty, statements. When discussing Chebyshev expansions, for example, the discrete orthogonality property of Chebyshev polynomials is stated incompletely (p. 30), and as stated does not yield the expression for the expansion coefficients given later. Further on, the author derives the Chebyshev expansion for b^{zx}, not noting that it follows directly from the previously derived expansion for e^{zx} (by replacing z by $z \ln b$). On p. 66, in connection with the equivalence of power series and continued fractions (Euler's formulas) the author states that by taking the first few convergents of the continued fraction, one obtains "rational approximations to any function that has a power series expansion," apparently unaware that the convergents are identical with the partial sums of the power series. The remark that follows, concerning convergence of continued fractions, is entirely out of place in this context. The list of inadequacies, such as these, could be continued at some length.

According to the preface, the "book is intended to be used either as a textbook at the advanced undergraduate or graduate level or as a handbook for people actively engaged in the field." It seems to this writer that the serious shortcomings of the exposition preclude classroom use of the book, and as a reference book it is lacking in precision and completeness.

W. G.

81[2.10, 2.25, 3,.4, 5, 6, 7, 8, 12, 13.05, 13.15].—BERTRAM MOND, Editor, *Blanch Anniversary Volume*, Aerospace Research Laboratories, Office of Aerospace Research, United States Air Force, 1967, 379 pp., 29 cm. Unbound copies of this volume can be purchased at $3.00 per copy from Clearing House for Federal, Scientific and Technical Information, Springfield, Virginia 22151.

This is a collection of papers on a variety of subjects presented to Dr. Gertrude Blanch on the occasion of her retirement as a senior scientist from the Aerospace Research Laboratories at Wright-Patterson Air Force Base. The contributors and their titles are as follows:

Gaetano Fichera, Dedication

John V. Armitage, The Lax-Wendroff method applied to axial-symmetric swirl flow

Henry E. Fettis, Calculation of toroidal harmonics without recourse to elliptic integrals

Gaetano Fichera, Generalized biharmonic problems and related eigenvalue problems

Karl G. Guderley and Marian Valentine, On error bounds for the solution of systems of ordinary differential equations

H. Leon Harter, Series expansions for the incomplete gamma function and its derivatives

Charles L. Keller and Mark C. Breiter, Bounds on the value of a Dirichlet integral representing a coefficient of apparent mass

Paruchuri R. Krishnaiah, Selection procedures based on covariance matrices of multivariate normal populations

Yudell L. Luke, Recursion formulas for polynomials in rational approximations to generalized hypergeometric functions

Mary D. Lum, On degradation of combination locks and the maximum time to open them

Robert E. Lynch, Generalized trapezoid formulas and errors in Romberg quadrature

Knox Millsaps and Norman L. Soong, Heat transfer in a plane incompressible laminar jet

Bertram Mond and Donald S. Clemm, Some computational aspects of the tensor product of linear programs

Bertram Mond and Oved Shisha, A difference inequality for operators in Hilbert space

Ida Rhodes, The mighty man-computer team

Paul R. Rider, Products and quotients of generalized Cauchy variables

Max G. Scherberg, Explorations of supersonic shear flow over a cavity

Henry C. Thacher, Jr., Computation of the complex error function by continued fractions

Peter Wynn, Transformations to accelerate the convergence of Fourier series.

It might have been fitting, for this occasion, to include a scientific biography of Dr. Blanch and a list of her publications. Even so, Dr. Blanch's own interests, influence, and guidance, are reflected in a good many of the papers presented.

W. G.

82[3, 4, 5, 13.15, 13.35].—DONALD GREENSPAN, Editor, *Numerical Solutions of Nonlinear Differential Equations*, John Wiley & Sons, Inc., New York, 1966, x + 347 pp., 24 cm. Price $7.75.

These are the proceedings of an Advanced Symposium conducted by the Mathematics Research Center, U. S. Army, at the University of Wisconsin, May 9–11, 1966, containing fourteen lectures by invited speakers, and 24 abstracts of contributed papers.

The principal authors and their titles are as follows:

Garrett Birkhoff, Numerical solution of the reactor kinetics equations

J. R. Cannon, Some numerical results for the solution of the heat equation backwards in time

C. W. Clenshaw, The solution of van der Pol's equation in Chebyshev series

L. Collatz, Monotonicity and related methods in non-linear differential equations problems

Germund G. Dahlquist, On rigorous error bounds in the numerical solution of ordinary differential equations

Stuart E. Dreyfus, The numerical solution of non-linear optimal control problems

H. B. Keller and H. Takami, Numerical studies of steady viscous flow about cylinders