by the textbooks of Allendoerfer and Oakley and Johnson and Kiokmeister.

An idea of the scope of the book is best obtained from the twelve chapter headings. These are as follows: Basic Concepts, Approximation of Functions by Polynomials, Iterative Methods of Solving Equations, Matrices and Systems of Linear Equations, Computational Methods with Matrices, The Characteristic Values and Characteristic Vectors of a Matrix, Interpolation, Differentiation and Integration, Remainder Terms for the Integration Formulas, Ordinary Differential Equations, Systems of First-Order Equations, Difference Equations. Since these topics are covered in a short volume of 157 pages, it is obvious that the treatment has to be quite abbreviated in many spots.

The reviewer feels that the book will fill the purpose for which it was designed; it is a useful addition to the literature. In reading the volume, a few minor inaccuracies were noted, but these will easily be corrected in a second printing. For example, on page 36, it is not correct to say that "direct use of Newton's Method ... is impossible with two equal roots, in the sense that the expression $f(c)/f'(c)$ is indeterminate when $x = c$ is a multiple root of $f(x) = 0$". The only problem introduced by a multiple root is that the speed of convergence of the iteration decreases; for example, the equation

$$x^8 - 11x^7 + 38x^6 - 25x^5 - 88x^4 + 127x^3 - 62x^2 + 13x - 1 = 0$$

has a triple root with the value $2 + \sqrt{3}$. Using 28 decimals, 36 iterations, and Newton's Method without any modification, we find this root as 3.732051. It is certainly true that $f(c)$ and $f'(c)$ both approach 0 as x approaches the root c; but this fact is immaterial to the computer, since the rates of approach differ and their quotient is thus not indeterminate to the computer.

R. G. Stanton, University of Waterloo

Cours d'analyse de l'École Polytechnique, par J. Favard. Cahiers Scientifiques, Fasc. 26. Gauthier-Villars, Paris. Tome III, Fasc. I, 294 pages, 1962, 45 NF. Fasc. II, 542 pages, 1963, 100 NF.

The two parts of volume III are devoted to ordinary and partial differential equations, integral equations, and the calculus of variations. The book is written from a classical point of view, in a pleasant, unhurried style. The chapter headings are as follows:

Volume III, Part I. (Ordinary differential equations). I Elementary methods and results; II differential equations in the real field and the equations in total differentials, theorems of existence, local problems;

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III (continuation) global problems; IV-V differential equations in the analytic field; the theorem of Fuchs.

Volume III, Part II. VI Partial differential equations of first order; VII-VIII general properties of partial differential equations, characteristics; IX hyperbolic equations of second order; X harmonic functions, newtonian potentials, elliptic equations of second order; XI parabolic differential equations of second order; XII integral equations; XIII calculus of variations.

G. G. Lorentz, Syracuse, N.Y.

Modern Operational Calculus with applications in technical mathematics, by N. W. McLachlan. Revised edition. Dover Publications Inc., New York, 1962. xiv + 218 pages. $1.75. (Canadian markup is 15 per cent.)

For a detailed review see Mathematical Reviews, vol. 9 (1948) page 581. This is called a revised edition, but the only significant revision is in the price, which used to be $5. Mathematicians using the latest edition of Operational Mathematics by Churchill will probably agree that Churchill's book is just as well written, is more complete, and is typographically more attractive, but that McLachlan's book is a superb source of exercises and their solutions. Caution: the p-multiplied Laplace transform is used throughout.

H. F. Davis, University of Waterloo

Stability of Motion, by N. N. Krasovskii. Translated from the (1959) Russian Ed. by J. L. Brenner. Stanford University Press, 1963. $6. U.S.

Krasovskii's well-known monograph on the Stability of Motion has now been translated from Russian into English. The author gives essentially an exposition of Lyapunov's "second method," but does not restrict himself to the original theory. Many modern generalizations are presented and techniques for applications are given to practical cases. In the present days of servomechanisms and control systems, this is of intense practical interest.

The treatment is basically theoretical and complete proofs of the lemmas and theorems are usually (with very few exceptions) supplied. The author is one of the major original contributors on dynamic stability theory. His style is clear, and the translation is easily readable, something which is not always the case in translations from Russian into English owing to the substantially different grammatical structures of the two languages.

A. E. Scheidegger, University of Illinois

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