

anyone who needs detailed knowledge of these functions for problems in physics and technology. (The algebraic aspects, e.g. the transcendental solution of the generic equation of fifth degree in terms of Theta functions seem to have been excluded entirely.) However, there is one more aspect of the book which should be mentioned since it may appeal to a large number of mathematicians of all professional denominations. The behavior of several functions, in particular of Weierstrass' \wp -function in the complex domain is illustrated by numerous magnificent drawings. Of these, the figures on pp. 168, 169, 175, 177 and 199 deserve special mention.

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40[P, T, VI].—JERRY DEAN PEARSON & ROBERT C. FELLINGER, *Thermodynamic Properties of Combustion Gases*, The Iowa State University Press, Ames, Iowa, 1965, xv + 213 pp., 24 cm. Price \$7.50.

The book is a collection of tables of the equilibrium thermodynamic properties of the products of combustion of a hydrocarbon fuel at high temperatures. The fuel must be of the type $C_K H_{2K}$ where K is any integer.

The tables give the enthalpy, entropy, molecular weight, specific heat ratio, and sonic velocity of the combustion products as a function of the total pressure and temperature of the gas mixture in various percentages for stoichiometric oxygen. The pressures range from .01 to 25 atmospheres and temperatures from 1500°K to 3500°K.

The book should be of use primarily to mechanical or aeronautical engineers interested in combustion problems.

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41[P, W, X, Z].—LÁSZLÓ KALMÁR, Editor, *Colloque Sur les Fondements des Mathématiques, les Machines Mathématiques, et Leurs Applications*, Gauthier-Villars, Paris, 1965, 317 pp., 24 cm. Price \$8.00.

This volume contains a selection from the lectures presented at the Colloquium "Foundations of Mathematics, Mathematical Machines and Their Applications", held at Tihany, Hungary, September 11–15, 1962. The papers presented are grouped into seven categories:

1. Foundations of Mathematics and Mathematical Logic. This section contains papers by the following authors: J. Bečvář, A. Church, H. B. Curry, Gy. Graetzer, K. Haertig, H. Hermes, M. Makkai, G. H. Mueller, H. Rasiowa, E.-J. Thiele, V. Vučkovič, S. Watanabe.

2. Abstract Theory of Automata and Computers. Papers by: T. Frey, M. A. Gavrilov, L. Kalmár, R. Péter.

3. Circuit Theory. Papers by: A. Ádám, Ya. Barat, M. Coroi-Nedelcou, I. Fenyoe, H. Rohleder.

4. Mathematical Linguistics and Machine Translation. Papers by: S. Abraham & G. Salapina, M. Bierwisch, L. Deshoe, Gy. Hell, F. Kiefer, R. B. Lees, S. Marcus, P. Sgall, Gy. Sipocczy.

5. Digital Computers and Programming. Papers by: B. Doemoelki, I. Friš & P. Liebl, M. A. Kartsev & E. B. Glivenko, Z. Pawlak, Gy. Révész.

6. Application of Computers in Economics. Papers by: C. A. Aleskerov, J. L. Destouches, S. Ganczer, I. Kiss, B. Krekó, B. Martos, J. Piehler.

7. Artificial Intelligence, Machine Learning. Papers by: H. L. Gelernter, V. M. Glushkov & A. A. Ctogni.

E. I.

42[P, X].—S. O. ASPLUND, *Structural Mechanics: Classical and Matrix Methods*, Prentice-Hall, Inc., Englewood Cliffs, N. J., 1966, xiii + 474 pp., 24 cm. Price \$14.00.

The purpose of this book is to serve as a text for advanced undergraduates and graduate students in structural mechanics. It treats both determinant and indeterminant structures in great detail. However, the emphasis in this book is somewhat different from the one normally found in a structural mechanics text. The author is very cognizant of the impact of modern high-speed computers on this field and has written his text accordingly. Thus, while classical methods are discussed, matrix methods are emphasized as being the more useful to the practicing engineer.

In many ways this is a remarkable book. It is contemporary and every page reflects the author's familiarity with his subject. Each topic is given a consistently polished development and logic is never sacrificed to intuition. The style of the book may tend to be overly succinct and the notation may cause some difficulty to those familiar with more common notations. However, with these reservations, this is a highly recommended book.

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43[P, X].—A. HALANAY, *Differential Equations: Stability, Oscillations, Time Lags*, Academic Press, New York, 1966, xii + 528 pp., 24 cm. Price \$19.50.

This monograph is essentially a translation of the original Rumanian edition of 1963. It presents a unified treatment, for ordinary differential equations and functional-differential equations, of those topics in stability theory and the theory of oscillations which have been at the center of interest during the past decade.

Chapter I concerns the various types of stability, including total and integral stability, that may be defined for the solutions of ordinary differential equations. The setting is that of Lyapunov's Second Method, and the stability criteria given, except for Perron's condition, are either deduced from, or stated directly in terms of appropriate Lyapunov functions. In Chapter II sufficient conditions for the absolute stability of regulator systems are derived, using both Lurie's approach and the method of Popov. Chapter III deals with the existence of periodic and al-