and understandable to the engineer and physicist interested primarily in applications. To do this, it appeared particularly desirable to present the mathematical techniques by applying them to definite examples of physical interest even at the expense of mathematical generality and elegance."

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9[P, X].—WENDELL E. GROVE, *Brief Numerical Methods*, Prentice-Hall, Englewood Cliffs, N. J., 1966, ix + 117 pp., 24 cm. Price $6.75.

This short book of 114 pages is an introduction to some elementary numerical methods. The emphasis is on presenting the numerical method and how to apply it. Although there is essentially no mathematical analysis, the methods discussed are sufficiently motivated.

The level of the book is sophomore-junior. It is probably more appropriate for engineering students than mathematics majors. It is computer oriented. The following list of chapter titles indicates the scope of the book: Iterative solution of algebraic and transcendental equations; Complex roots; Simultaneous equations; Interpolation techniques; Curve fitting; Numerical integration; Solution of differential equations; A simple boundary value problem.

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10[P, X, Z].—N. E. KOBRINSKII & B. A. TRAKHTENBROT, *Introduction to the Theory of Finite Automata*, translated from the Russian, North-Holland Publishing Co., Amsterdam, 1965, x + 337 pp., 23 cm. Price $8.40.

This book presents automata theory as applied mathematics and so is quite distinct in its treatment from much work on "abstract" automata in the United States.

The book begins with a self-contained lucid account of elementary logic. Real-time devices for processing digital data are introduced and shown to be associated with a definite class of mathematical operators. The physical characteristics of vacuum tubes (valves!), diodes, transistors, and ferromagnetic elements, are briefly discussed and their use in constructing flip-flops and in realizing basic logical operators is indicated. The problems of analyzing (going from a physical circuit to the operator it realizes) and synthesizing (going from a mathematical operator to a circuit realizing it) are discussed in detail. A final chapter describes the work of Shannon and Lupanov on asymptotic estimates for nets realizing a given operator.

The book is very well written and the English translation reads quite smoothly. It is an important contribution to the developing literature of automata theory.

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