There is included a list of Pólya's 217 papers (up to 1961) and his six books. We learn that *How To Solve It* has been translated into Arabic, Croatian, French, German, Hebrew, Hungarian, Japanese, and Russian (so far).

Even the table of contents is too long to reproduce here, and we merely list the many authors. They form, to misuse a definition of Alexander Weinstein, a *distinguished sequence*: L. V. Ahlfors, N. C. Ankeny, H. Behnke, S. Bergman, A. S. Besicovitch, R. P. Boas, Jr., A. Brauer, R. Brauer, H. S. M. Coxeter, H. Cramér, H. Davenport, B. Eckmann, A. Edrei, A. Erdélyi, P. Erdös, W. H. J. Fuchs, T. Ganea, P. R. Garabedian, H. Hadwiger, W. K. Hayman, J. Hersch, E. Hille, P. J. Hilton, J. L. Hodges, Jr., A. Huber, A. E. Ingham, M. Kac, J. Karamata, S. Karlin, J. Korevaar, C. Lanczos, P. D. Lax, E. L. Lehmann, D. H. Lehmer, E. Lehmer, P. Lévy, J. E. Littlewood, C. Loewner, E. Makai, S. Mandelbrojt, N. Minorsky, Z. Nehari, J. Neyman, L. E. Payne, M. Plancherel, J. Popken, H. Rademacher, A. Rényi, J. Robinson, R. M. Robinson, W. W. Rogosinski, P. C. Rosenbloom, H. L. Royden, G. Scheja, M. Schiffer, I. J. Schoenberg, L. Schwartz, E. L. Scott, J. Siciak, D. C. Spencer, J. J. Stoker, J. Surányi, G. Szegö, E. C. Titchmarsh, P. Turán, J. G. Van der Corput, J. L. Walsh, H. F. Weinberger, A. Weinstein, and A. Zygmund.

D. S.

**42[G].**—L. E. FULLER, *Basic Matrix Theory*, Prentice-Hall, Inc., Englewood Cliffs, N. J., 1962, ix + 245 p., 23 cm. Price $9.45.

The preface addresses this book to the "person who needs to use matrices as a tool." The writing style is conversational but careful. Illustrative examples are given in unusual detail. Procedures are outlined in stepwise fashion, and potential pitfalls in the application of an algorithm are red-flagged.

The attitude toward rigor is suggested by the following: many definitions are stated formally; several properties are enunciated; but nowhere are there any so-called theorems. Nevertheless, in the casual style, much worthwhile information appears, information which other authors might label as theorems. Many of these propositions are proved or made convincingly plausible. Other results whose proof would be long and/or deep are simply asserted.

Considerable attention is paid to canonical forms. The algorithms for finding these are elaborately discussed. Deeper questions concerning whether the claimed canonical forms are really entitled to be accorded such a title are quietly suppressed—an action carefully designed to keep the mathematics at "as simple a level as possible."

The first four chapters develop basic notions about matrices, vectors, and determinants; elementary row or column transformations are emphasized. The next three chapters stress computational methods; techniques for finding characteristic roots and characteristic vectors are presented; methods discussed for matrix inversion or for solution of a system of equations include those of Crout, Doolittle and Gauss-Seidel, as well as partitioning, iteration, and relaxation. The final chapter is devoted to bilinear, quadratic, and Hermitian forms. Each chapter has exercises, mostly of a practice nature.

R. A. GOOD

Department of Mathematics
University of Maryland
College Park, Md.