There are a fair number of typographical errors, and the reader must therefore proceed with some caution, especially where misplaced minus signs change the meaning entirely. Also to be guarded against is a terminological discrepancy. For

$$b_0 + \frac{1}{b_1 +} \frac{1}{b_2 +} \frac{1}{b_3 +} \cdots$$

most books refer to the $b_i$ as *partial quotients*, while here (page 2) this is the name for the quantities $1/b_i$.

The forthcoming translation of Khintchine's *Continued Fractions* is also by Wynn and should complement the present volume for the arithmetical and theoretical aspects of continued fractions.

D. S.

**71[G, X].**—D. K. Faddeev & V. N. Faddeeva, *Computational Methods of Linear Algebra*, W. H. Freeman & Company, San Francisco, California, 1963, xi + 621 p., 24 cm. Price $11.50.

This volume should not be confused with an earlier one having the same title, and written by the second of the present authors. The earlier volume appeared in the USSR in 1950, and a translation, published by Dover, appeared in 1959 and was reviewed briefly in this periodical [v. 15, 1961, p. 201, RMT **36**].

The Russian edition of the volume here translated appeared in 1960, and bears little resemblance to the earlier one. It is nearly three times as large; it contains an extensive bibliography (40 pages as compared with two in the earlier one); and the original printing of 10,150 copies was evidently soon exhausted, since a second edition, somewhat larger (734 pages as compared with 656) appeared in 1963 in a printing of 12,000 copies. Each edition was, at the time of its appearance, by far the most complete and up-to-date treatment of the subject in print. Perhaps the most serious criticism that could be made of either is, curiously, the scant use of norms, in spite of the fact that the 1950 volume had already called attention to their usefulness. Since that time this reviewer, A. M. Ostrowski, F. L. Bauer, J. H. Wilkinson, and others, have developed the theory extensively and made numerous applications, but little or no account of this work is taken in the present volume or its successor. Otherwise, however, the first chapter gives a fairly complete and self-contained development of the theory of matrices so far as it is relevant to computational problems. Thereafter, there is discussion with numerical illustrations of virtually every known method of solving the standard problems of finding inverses, solutions, and characteristic roots and vectors.

Regretfully, though, it must be said that the translation by no means does justice to the original. A first glance at the bibliography arouses apprehensions that are, alas, fulfilled by an examination of the text proper. In the original, names are listed alphabetically according to the Russian spellings. In the translation, Aitken is properly transported from the end of the alphabet to the beginning, but the first four names on the first page of references in the translation are Abramov, Azbelev, Albert, and Aitken, in that order. Curiously, starting with Rushton, who follows Růžička, the ordering is nearly correct (there is one inversion, and the misspelled Scherman is placed properly for that spelling). For several pages at the start diacritical marks are completely omitted from French and German titles, then suddenly they appear. In the original, the normal spelling of non-Russian names is given, sometimes incorrectly, in parentheses following the Russian spelling. The errors are retained in the translation, and at least one new one added: Joung for Young, Scherman for Sherman, an incorrect initial for Wilkinson, two distinct misspellings of the name of this reviewer. A "supplementary" list in the original, presumably added after the main one had been compiled, remains separate in the translation.

In the table of contents, there are nine cases of poor or even misleading phraseology: "gradients of functionals" becomes "functional gradients"; "condition of matrices" becomes "conditioned matrices"; "resolution" into factors becomes "expansion" into factors; a method of "supplementation" (*popolnenija*, what the reviewer calls a method of modification) becomes the "reinforcement" method; "some methods of conjugate directions" is translated clumsily as "some conjugate directions methods." These are perhaps the worst.

Since the translator is not (presumably) a mathematician or a numerical analyst, it is not surprising that, for example, "deflation" becomes "exhaustion," and in a footnote it is remarked that occasional nonstandard terminology should not cause trouble for readers who are "literate enough." This is true, but it can cause trouble for beginners, who could otherwise find in this an excellent introduction to the subject. And mere nonstandard technical terminology is not the only fault. "Suitably generalized" becomes "throughly [*sic*] reviewed" (p. 32); "terms" becomes "elements" (p. 61); plurals become singular and prepositions are omitted; reference to an example in "paragraph 7" is said to be on p. 80 (actually it is on p. 55); symbols are omitted; subscripts are raised; definite articles improperly supplied (in Theorem 7.5). These slips were noted in scarcely more than a casual scanning of a small portion of the whole; in this last list they represent purely mechanical faults in translating and in proofreading, and there were no corresponding slips in the original to have led to them.

To those who are "literate enough," in the subject but not in Russian, the translation can be highly recommended, because the faults in translation should cause only occasional annoyance. The lost symbols can be supplied after a little thought; the definite articles in Theorem 7.5 can be recognized as not belonging. The material is abundant, and, with proper corrections, the presentation very good. Those who are less literate should be warned to read with care.

A. S. H.

**72[G, X, Z].**—ROBERT D. LARSSON, *Equalities and Approximations with "FORTRAN" Programming*, John Wiley & Sons, New York, 1963, x + 158 p., 24 cm. Price $5.50.

This is a book written in response to the needs of the high school teacher who wishes to enrich the curriculum for high-ability students. It also might find use in the programs of many junior colleges. Basically this book contains topics from linear algebra together with some topics in elementary approximation theory. The latter serves as a vehicle for introducing the basic ideas of integral calculus.

The prerequisites for this book are elementary algebra and trigonometry. Chapter I introduces the idea of a group and its properties. In Chapter II matrices are