tion of a few early ones that ask the reader to verify as yet undefined properties, quite appropriately located. Those following Chapters three and six, as has already been pointed out, are particularly lovely; no less so are those following Chapter seven. There are one or two lapses in the otherwise exceptionally smooth, unhesitating, yet comfortably paced exposition, most notably in the last eight lines of page 130, where the author's notation does not convey his intentions (what he has in mind is to be found on pp. 124 ff. of his notes "Abelian categories: the inside theory"), and again, to a lesser extent, in the second five lines of p. 128, where the desire for brevity has all but banished clarity. Everywhere else, the writing is crisp, informative, and unambiguous; and it sweeps the reader gently but unhesitatingly forward to its goal.

In sum, one may quibble about what else should have found room in Freyd's book, but considering it as it comes to us, it is well produced, has worthwhile things to say, and says them clearly and with determination. Any algebraist—indeed, any modern-minded mathematician, whether full-fledged or nestling—will probably want to read at least parts of it at least once.

F. E. J. LINTON

Number theory.[1] By Z. I. Borevich and I. R. Shafarevich, Moscow, 1964.

The Russian mathematicians have for many years been partial to number theory, and it is an interesting speculation why this should be so. Can it be due to the influence of Euler who spent many years in the later part of the eighteenth century in what was then called St. Petersburg, or perhaps to some characteristic of the Russian mind? Be it so or not, they have long been known for their numerous contributions to the subject. They have originated many new ideas and made a large number of really important and fundamental discoveries. These have opened up new avenues of investigation and have had far reaching effects and influence on the development of the theory.

One calls to mind the work of Tchebycheff on prime numbers, of Markoff on the minima of indefinite binary quadratic forms, the work of Korkine, Zolotareff, Voronoi on quadratic forms in several variables, the work of Khintchine on the density of sequences of numbers and on Diophantine approximation, Tartowski on Diophantine equations, Tchebotareff on the minimum of the product of linear poly-

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[1] An English translation is being prepared by the Academic Press.