processes in a queuing system push against one another, many problems arise that are not only challenging but indeed of important practical consequence. Many such problems pertinent to simpler models are already resolved. Much more, however, remains to be done with complex systems without the inclusion of the traditional assumptions.

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Approche élémentaire de l'étude des fonctions arithmétiques, by J. M. de Koninck and A. Mercier, Les Presses de L'Université Lavel, Quebec, 1982, xvii + 309 pp., $24.00. ISBN 2-7637-6947-0

The authors of this book assert that their object is to provide a book whose material can serve as a second course in number theory. It is their view that from a pedagogical viewpoint, the best way to stimulate interest in mathematics among beginners is to expose them to subjects which have an appeal to the intuition—one such subject being number theory. Number theorists can hardly quarrel with this enlightened viewpoint!

The preparation required to read this book is the content of a standard course in elementary number theory. Topics included in the book are: elementary results on the distribution of primes, the elementary proof of the prime number theorem, Dirichlet's theorem on primes in an arithmetic progression, arithmetic functions and the associated Dirichlet series, order of magnitude of arithmetic functions, asymptotics of additive and multiplicative number theoretic functions, asymptotics of sums of arithmetic functions over subsets of **N**, sieve methods and applications.

The authors have written a nice book with an abundance of exercises. While much of the material is standard, the specialist will find material on additive and multiplicative functions presented here for the first time in an easily accessible form.

The style is clear and the explanations easy to follow. It should be said that some of the material is of a very specialized nature and not entirely appropriate to a second semester course in number theory. Of course, this is a matter of individual taste, but the reviewer would favor topics more central to the discipline.

However, there is, fortunately, ample material in the book and a choice of excellent topics can be made for a second semester course based on these topics. The specialized material remains for those interested in delving more deeply into properties of arithmetic functions.

On the whole, the book is to be well recommended.

RAYMOND G. AYOUB