of the coefficients of a cusp form and he applies it to show that the divisor function is a reasonably good approximation to the number of representations of n by the quadratic form. Because of the restriction to $N=1$ Schoeneberg does not discuss the classical theta function, $\vartheta(\tau)=\sum_{-\infty}^{\infty}\exp(\pi i m^2\tau)$, which is of level $N=2$. $\vartheta^s(\tau)$ arises from the quadratic form $x_1^2+\cdots+x_s^2$ and thus serves as a generating function for $r_s(n)$, the number of representations of n as a sum of s squares. The author's omission of $\vartheta(\tau)$ is unfortunate in a book of this size and scope, especially since he has developed all the machinery necessary to discuss $\vartheta^s(\tau)$, at least for $s\equiv 0 \pmod 8$, in which case $\vartheta^s(\tau)$ is a modular form of level 2 and dimension $-s/2$, without multipliers.

Undoubtedly there will be some who view Schoeneberg's book as old-fashioned. Indeed, except for Chapter 8, the book could have been written in 1939, and even the 1967 article of the author, upon which Chapter 8 is based, conceivably could have been written in 1940. My own feeling is that we should be grateful for works of this quality whenever they appear. On the other hand, I regard as a flaw Schoeneberg's failure to introduce Hecke operators or the Petersson inner product. Were the book not otherwise excellent, these omissions, in themselves, would be no cause for concern. As things are, the first six chapters constitute a well-written, solid treatment of the classical theory of modular functions of a single variable, except for the omission of these two important topics. These chapters, together with appropriately chosen additional material, could serve as an excellent year-long introduction to the subject for graduate students with a reasonable background in analysis and algebra. It is a pity that additional material must be introduced for this purpose. The book is good enough that I cannot help feeling it could have been even better, and wishing it were.

The translation, by J. R. Smart and E. A. Schwandt, is generally smooth and free of awkward phrasings. Happily, it reads like English, with little, if any, trace of the original German detectable. I noticed several misprints, but a remarkably small number for a book of this length.

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Stochastic calculus and stochastic models, by E. J. McShane, Academic Press, New York, 1974, x+239 pp., $19.50.

Mesures cylindriques, espaces de Wiener, et fonctions aléatoires Gaussiennes, by Albert Badrikian and Simone Chevet, Lecture Notes in Mathematics, No. 379, Springer-Verlag, Berlin, 1974, x+383 pp., $13.20.