What kind of answers did I get to the five questions I posed at the beginning of this review? Rudin and Berberian both seem handy as references (I have used both in the last three months in my own research). Packel is not designed for this purpose at all, but is intended as a one semester course for advanced undergraduates. I could see it filling that role well if the class were good. Packel manages to pack many ideas into a small space by relegating the "general cases" of some theorems to the comment section at the end of each chapter and omitting others entirely. I fully support this procedure for the purpose intended. I believe that many mathematicians working in other fields could profitably "read through" Packel and get some useful insight into the methods and results of functional analysis.

Generally speaking the proofs are clear in each of the books. Packel makes his proofs clear for bright undergraduates, Rudin's are clear only for those who are trained to the Rudin style. His style is to leave items for the reader to fill in without saying he is doing so. The missing steps are no problem to someone who knows the subject well and is just looking around for the best way to prove a particular result. Rudin usually has the best way, and he often gets a bit more generality in the bargain. I would not recommend this Rudin book for self-study, but I plan to use parts of it in a graduate course next year. It is packed so full of nice theorems that anyone teaching a graduate analysis course can find something to use.

Berberian's style is informal; the text is laced with comments and historical notes (I prefer this to the "appendix for notes" system used by Rudin). His proofs are detailed enough for his audience. He is the best of the three when it comes to explaining what he is doing and where he is going. Packel is a close second while Rudin usually proceeds right to the business of writing beautiful proofs. Rudin also features four chapters on distribution theory with emphasis on Fourier transforms. While all Rudin's presentations are slick, this represents a big jump in that direction compared to other treatments I have seen.

In summary, the book-lover interested in functional analysis could do well to buy all three books for his bookshelf. For a quick course try Packel. For a year course select Berberian (if you lean toward operator theory) or Rudin (if you lean toward harmonic analysis).

CHARLES A. AKEMANN

Random sets and integral geometry, by G. Matheron, Wiley, New York, 1975, xxiii+261 pp., $18.95

Geometry, according to Klein, is concerned with the action of a group G on a set S, and in particular with those properties of configurations in S which are invariant under G. Now it is a common phenomenon that, when G and S have some topological structure, there is an essentially unique measure μ on S which is invariant under G, and integral geometry is about the integration of functions f on S with respect to μ.