of weak duality, which alone can give a meaning to the notion of weak topology, is not touched at all. There are other topics which one misses in chapters 5 and 6, where they would have been in their proper setting, such as the discussion of finite-dimensional topological vector spaces, or of locally compact vector spaces. On the whole, in the reviewer's opinion, the book suffers from a lack of balance, due to the overemphasis laid on chapter 7, at the expense of more relevant matters. However, the author has done a very valuable service to mathematicians in bringing together in book form a large number of results which up to now were scattered in periodicals, and not always very explicitly. His style moreover deserves high praise for its remarkable clarity and thoroughness, so that the book genuinely vindicates its claim of being self-contained, although of course the motivation for the whole theory can only be understood with a considerable background of functional analysis.

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Rekursive Funktionen. By R. Péter. Budapest, Akademischer Verlag, 1951. 206 pp.

Although recursions have been used since Archimedes, and have played a part in foundational investigations by Dedekind (1888), Peano (1891), and Skolem (1923), the theory of recursive functions consists largely of two recent developments, which we call here the "special theory" and the "general theory."

The stimulus to the special theory came from Hilbert's lecture *Über das Unendliche* (published 1926) in which he proposed to attack the continuum problem of set theory by showing that there is no inconsistency in supposing that the number-theoretic functions are all definable by use of forms of recursion associated with the transfinite ordinals of Cantor's second number class. (This program has not yet been carried out, though Gödel in 1938 used an analogous idea to show the consistency of the continuum hypothesis within axiomatic set theory.) For Hilbert's proposal it was necessary to show that higher forms of recursion do give new functions; and the first demonstration of the existence of a function definable by a double recursion but not by use only of simple or "primitive" recursion was given by Ackermann in 1928 in a paper entitled *Zum Hilbertschen Aufbau der reellen Zahlen.* Beginning in 1932, Rósza Péter has published a series of papers, examining the relationship of various special forms of recursion, and showing the definability of new functions by successively higher types of recursion, which establish her as the