*Integral equations and their applications to certain problems in mechan-
ics, mathematical physics and technology.* By S. G. Mikhlin. Trans-
lated from the Russian by A. H. Armstrong. New York, Perga-
mon Press, 1957. 12+338 pp. $12.50.

This is a substantial but not an exciting account of the theory of
integral equations of the regular and singular type with applications
to the physical sciences. The book is divided into two parts, the first
third giving the theory and the second two-thirds discussing the
applications.

The regular cases, which include those equations whose kernels
may be made regular by a finite number of iterations, are studied by
the classical methods of Fredholm, Hilbert and Schmidt. Various
devices for determining characteristic values are considered and some
numerical examples are given. In the last quarter of this section a
brief account is given of the type of singular integral equation which
the author needs in some of his applications. That is, this final chap-
ter on integral equations discusses those equations whose kernels are
of the Cauchy or Hilbert type with the related function theoretic
methods required to obtain solutions for these equations. This ac-
count is readable and the reader will not be annoyed with the masses
of special detail which other writers have attempted to supply on
this topic. The stage has now been set to treat boundary problems of
the Hilbert-Riemann type which arise so often in the applied fields.

An interesting assortment of problems involving integral equations
which arise in the mechanics of continuous media and which come
from such diverse equations as Laplace's, the biharmonic, the wave
and the diffusion equation (all in two dimensions) is discussed with
the machinery developed in the first part of the book. Like his com-
patriot, Muskhlishvili, Mikhlin refers to unusual problems in wave
motion which integral equations can handle and then fails to provide
the reader with some of the important details.

ALBERT E. HEINS

Elements of the theory of functions and functional analysis, Vol. 1,
Metric and Normed Spaces. By A. N. Kolmogorov and S. V.
Fomin. A translation by L. Boron of *Elementy Teorii Funkciĭ i
Funkcional'nogo Analiza.,* I. *Metričeskie i Normirovannye Pros-
transtva.* Rochester, Graylock Press, 1957. 9+129 pp. $3.95.

This little book, the first in a projected series by the same authors,
is a textbook prepared from material presented at the Moscow State
University and could serve as a text for, or as a welcome adjunct to,