

Rudin, Walter

Real and complex analysis. 3rd ed. (English) Zbl 0925.00005

New York, NY: McGraw-Hill. xiv, 416 p. (1987).

For the reviews of the first two editions (1966, 1974) see [Zbl 0142.01701](#) and [Zbl 0278.26001](#).

According to the preface: This third edition contains an entirely new chapter on differentiation. The basic facts about differentiation are now derived from the existence of the Lebesgue points which in turn is an easy consequence of the so-called weak type inequality that is satisfied by the maximal functions of measures on Euclidean spaces. This approach yields strong theorems with minimal effort. Even more important is that it familiarizes students with maximal functions, since these have become increasingly useful in several areas of analysis.

Also large parts of Chapters 11 and 17 were rewritten and simplified. Several smaller changes have been made in order to improve certain details.

MSC:

[00A05](#) Mathematics in general

[26-01](#) Introductory exposition (textbooks, tutorial papers, etc.) pertaining to real functions

[30-01](#) Introductory exposition (textbooks, tutorial papers, etc.) pertaining to functions of a complex variable

[46-01](#) Introductory exposition (textbooks, tutorial papers, etc.) pertaining to functional analysis

Cited in **9** Reviews
Cited in **1851** Documents

Keywords:

[abstract integration](#); [Lebesgue integration](#); [differentiation](#); [Banach spaces](#); [Hilbert spaces](#); [Fourier transforms](#); [holomorphic functions](#); [Banach algebras](#); [conformal mappings](#); [Hausdorff's maximality theorem](#); [selected problems](#)