



# Generalized Functions: Volume 1: Properties and Operations (Hardback)

By I. M. Gelfand, G. E. Shilov

American Mathematical Society, United States, 2016. Hardback. Book Condition: New. 254 x 178 mm. Language: English . Brand New Book. The first systematic theory of generalized functions (also known as distributions) was created in the early 1950s, although some aspects were developed much earlier, most notably in the definition of the Green s function in mathematics and in the work of Paul Dirac on quantum electrodynamics in physics. The six-volume collection, Generalized Functions, written by I. M. Gelfand and co-authors and published in Russian between 1958 and 1966, gives an introduction to generalized functions and presents various applications to analysis, PDE, stochastic processes, and representation theory. Volume 1 is devoted to basics of the theory of generalized functions. The first chapter contains main definitions and most important properties of generalized functions as functional on the space of smooth functions with compact support. The second chapter talks about the Fourier transform of generalized functions. In Chapter 3, definitions and properties of some important classes of generalized functions are discussed; in particular, generalized functions supported on submanifolds of lower dimension, generalized functions associated with quadratic forms, and homogeneous generalized functions are studied in detail. Many simple basic examples make this book an...



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