1. Record Nr. UNINA9911016071803321

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Titolo	Lectures on Real-valued Functions / / by Alexander Kharazishvili
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2025
ISBN	3-031-95369-X
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (697 pages)
Disciplina	510
Soggetti	Mathematics Functions of real variables Real Functions Funcions de variables reals Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1. Unary and Binary Relations -- Chapter 2. Partial Functions and Functions -- Chapter 3. Elementary Facts on Cardinal Numbers -- Chapter 4. Some Properties of the Continuum -- Chapter 5. The Oscillation of a Real-valued Function at a Point -- Chapter 6. Points of Continuity and Discontinuity of Real-valued Functions -- Chapter 7. Real-valued Monotone Functions -- Chapter 8. Real-valued Convex Functions -- Chapter 9. Semicontinuity of a Real-valued Function at a Point -- Chapter 10. Semicontinuous Real-valued Functions on Quasi-compact Spaces -- Chapter 11. The Banach–Steinhaus Theorem -- Chapter 12. A Characterization of Oscillation Functions -- Chapter 13. Semicontinuity versus Continuity -- Chapter 14. The Outer Measures -- Chapter 15. Finitely Additive and Countably Additive Measures -- Chapter 16. Extensions of Measures -- Chapter 17. Caratheodory’s and Marczewski’s Extension Theorems -- Chapter 18. Positive Linear Functionals -- Chapter 19. The Nonexistence of Universal Countably Additive Measures -- Chapter 20. Radon Measures -- Chapter 21. Invariant and Quasi-invariant Measures -- Chapter 22. Pointwise Limits of Finite Sums of Periodic Functions -- Chapter 23. Absolutely Nonmeasurable Setsin Commutative Groups -- Chapter 24. Radon Spaces -- Chapter 25. Nonmeasurable Sets with respect to Radon

Measures -- Chapter 26. The Radon–Nikodym Theorem -- Chapter 27. Decompositions of Linear Functionals -- Chapter 28. Linear Continuous Functionals and Radon Measures -- Chapter 29. Linear Continuous Functionalson a Real Hilbert Space -- Chapter 30. Baire Property in Topological Spaces -- Chapter 31. The Stone–Weierstrass Theorem -- Chapter 32. More on the Function Space C(X) -- Chapter 33. Uniformization of Plane Sets by Relatively Measurable Functions.

Sommario/riassunto

This book offers several topics of mathematical analysis which are closely connected with significant properties of real-valued functions of various types (such as semi-continuous functions, monotone functions, convex functions, measurable functions, additive and linear functionals, etc.). Alongside with fairly traditional themes of real analysis and classical measure theory, more profound questions are thoroughly discussed in the book – appropriate extensions and restrictions of functions, oscillation functions and their characterization, discontinuous functions on resolvable topological spaces, pointwise limits of finite sums of periodic functions, some general results on invariant and quasi-invariant measures, the structure of non-measurable sets and functions, the Baire property of functions on topological spaces and its connections with measurability properties of functions, logical and set-theoretical aspects of the behavior of real-valued functions. .