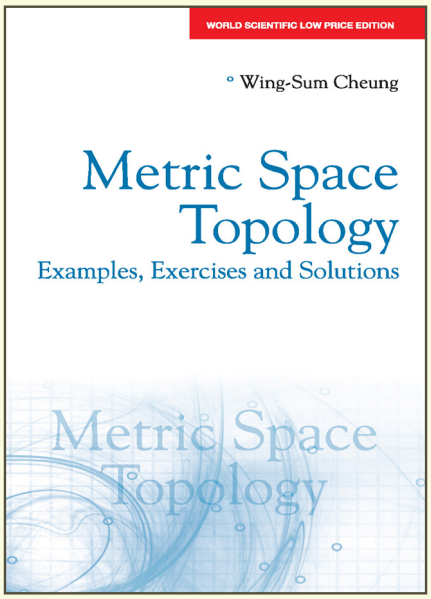
Metric Space Topology

Examples, Exercises and Solutions



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ABOUT THE BOOK

This introductory book contains a rich collection of exercises and worked examples in Metric Spaces. Other than questions in the traditional setting, plenty of True-or-False type questions and open-ended questions are included. With detailed solutions, these are highly effective in helping students gain a bird's eye view and master the subject and pitfalls better. The presentation is clear in nurturing the mathematical insights and mathematical maturity of the readers.

In this book, the pictorialization or visualization of abstract situations into simple pictures is very often crucially conducive to the understanding of the materials. This serves to give an insightful view of the intricate problems, as well as a clue or a direction to formulate rigorous arguments.

The learning outcomes include:

- Demonstrate knowledge and understanding of the basic features of mathematical analysis and point set topology (e.g., able to identify objects that are topologically equivalent);
- Apply knowledge and skills acquired in mathematical analysis to analyze and handle novel situations in a critical way (e.g., able to determine whether a specific function is uniformly continuous);
- Think creatively and laterally to generate innovative examples and solutions to non-standard problems (e.g., able to construct counterexamples to inaccurate mathematical statements).
- Acquire sufficient background for further studies in Functional Analysis, Real Analysis, Differential Geometry, Complex Analysis, Algebraic Geometry, Probability Theory, Mathematical Physics, Economics, and others.

READERSHIP

Advanced undergraduate students and fresh graduate students in mathematics, physics, engineering, economics and finance. Suitable for an introductory course in Topology and Mathematical Analysis.

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