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Nota di contenuto	Topology: Point-Set and Geometric; CONTENTS; Foreword; Acknowledgments; 1 Introduction: Intuitive Topology; 1.1 Introduction: Intuitive Topology; 2 Background on Sets and Functions; 2.1 Sets; 2.2 Functions; 2.3 Equivalence Relations; 2.4 Induction; 2.5 Cardinal Numbers; 2.6 Groups; 3 Topological Spaces; 3.1 Introduction; 3.2 Definitions and Examples; 3.3 Basics on Open and Closed Sets; 3.4 The Subspace Topology; 3.5 Continuous Functions; 4 More on Open and Closed Sets and Continuous Functions; 4.1 Introduction; 4.2 Basis for a Topology; 4.3 Limit Points; 4.4 Interior, Boundary and Closure 4.5 More on Continuity5 New Spaces from Old; 5.1 Introduction; 5.2 Product Spaces; 5.3 Infinite Product Spaces (Optional); 5.4 Quotient Spaces; 5.5 Unions and Wedges; 6 Connected Spaces; 6.1 Introduction; 6.2 Definition, Examples and Properties; 6.3 Connectedness in the Real Line; 6.4 Path-connectedness; 6.5 Connectedness of Unions and Finite Products; 6.6 Connectedness of Infinite Products (Optional); 7 Compact Spaces; 7.1 Introduction; 7.2 Definition, Examples and Properties; 7.3 Hausdorff Spaces and Compactness; 7.4 Compactness in the Real Line;

7.5 Compactness of Products

7.6 Finite Intersection Property (Optional)8 Separation Axioms; 8.1 Introduction; 8.2 Definition and Examples; 8.3 Regular and Normal spaces; 8.4 Separation Axioms and Compactness; 9 Metric Spaces; 9.1 Introduction; 9.2 Definition and Examples; 9.3 Properties of Metric Spaces; 9.4 Basics on Sequences; 10 The Classification of Surfaces; 10.1 Introduction; 10.2 Surfaces and Higher-Dimensional Manifolds; 10.3 Connected Sums of Surfaces; 10.4 The Classification Theorem; 10.5 Triangulations of Surfaces; 10.6 Proof of the Classification Theorem; 10.7 Euler Characteristics and Uniqueness
11 Fundamental Groups and Covering Spaces11.1 Introduction; 11.2 Homotopy of Functions and Paths; 11.3 An Operation on Paths; 11.4 The Fundamental Group; 11.5 Covering Spaces; 11.6 Fundamental Group of the Circle and Related Spaces; 11.7 The Fundamental Groups of Surfaces; References; Index

Sommario/riassunto

The essentials of point-set topology, complete with motivation and numerous examples Topology: Point-Set and Geometric presents an introduction to topology that begins with the axiomatic definition of a topology on a set, rather than starting with metric spaces or the topology of subsets of Rn. This approach includes many more examples, allowing students to develop more sophisticated intuition and enabling them to learn how to write precise proofs in a brand-new context, which is an invaluable experience for math majors. Along with the standard point-set topology topics-connected and pa