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Titolo	Introduction to Incompleteness : From Gödel's Theorems to Forcing and the Continuum Hypothesis / / by Serafim Batzoglou
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Nota di contenuto	Part 1: Godel's Theorems -- Formal Axiomatic Systems -- Peano Arithmetic and Recursive Functions -- Godel's Incompleteness Theorems -- Structures, Models, and Satisfaction -- Completeness and Compactness Theorems -- Completeness and Peano Arithmetic -- The Lucas-Penrose Arguments -- Part II: Incompleteness in arithmetic and set theory -- Incompleteness in Finite Combinatorics -- Consistency of PA and E0 Induction -- Set Theory -- Independence of CH--forcing -- Independence of CH--forcing CH and -CH.
Sommario/riassunto	Incompleteness is a fascinating phenomenon at the intersection of mathematical foundations, computer science, and epistemology that places a limit on what is provable. However, despite its importance, it is often overlooked in the mathematics curricula because it is difficult to teach. This book aims to help bridge this pedagogical gap by providing a complete and accessible technical exposition of incompleteness for a wide audience. The author accomplishes this by making conceptually difficult proofs more approachable by providing intuitive explanations of the main ideas. Care is taken to emphasize the different layers of the mathematical argument – the layer within and the metalayer about an axiomatic system. Structurally, the book efficiently examines key results and arrives at some of the most interesting concepts as quickly

as possible. It begins with Gödel's incompleteness theorems before continuing on to challenging concepts in the arithmetized completeness theorem, the Paris-Harrington theorem, and the independence of the continuum hypothesis. Other topics covered include the Lucas-Penrose arguments, ordinals and cardinals, and axiomatic set theory. Additionally, the author’s coverage of forcing is a notable addition to the existing literature. Introduction to Incompleteness will be of interest to researchers, students, and instructors looking for a resource to teach this topic. It may also be suitable for self-study. Knowledge of undergraduate-level theoretical mathematics or computer science is required, as well as a familiarity with abstract proofs.