

1. Record Nr.	UNINA9910349319103321
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Titolo	A Model–Theoretic Approach to Proof Theory // by Henryk Kotlarski ; edited by Zofia Adamowicz, Teresa Bigorajska, Konrad Zdanowski
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-030-28921-4
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (XVIII, 109 p. 53 illus., 1 illus. in color.)
Collana	Trends in Logic, Studia Logica Library, , 1572-6126 ; ; 51
Disciplina	160
Soggetti	Logic Mathematical logic Mathematical Logic and Foundations
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1. Some combinatorics -- Chapter 2. Some model theory -- Chapter 3. Incompleteness -- Chapter 4. Transfinite induction -- Chapter 5. Satisfaction classes.
Sommario/riassunto	This book presents a detailed treatment of ordinal combinatorics of large sets tailored for independence results. It uses model theoretic and combinatorial methods to obtain results in proof theory, such as incompleteness theorems or a description of the provably total functions of a theory. In the first chapter, the authors first discuss ordinal combinatorics of finite sets in the style of Ketonen and Solovay. This provides a background for an analysis of subsystems of Peano Arithmetic as well as for combinatorial independence results. Next, the volume examines a variety of proofs of Gödel's incompleteness theorems. The presented proofs differ strongly in nature. They show various aspects of incompleteness phenomena. In addition, coverage introduces some classical methods like the arithmetized completeness theorem, satisfaction predicates or partial satisfaction classes. It also applies them in many contexts. The fourth chapter defines the method of indicators for obtaining independence results. It shows what amount of transfinite induction we have in fragments of Peano arithmetic. Then, it uses combinatorics of large sets of the first chapter to show independence results. The last chapter considers nonstandard

satisfaction classes. It presents some of the classical theorems related to them. In particular, it covers the results by S. Smith on definability in the language with a satisfaction class and on models without a satisfaction class. Overall, the book's content lies on the border between combinatorics, proof theory, and model theory of arithmetic. It offers readers a distinctive approach towards independence results by model-theoretic methods.
