Record Nr. UNINA9910484565503321 Autore Pollard Stephen Titolo A Mathematical Prelude to the Philosophy of Mathematics / / by Stephen Pollard Cham:,: Springer International Publishing:,: Imprint: Springer,, Pubbl/distr/stampa 2014 **ISBN** 3-319-05816-9 Edizione [1st ed. 2014.] 1 online resource (XI, 202 p.) Descrizione fisica 510.1 Disciplina Philosophy and science Soggetti Mathematical logic Philosophy of Science Mathematical Logic and Foundations Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Bibliographic Level Mode of Issuance: Monograph Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Preface -- Chapter 1: Recursion, Induction -- Chapter 2: Peano Arithmetic, Incompleteness -- Chapter 3: Hereditarily Finite Lists --Chapter 4: Zermelian Lists -- Chapter 5: The Hierarchy of Sets. Chapter 6: Frege Arithmetic -- Chapter 7: Intuitionist Logic -- Chapter 8. Solutions of Odd-Numbered Exercises -- Index. Sommario/riassunto This book is based on two premises: one cannot understand philosophy of mathematics without understanding mathematics and one cannot understand mathematics without doing mathematics. It draws readers into philosophy of mathematics by having them do mathematics. It offers 298 exercises, covering philosophically important material, presented in a philosophically informed way. The exercises give readers opportunities to recreate some mathematics that will illuminate important readings in philosophy of mathematics. Topics include primitive recursive arithmetic, Peano arithmetic, Gödel's theorems,

in formal logic.

interpretability, the hierarchy of sets, Frege arithmetic, and intuitionist sentential logic. The book is intended for readers who understand basic properties of the natural and real numbers and have some background