Record Nr. UNINA9910822590103321 **Titolo** Groups, languages, algorithms: AMS-ASL Joint Special Session on Interactions between Logic, Group Theory, and Computer Science. January 16-19, 2003, Baltimore, Maryland / / Alexandre V. Borovik, Pubbl/distr/stampa Providence, Rhode Island:,: American Mathematical Society,, [2005] ©2005 **ISBN** 0-8218-7968-5 0-8218-3618-8 Descrizione fisica 1 online resource (360 p.) Collana Contemporary mathematics, , 0271-4132;; 378 Disciplina 512/.2 Soggetti Group theory Finite groups Infinite groups Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references. ""Contents""; ""Preface""; ""Formal languages and their application to Nota di contenuto combinatorial group theory""; ""1. Introduction""; ""2. Notation and definitions""; ""3. Regular languages""; ""4. Rational sets""; ""5. Context free languages""; ""7. Other language classes""; ""References""; ""Regular free length functions on Lyndon's free Z[t]-group FZ[t]""; ""1. Introduction""; ""2. Preliminaries""; ""3. A-words""; ""4. A free Lyndon length function on CDR(A, X)""; ""5. Lyndon's Exponentiation""; ""6. Extensions of centralizers""; ""7. Embedding of Fz[t] into CDR(Z[t], X)"" ""8. Algorithmic problems for FZ[t]"""References""; ""A-free groups and tree-free groups""; ""Effective JSJ decompositions"; ""Introduction""; ""1. Preliminaries""; ""2. Splittings""; ""3. Algorithms over fully residually free groups""; ""4. Generalized equations over free groups""; ""5. Elimination process: construction of T(a??)""; ""6. Elimination process: periodic structures""; ""7. Elimination process: splittings of coordinate groups""; ""8. Structure of solutions, the solution tree Tsol(a??, A)""; ""9. Maximal standard quotients and canonical embeddings of F-groups"" ""10. Effective free decompositions"""11. Homomorphisms of finitely

generated groups into fully residually free groups""; ""12. Free Lyndon length functions on NTQ groups."": ""13. Effective construction of JSJ decompositions of groups from F.""; ""14. Homomorphisms into NTQ groups""; ""15. Some applications to equations in F-groups""; ""References""; ""Algebraic geometry over free groups: Lifting solutions into generic points""; ""Introduction""; ""1. Scheme of the proof""; ""2. Elementary properties of liftings""; ""3. Cut equations"" ""4. Basic automorphisms of orientable quadratic equations"""5. Generic solutions of orientable quadratic equations""; ""6. Small cancellation solutions of standard orientable equations""; ""7. Implicit function theorem for quadratic equations""; ""8. Implicit function theorem for NTQ systems""; ""9. Groups that are elementary equivalent to a free group""; ""References""; ""Divisibility theory and complexity of algorithms for free partially commutative groups""; ""1. Introduction""; ""2. Free partially commutative groups""; ""3. Divisibility Theory"" ""4. Normal forms arising from H N N extensions"""5. Conjugacy problem""; ""6. Complexity of algorithms: some estimates""; ""References""