

Contents

Preface	vii
On the application of computational group theory to the theory of groups ROBERT FITZGERALD MORSE	1
A classification of certain maximal subgroups of alternating groups BRET BENESH	21
On the nonabelian tensor squares of free nilpotent groups of finite rank RUSSELL D. BLYTH, PRIMOŽ MORAVEC, and ROBERT FITZGERALD MORSE	27
Investigating p -groups by coclass with GAP HEIKO DIETRICH, BETTINA EICK, and DÖRTE FEICHTENSCHLAGER	45
Homological algebra programming GRAHAM ELLIS	63
Groups with a finite covering by isomorphic abelian subgroups TUVAL S. FOGUEL and MATTHEW F. RAGLAND	75
On some subnormality conditions in metabelian groups DAVID GARRISON and LUISE-CHARLOTTE KAPPE	89
Normalizer calculation using automorphisms ALEXANDER HULPKE	105
Group Theory in SAGE DAVID JOYNER and DAVID KOHEL	115
Simultaneous constructions of the sporadic groups Co_2 and Fi_{22} HYUN KYU KIM and GERHARD O. MICHLER	141
Constructing simple groups from irreducible subgroups of $\text{GL}_n(2)$ GERHARD O. MICHLER	235
Dickson polynomials and the norm map between the Hecke algebras of Gelfand-Graev representations JULIANNE G. RAINBOLT	263
On orbit equivalent, two-step imprimitive permutation groups ÁKOS SERESS and KEYAN YANG	271