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Finding intersections and normalizers in finitely generated nilpotent groups. (English)
Zbl 0930.20038

Practical algorithms to compute intersections and normalizers of subgroups in finitely generated nilpotent groups from nilpotent presentations are developed. These ideas are extended to give practical algorithms to determine membership in products of subgroups and to determine conjugacy of subgroups. A test for nilpotency is also described for polycyclic groups. A prototype Mathematica program has been written to test the efficiency of some of the algorithms described here. The results are tabulated in the last section.

MSC:

20F18	Nilpotent groups
20-04	Software, source code, etc. for problems pertaining to group theory
20F05	Generators, relations, and presentations of groups
20E07	Subgroup theorems; subgroup growth
68W30	Symbolic computation and algebraic computation

Cited in **1** Review
Cited in **5** Documents

Keywords:

intersections of subgroups; normalizers; finitely generated nilpotent groups; nilpotent presentations; products of subgroups; conjugacy of subgroups; polycyclic groups; efficiency; algorithms

Software:

Mathematica

Full Text: DOI