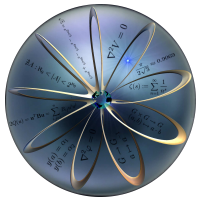

planetmath.org

Math for the people, by the people.

virtually abelian group

Canonical name	VirtuallyAbelianGroup
Date of creation	2013-03-22 14:35:58
Last modified on	2013-03-22 14:35:58
Owner	yark (2760)
Last modified by	yark (2760)
Numerical id	11
Author	yark (2760)
Entry type	Definition
Classification	msc 20F99
Classification	msc 20E99
Synonym	abelian-by-finite group
Synonym	virtually-abelian group
Related topic	VirtuallyCyclicGroup
Defines	virtually abelian
Defines	abelian-by-finite
Defines	virtually nilpotent
Defines	virtually solvable
Defines	virtually polycyclic
Defines	virtually free
Defines	nilpotent-by-finite
Defines	polycyclic-by-finite
Defines	virtually nilpotent group
Defines	virtually solvable group
Defines	virtually polycyclic group
Defines	virtually free

A group G is *virtually abelian* (or *abelian-by-finite*) if it has an abelian http://planetmath.org/Subgroupsubgroup of finite http://planetmath.org/Cosetindex.

More generally, let χ be a property of groups. A group G is *virtually* χ if it has a subgroup of finite index with the property χ. A group G is χ-*by-finite* if it has a normal subgroup of finite index with the property χ. Note that every χ-by-finite group is virtually χ, and the converse also holds if the property χ is inherited by subgroups.

These notions are obviously only of relevance to infinite groups, as all finite groups are virtually trivial (and trivial-by-finite).