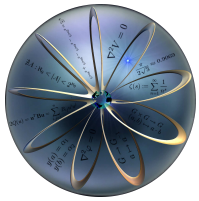

planetmath.org

Math for the people, by the people.

Wielandt-Kegel theorem

Canonical name	WielandtKegelTheorem
Date of creation	2013-03-22 16:17:37
Last modified on	2013-03-22 16:17:37
Owner	yark (2760)
Last modified by	yark (2760)
Numerical id	11
Author	yark (2760)
Entry type	Theorem
Classification	msc 20D10
Synonym	Kegel-Wielandt theorem

Theorem. *If a finite group is the product of two nilpotent subgroups, then it is solvable.*

That is, if H and K are nilpotent subgroups of a finite group G, and $G = HK$, then G is solvable.

This result can be considered as a generalization of `http://planetmath.org/BurnsidePQTheor` p-q Theorem, because if a group G is of order $p^m q^n$, where p and q are distinct primes, then G is the product of a `http://planetmath.org/SylowPSubgroup`Sylow p-subgroup and Sylow q-subgroup, both of which are nilpotent.