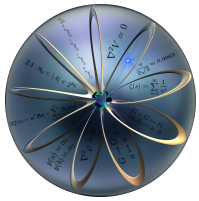

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Jordan-Hölder decomposition theorem

Canonical name	JordanHolderDecompositionTheorem
Date of creation	2013-03-22 12:08:44
Last modified on	2013-03-22 12:08:44
Owner	djao (24)
Last modified by	djao (24)
Numerical id	9
Author	djao (24)
Entry type	Theorem
Classification	msc 20E32
Related topic	SubnormalSeries
Defines	Jordan-Hölder decomposition

Every finite group G has a filtration

$$G \supset G_0 \supset \cdots \supset G_n = \{1\},$$

where each G_{i+1} is normal in G_i and each quotient group G_i/G_{i+1} is a simple group. Any two such decompositions of G have the same multiset of simple groups G_i/G_{i+1} up to ordering.

A filtration of G satisfying the properties above is called a *Jordan–Hölder decomposition* of G.