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# classification of semisimple groups

Canonical name	ClassificationOfSemisimpleGroups
Date of creation	2013-03-22 13:17:10
Last modified on	2013-03-22 13:17:10
Owner	bwebste (988)
Last modified by	bwebste (988)
Numerical id	4
Author	bwebste (988)
Entry type	Definition
Classification	msc 20D05

For every semisimple group  $G$  there is a normal subgroup  $H$  of  $G$ , (called the centerless completely reducible radical) which is isomorphic to a direct product of nonabelian simple groups such that conjugation on  $H$  gives an injection into  $\text{Aut}(H)$ . Thus  $G$  is isomorphic to a subgroup of  $\text{Aut}(H)$  containing the inner automorphisms, and for every group  $H$  isomorphic to a direct product of non-abelian simple groups, every such subgroup is semisimple.