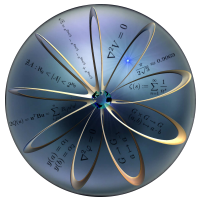

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Order Conjecture for non-commuting graph of a group

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The following was conjectured by A. Abdollahi, S. Akbari and H. R. Maimani in (Non-commuting graph of a group, Journal of Algebra, 298 (2006) 468-492.)

Order Conjecture. If G and H are two non-abelian finite groups with isomorphic non-commuting graphs, then $|G| = |H|$.

It was proved that Order Conjecture is true if and only if it is true for all non-abelian solvable finite AC-groups. By an AC-group, we mean a group in which the centralizer of every non-central element is abelian.

The order Conjecture has been refuted in the following paper

[*] A. R. Moghaddamfar, On non-commutating graphs, Siberian Math. J. **47** (2006), no. 5, 911-914.

It is mentioned in [*] that the example given in the article is due to M. Isaacs.