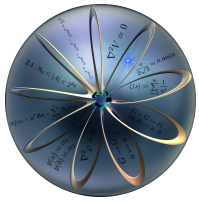

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abelianization

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The *abelianization* of a group G is $G/[G,G]$, the `http://planetmath.org/QuotientGroup`quoti of G by its derived subgroup.

The abelianization of G is the largest abelian quotient of G, in the sense that if N is a normal subgroup of G then G/N is abelian if and only if $[G,G] \subseteq N$. In particular, every abelian quotient of G is a homomorphic image of $G/[G,G]$.

If A is an abelian group and $\phi\colon G \to A$ is a `http://planetmath.org/GroupHomomorphism`homo then there is a unique homomorphism $\psi\colon G/[G,G] \to A$ such that $\psi \circ \pi = \phi$, where $\pi\colon G \to G/[G,G]$ is the canonical projection.