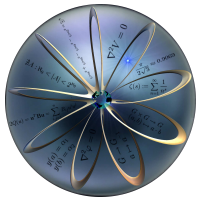

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anti-isomorphism

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Defines	anti-endomorphism
Defines	anti-homomorphism
Defines	anti-isomorphic
Defines	anti-automorphism

Let R and S be rings and $f : R \longrightarrow S$ be a function such that $f(r_1 r_2) = f(r_2)f(r_1)$ for all $r_1, r_2 \in R$.

If f is a homomorphism of the additive groups of R and S, then f is called an *anti-homomorphsim*.

If f is a bijection and anti-homomorphism, then f is called an *anti-isomorphism*.

If f is an anti-homomorphism and $R = S$ then f is called an *anti-endomorphism*.

If f is an anti-isomorphism and $R = S$ then f is called an *anti-automorphism*.

As an example, when $m \neq n$, the mapping that sends a matrix to its transpose (or to its conjugate transpose if the matrix is complex) is an anti-isomorphism of $M_{m,n} \to M_{n,m}$.

R and S are *anti-isomorphic* if there is an anti-isomorphism $R \to S$.

All of the things defined in this entry are also defined for groups.