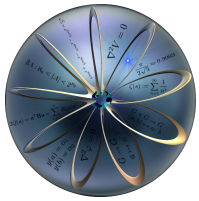

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identity element

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Related topic	Group

Let G be a groupoid, that is a set with a binary operation $G \times G \to G$, written muliplicatively so that $(x, y) \mapsto xy$.

An *identity element* for G is an element e such that $ge = eg = g$ for all $g \in G$.

The symbol e is most commonly used for identity elements. Another common symbol for an identity element is 1, particularly in semigroup theory (and ring theory, considering the multiplicative structure as a semigroup).

Groups, monoids, and loops are classes of groupoids that, by definition, always have an identity element.