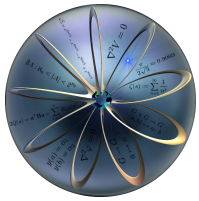

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regular representation

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Given a group G, the *regular representation* of G over a field K is the representation $\rho : G \longrightarrow \mathrm{GL}(K^G)$ whose underlying vector space K^G is the K–vector space of formal linear combinations of elements of G, defined by

$$\rho(g)\left(\sum_{i=1}^{n} k_i g_i\right) := \sum_{i=1}^{n} k_i (g g_i)$$

for $k_i \in K$, $g, g_i \in G$.

Equivalently, the regular representation is the induced representation on G of the trivial representation on the subgroup $\{1\}$ of G.