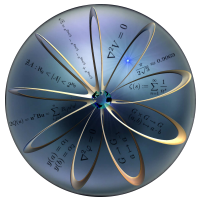

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G-module

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Related topic	Group

Let V a vector space over some field K (usually $K = \mathbb{Q}$ or $K = \mathbb{C}$). Let G be a group which acts on V. This means that there is an operation $\psi: G \times V \to V$ such that

1. $gv \in V$.
2. $g(hv) = (gh)v$
3. $ev = v$

where gv stands for $\psi(g, v)$ and e is the identity element of G.

If in addition,

$$g(cv + dw) = c(gv) + d(gw)$$

for any $g \in G$, $v, w \in V$, $c, d \in K$, we say that V is a G-module. This is equivalent with the existence of a group representation from G to $GL(V)$.