

Why

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Definition

The scalar multiple of a subset of a vector space by a given scalar is the set of all vectors which are the scalar product of the given scalar and the vector.

The *symmetric reflection* of a subset of a vector space is the scalar multiple by the additive inverse of the field. A subset of a vector space is *symmetric* if it is its own symmetric reflection.

Notation

Let (V, \mathbf{F}) be a vector space. Let $M \subset V$ and $\lambda \in \mathbf{F}$. The scalar multiple of M by λ is the set

$$\{\lambda x \mid x \in M\},\$$

which we denote by λM .

The symmetric refletion of M is (-1)M which we denote by -M. M is symmetric if M = -M.

¹Future editions will include.

