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0.1 Vector spaces

A vector space is a group with additional structure.

The operation for each element is shown as addition. So we can say:

$$\forall u, v \in V [u + v \in V]$$

To this we add scalars, from a field F . We write this as multiplication.

$$\forall f \in F \forall v \in V [fv \in V]$$

0.1.1 Subspace

A subspace is a subset of V which still acts as a vector space. In practice, this means fewer dimensions.