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.