



Definition

The *span* of a finite set of vectors $v_1, \dots, v_k \in \mathbf{R}^n$ is the set of all linear combinations of the vectors v_1, \dots, v_k .

More generally, given a set $A \subset \mathbf{R}^n$ the span of A is the set of all linear combinations formed from finite subsets of A . This is sometimes also called the *linear hull* of A .

The span of a set of vectors is a subspace.

Notation

We denote the span of $v_1, \dots, v_k \in \mathbf{R}^d$ by

$$\text{span}(\{v_1, \dots, v_k\})$$

Other notation in use, in particular when we are dealing with the span of a set $A \subset \mathbf{R}^d$ is $\text{lin } A$.

