



Why

We generalize convex sets to arbitrary vector spaces.

Definition

Suppose X is a vector space over \mathbf{R} . A set $C \subset X$ is *convex* if it contains the closed line segment between every pair of distinct points. In other words,

$$\lambda x + (1 - \lambda)y \in C \quad \text{for all } x, y \in C \text{ and } \lambda \in [0, 1].$$

