1. Norms. Minkovski's theorem. Euclidian space

Definition: (Norm)

Let V be a vector space $\in \mathbb{R}^n$ or $\mathbb{C}^n$. Then function $\nu : V \to \mathbb{R}$ is a norm if:

1. $\nu(\vec{x}) > 0 \; \forall \vec{x} \neq 0$;

2. $\nu(\alpha\vec{x}) = |\alpha|\nu(\vec{x})$;

3. $\nu(\vec{x} + \vec{y}) \leq \nu(\vec{x}) + \nu(\vec{y})$.

Theorem