References

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1 Normed Vector Space

It is a vector space over the real or complex numbers,
on which a norm is defined.
A norm on a vector space X is a real-valued function on X whose value at an $x \in X$ is denoted by $\|x\|$ and
which has the properties:

1. $\|x\| \geq 0$
2. $\|x\| = 0 \Longleftrightarrow x = 0$
3. $\|\alpha x\| = |\alpha| \|x\|$
4. $\|x + y\| \leq \|x\| + \|y\|$