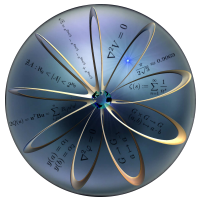

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bounded

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Let X be a subset of $\mathbb{R}$. We say that X is bounded when there exists a real number M such that $|x| < M$ for all $x \in X$. When X is an interval, we speak of a bounded interval.

This can be generalized first to $\mathbb{R}^n$. We say that $X \subseteq \mathbb{R}^n$ is bounded if there is a real number M such that $\|x\| < M$ for all $x \in X$ and $\|\cdot\|$ is the Euclidean distance between x and y.

This condition is equivalent to the statement: There is a real number T such that $\|x - y\| < T$ for all $x, y \in X$.

A further generalization to any metric space V says that $X \subseteq V$ is bounded when there is a real number M such that $d(x, y) < M$ for all $x, y \in X$, where d is the metric on V.