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Topological manifold

Definition. Topological manifold

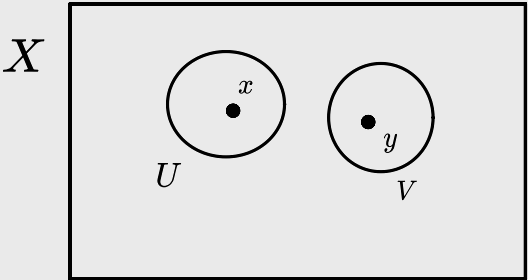
A [topological space](#) is a topological $\mathcal{C}^0$ **$\mathbb{R}$ -manifold of $\mathbb{R}$ -dimension n** for a $n \in \mathbb{Z}_{>0}$ if

- M is Hausdorff topological space

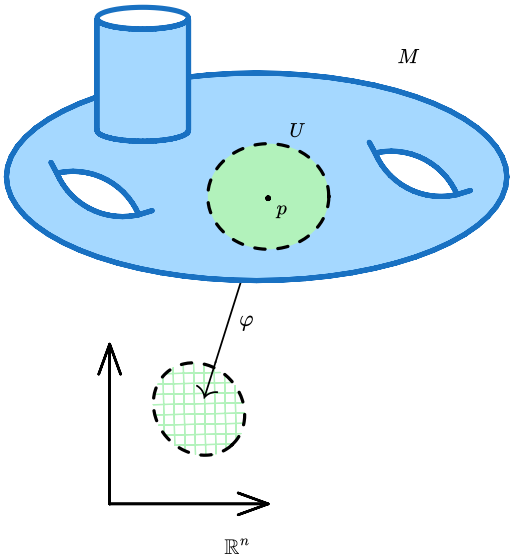
Definition. T_2 topological space or Hausdorff space

A [topological space](#) $(X, \mathfrak{T})$ is said to be T_2 **or Hausdorff** if we can "house off" every pair of points using disjoint open sets

$$\forall x, y \in X \exists U, V \in \mathfrak{T} \\ \text{st } x \in U, y \in V \\ \text{and } U \cap V = \emptyset$$



- M is [second countable](#)
- (locally homeomorphic to $(\mathbb{R}^n, \mathfrak{T}_{\text{DOT}})$) for any $p \in M$, there exists



- an open subset $U \subseteq M$ with $p \in U$
- open subset $V \subseteq \mathbb{R}^n$
- and a homeomorphism $\varphi : U \rightarrow V$

The dimension of a locally-Top $\mathbb{R}^n$ topological space is well-defined for each connected components.

Current note has 2 direct children and 2 total descendants.

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 - [R-manifold topological](#)
 - [Counting compact topological manifolds upto homeomorphism](#)
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And it has 20 siblings.

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