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Product of topological spaces

Definition. Product of topological spaces

$$\pi_X : X \times Y \rightarrow X$$

$$\cup_a (U_a \times V_a) = \cup_a U_a \times \cup_a V_a \mapsto \cup_a U_a$$

Let X be Hausdorff. Then

Complement of the diagonal in $X \times X$ projects $\{(x,y) : x \neq y\}$ to X ?

Current note has 0 direct children and 0 total descendants.

- structures based on sets
 - Topological spaces
 - Product of topological spaces

And it has 29 siblings.

- structures based on sets
 - Topological spaces
 - Group action on topological spaces
 - Discrete subgroup acting on coset space
 - Basis and subbasis for a topology.
 - Principal G -bundles over topological spaces
$$G \curvearrowright P \rightarrow X$$
 - Vector bundles over topological spaces
 - Closure of a subset of topological space
 - Locally compact and 2-countable Hausdorff topological spaces are paracompact with countable refinement
 - Covering dimension of topological spaces
 - EndTop(X, Y)
 - Eilenberg–Steenrod functors
$$(H_n : \mathbf{Top} \times \mathbf{Top} \rightarrow \mathbf{Ab}, \partial_n)$$
 - Local fields
 - Local fields of characteristic 0
 - Topological groups
 - Continuous group action on a topological space
 - Intersection of open, dense subsets of a topological space
 - Local topological spaces
 - Covering space of a topological space
 - Borel measures on a topological space
 - Convergence for nets in a topological space
 - Loops and a open cover of a topological space
 - Paths in a topological space
 - Product of topological spaces
 - Ringed topological spaces
 - Sheaf on open sets of a topological space
 - Closed subsets of a topological space
 - Discrete subsets of topological spaces
 - Types of topological spaces
 - Locally compact Hausdorff spaces
 - Topological vector spaces over $\mathbb{R}$ or $\mathbb{C}$