

Vocabulary

(No new vocabulary defined)

Examples

(1) Let (X, τ) be a topological space and $E \subseteq X$ with E connected. Show that the closure \bar{E} is connected. (PROOF GIVEN IN LECTURE)

(2) Let (X, τ) be a topological space. Let \mathcal{C} be a collection of connected subsets of X whose intersection is non-empty i.e. $\bigcap_{A \in \mathcal{C}} A \neq \emptyset$. Prove $\bigcup_{A \in \mathcal{C}} A$ is connected. (PROOF GIVEN IN LECTURE)

Homework

~~CHECK THAT IF: (For (2) above)~~

~~Let $M = \bigcup_{A \in \mathcal{C}} A$ and let $x \in \bigcap_{A \in \mathcal{C}} A$. Let $f: M \rightarrow \{0, 1\}$ be a cts function.~~

~~Then the restriction $f|_A: A \rightarrow \{0, 1\}$, $(f|_A)(x) = f(x) \forall x \in A$ is cts for all $A \in \mathcal{C}$.~~

(None)