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## Lindelöf theorem

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If a topological space  $(X, \tau)$  satisfies the second axiom of countability, and if  $A$  is any subset of  $X$ , then any open cover for  $A$  has a countable subcover.

In particular, we have that  $(X, \tau)$  is a <http://planetmath.org/lindelofspace> Lindelöf space.