

Why does Kruskal's algorithm work?

We have shown: $e = (x, y) \in E(T^*) \setminus E(T)$ and $w(e) > w(e')$ for all edges e' on the path P between x and y in T .

Consider $T^* - e$ (the graph obtained by deleting the edge e from T^*).

It has two components, A and B , with $x \in A$ and $y \in B$. Also, no edge in T^* besides e has an endpoint in A and another endpoint in B .