

$G = (V, E, w)$
 $T \in G \setminus T_+$
 $C \Rightarrow \exists e' \in C$
 $w(e') > w(e)$
 $T_+ = T_-$
 $e' \in T_+$
 $w(T') < w(T)$
 $G = (V, E)$
 $(S, V \setminus S)$
 $S, V - S \neq \emptyset$
 $\exists e \in G$
 $\exists e \in T \Rightarrow T_+ \neq T_-$
 $C \Rightarrow \exists e' \in C$
 $e' \in T_+$
 $w(e') \geq w(e)$
 $T_+ = T_-$
 $e' \in T_+$
 $w(T') \leq w(T) \Rightarrow w(T') = w(T) \Rightarrow T'$
 T' is an MST
 $G = (V, E)$
 $X \subseteq (S, V \setminus S)$
 X is *respecting*
 $X \subseteq (S, V \setminus S)$
 $X \subseteq (S, V \setminus S)$
 $X_+ \subseteq G = (V, E, w)$
 $C \Rightarrow \exists \text{ MST } T :$
 $e \notin T \Rightarrow T_+ \neq T_-$
 $e \in T_+$
 $(S, V \setminus S)$
 $\exists e' \in C$
 $w(e') \leq w(e)$
 $T_+ = T_-$
 $e' \in T_+$
 $w(T') < w(T)$