C1. If D and E are dominating sets, then $D \subseteq E$ or $E \subseteq D$.

1. It suffices to assume $D \not\subseteq E$ and $E \not\subseteq D$ and obtain a contradiction.

   PROOF: Obvious.

2. Pick $d \in D$ and $e \in E$ such that $d \notin E$ and $e \notin D$.

   PROOF: The step 1 assumption implies the existence of d and e.

3. $d \succ e$ and $e \succ d$

   PROOF: Step 2 asserts $d \in D$ and $e \notin D$, which imply $d \succ e$ because D is a dominating set. Similarly, step 2 and E a dominating set imply $e \succ d$.

4. Q.E.D.

   PROOF: Step 3 and the definition of $\succ$ (which implies that $d \succ e$ and $e \succ d$ cannot both be true) yield the required contradiction.

CLOSE