$R = \{(a,b) | aRb\}$

$\forall (a,a): aRa$

$aRb \wedge bRc \Rightarrow aRc$

$R' = \{(a,b) | bRa\}$

$aR'b \equiv bRa$

$aRa \equiv aR'a$

$aR'b \wedge bR'c \Rightarrow bRa \wedge cRb \Rightarrow cRa \equiv aR'c$

So, R' is again reflexive and transitive

Intersection of two reflexive and transitive relations is again reflexive and transitive relation.

If $(a,b) \in R \cap R'$ *then*:

$aRb \equiv bR'a \Rightarrow (b,a) \in R'$

$aR'b \equiv bRa \Rightarrow \Rightarrow (b,a) \in R$

$(a,b) \in R \cap R' \Rightarrow (b,a) \in R \cap R'$

Thus, intersection of reflexive and transitive relation and its inverse is **equivalence relation.**