

THEOREM 7: IF $B \in \overleftrightarrow{AC}$ THEN $C \in \overleftrightarrow{AB}$

Given $B \in \overleftrightarrow{AC}$, then

PART 1: $B \in \overline{AC}$ so $d(A, B) + d(B, C) = d(A, C)$

by theorem 4: $B \in \overleftrightarrow{AC}$, $A \in \overleftrightarrow{BC}$, $(C \in \overleftrightarrow{AB})$

PART 2: $C \in \overline{AB}$ so $d(A, C) + d(C, B) = d(A, B)$

by theorem 4: $(C \in \overleftrightarrow{AB})$, $A \in \overleftrightarrow{BC}$, $B \in \overleftrightarrow{AC}$

PART 3: $A \in \overline{BC}$ so $d(B, A) + d(A, C) = d(B, C)$

by theorem 4: $A \in \overleftrightarrow{BC}$, $B \in \overleftrightarrow{AC}$, $(C \in \overleftrightarrow{AB})$