

Prove C-47 Diagonals of a rhombus are perpendicular bisectors of each other

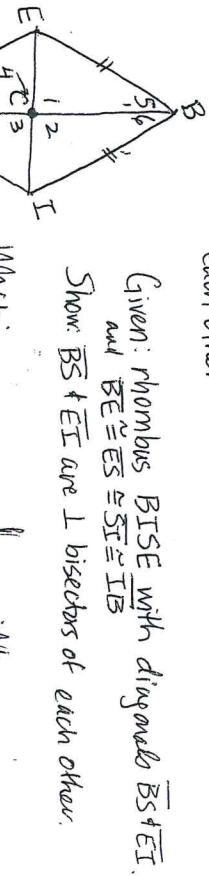
Prove C-47 Diagonals of a rhombus are perpendicular bisectors of each other

Given: rhombus  $BISE$  with diagonals  $\overline{BS}$  &  $\overline{EI}$ .  
and  $\overline{BE} \cong \overline{ES} \cong \overline{SI} \cong \overline{IB}$

Show:  $\overline{BS}$  &  $\overline{EI}$  are  $\perp$  bisectors of each other.

Given: rhombus  $BISE$  with diagonals  $\overline{BS}$  &  $\overline{EI}$ .  
and  $\overline{BE} \cong \overline{ES} \cong \overline{SI} \cong \overline{IB}$

Show:  $\overline{BS}$  &  $\overline{EI}$  are  $\perp$  bisectors of each other.



What:

Why

(1)  $\overline{BE} \cong \overline{ES} \cong \overline{SI} \cong \overline{IB}$

(1)?

(2) A rhombus is a parallelogram

(2)?

(3)  $\overline{BS} \perp \overline{EI}$  ————— each other

(3)?

(4)  $\cong$   $\cong$   $\cong$   $\cong$

(4)?

(5)  $\overline{BC} \cong \overline{BC}, \overline{SC} \cong \overline{SC}$

(5)?

(6)  $\cong \cong \cong \cong$

(6)?

(7)  $L1 \cong L2 \cong L3 \cong L4$

(7)?

(8)  $L1 + L2 = 180^\circ, L3 + L4 = 180^\circ$

(8)?

(9)  $L1 = L2 = L3 = L4 = 90^\circ$

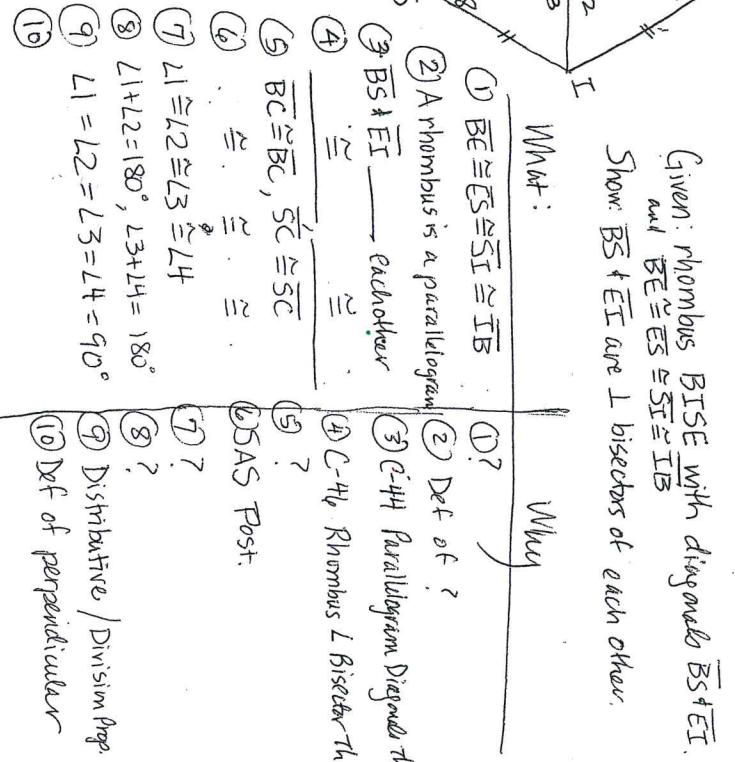
(9)?

(10) Distributive / Division Prop

(10)?

(11) Def of perpendicular

(12) Def of perpendicular



What:

Why

(1)  $\overline{BE} \cong \overline{ES} \cong \overline{SI} \cong \overline{IB}$

(1)?

(2) A rhombus is a parallelogram

(2)?

(3)  $\overline{BS} \perp \overline{EI}$  ————— each other

(3)?

(4)  $\cong \cong \cong \cong$

(4)?

(5)  $\overline{BC} \cong \overline{BC}, \overline{SC} \cong \overline{SC}$

(5)?

(6)  $\cong \cong \cong \cong$

(6)?

(7)  $L1 \cong L2 \cong L3 \cong L4$

(7)?

(8)  $L1 + L2 = 180^\circ, L3 + L4 = 180^\circ$

(8)?

(9)  $L1 = L2 = L3 = L4 = 90^\circ$

(9)?

(10) Distributive / Division Prop

(10)?

(11) Def of perpendicular

(12) Def of perpendicular