

Geometry

Unit One B: Flowchart Proofs #6 (IC11)

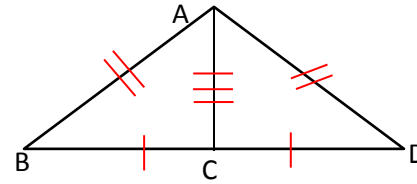
Given: C is the midpoint of  $\overline{BD}$ ;  $\overline{AB} \cong \overline{AD}$

Prove:  $\triangle ABC \cong \triangle ADC$

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Period: \_\_\_\_\_

Diagram:



C is the  
midpoint of  
 $\overline{BD}$

Given

$\overline{AB} \cong \overline{AD}$

Given

$\overline{BC} \cong \overline{DC}$

Def. of midpoint

$\overline{AC} \cong \overline{AC}$

Reflexive

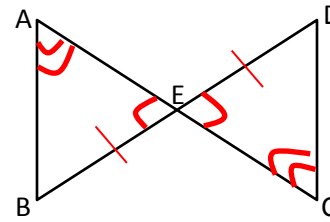
$\triangle ABC$   
 $\cong \triangle ADC$

SSS

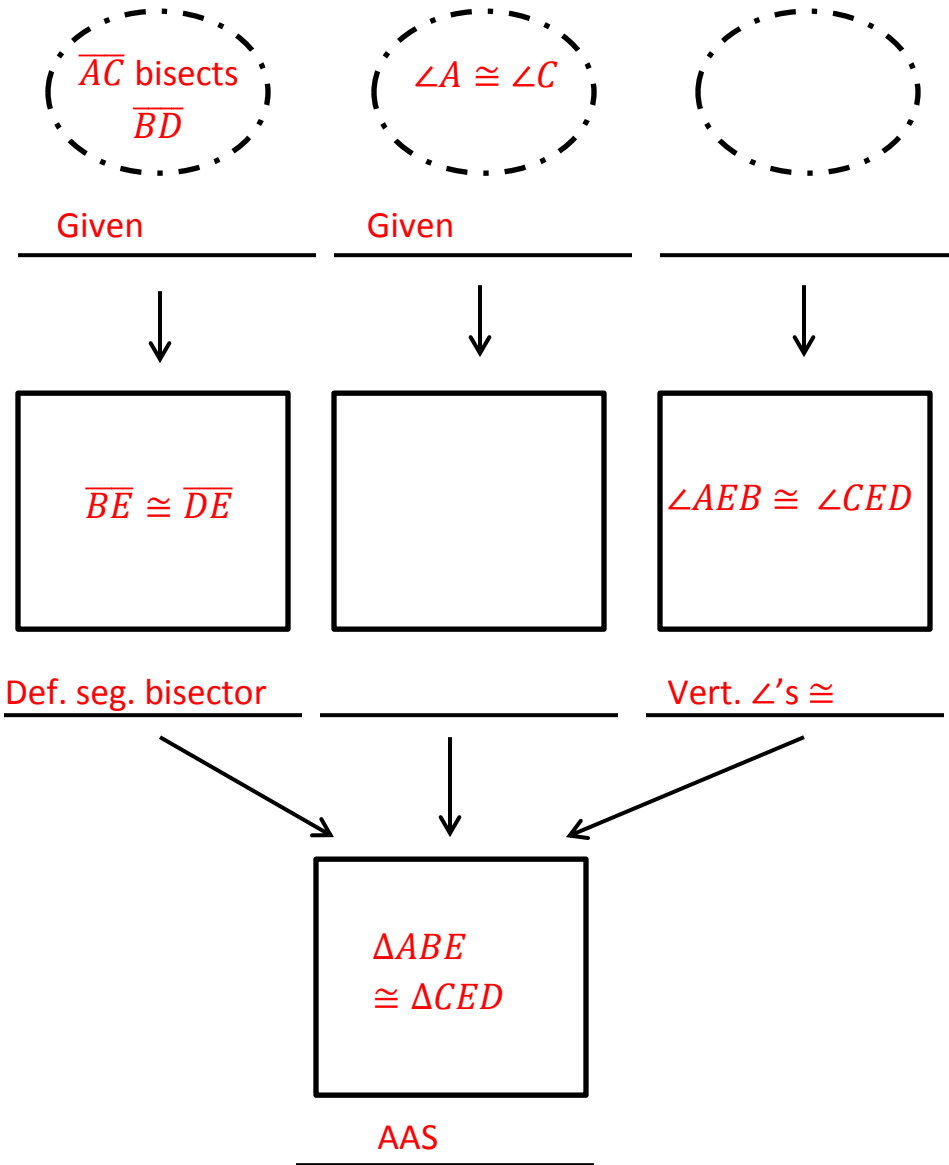
Statements	Reasons
1. C is the midpoint of $\overline{BD}$	1. Given
2. $\overline{BC} \cong \overline{DC}$	2. Def. of midpoint
3. $\overline{AB} \cong \overline{AD}$	3. Given
4. $\overline{AC} \cong \overline{AC}$	4. Reflexive
5. $\triangle ABC \cong \triangle ADC$	5. SSS

Given:  $\overline{AC}$  bisects  $\overline{BD}$ ;  $\angle A \cong \angle C$

Diagram:



Prove:  $\triangle ABE \cong \triangle CDE$



Statements	Reasons
1. $\overline{AC}$ bisects $\overline{BD}$	1. Given
2. $\overline{BE} \cong \overline{DE}$	2. Def. seg. bisector
3. $\angle A \cong \angle C$	3. Given
4. $\angle AEB \cong \angle CED$	4. Vert. $\angle$ 's $\cong$
5. $\triangle ABE \cong \triangle CED$	5. AAS