

# 4.4: Proving Triangles are Congruent: ASA, AAS

Objective: Prove that triangles are congruent using ASA and AAS

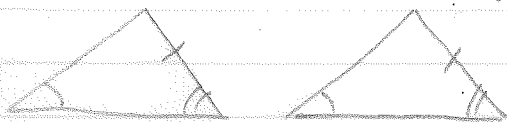
Postulate 21 ASA

If two angles and the included side of one triangle are congruent to two angles and the included side of a second triangle, then the two triangles are congruent

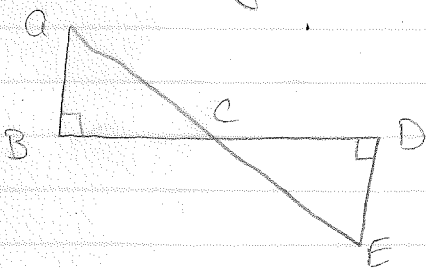


Theorem 4.5 AAS

If two angles and a nonincluded side of one triangle are congruent to two angles and the corresponding nonincluded side of another triangle, then the two triangles are congruent



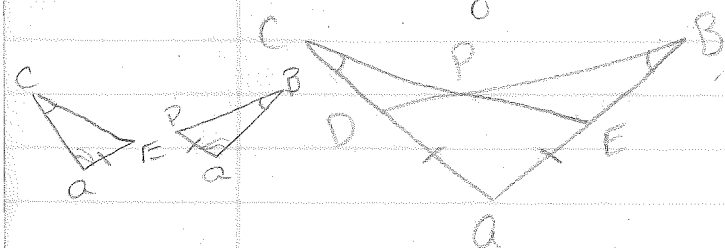
Proof using ASA



Given:  $\angle B, \angle D$  are right angles  
C is the midpoint of  $\overline{BD}$

Prove:  $\triangle ABC \cong \triangle EDC$

Proof Using AAS



Statement	Reason
1) $\overline{AD} \cong \overline{AE}$	1) Given
2) $\angle B \cong \angle C$	2) Given
3) $\angle A \cong \angle A$	3) Reflexive
4) $\triangle ABD \cong \triangle ACE$	4) AAS

Given:  $\overline{AD} \cong \overline{AE}, \angle B \cong \angle C$   
Prove:  $\triangle ABD \cong \triangle ACE$