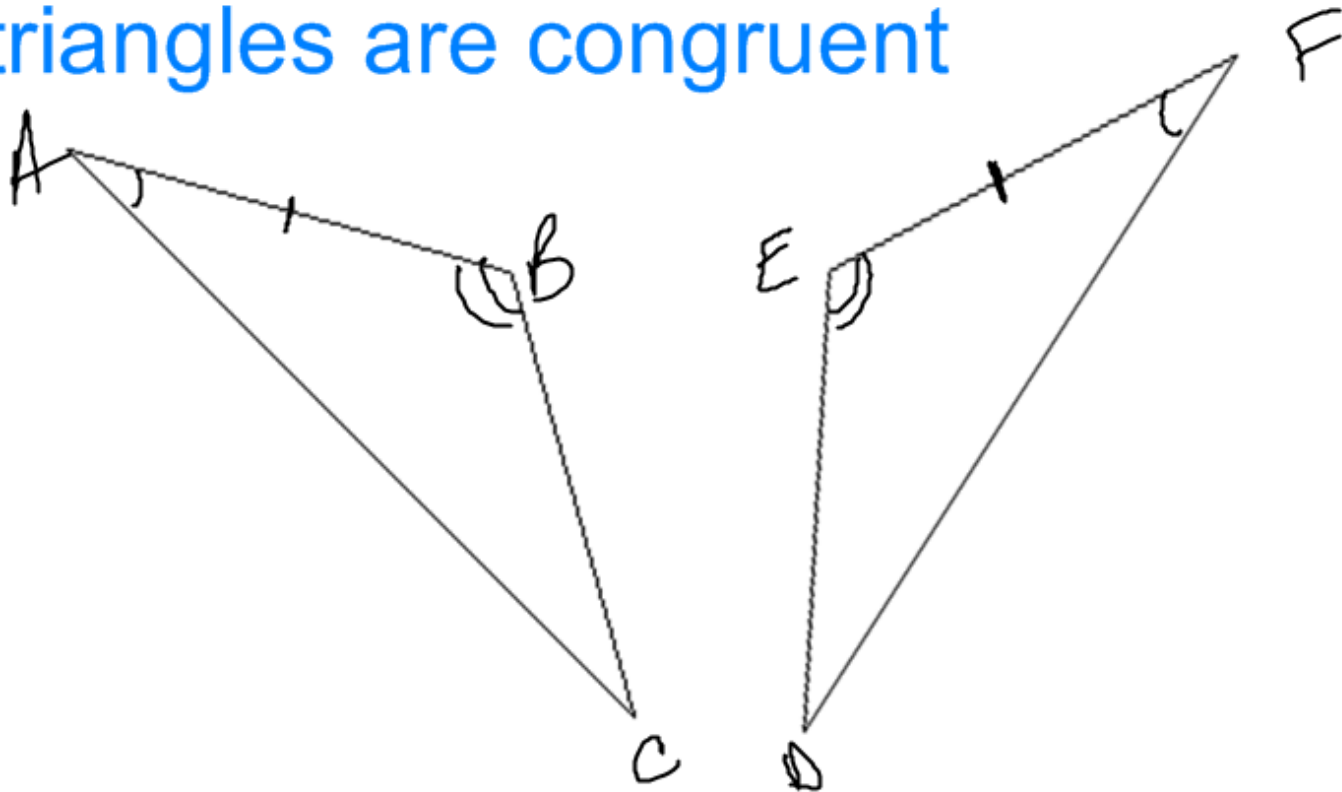


# ASA Angle-Side-Angle Congruence

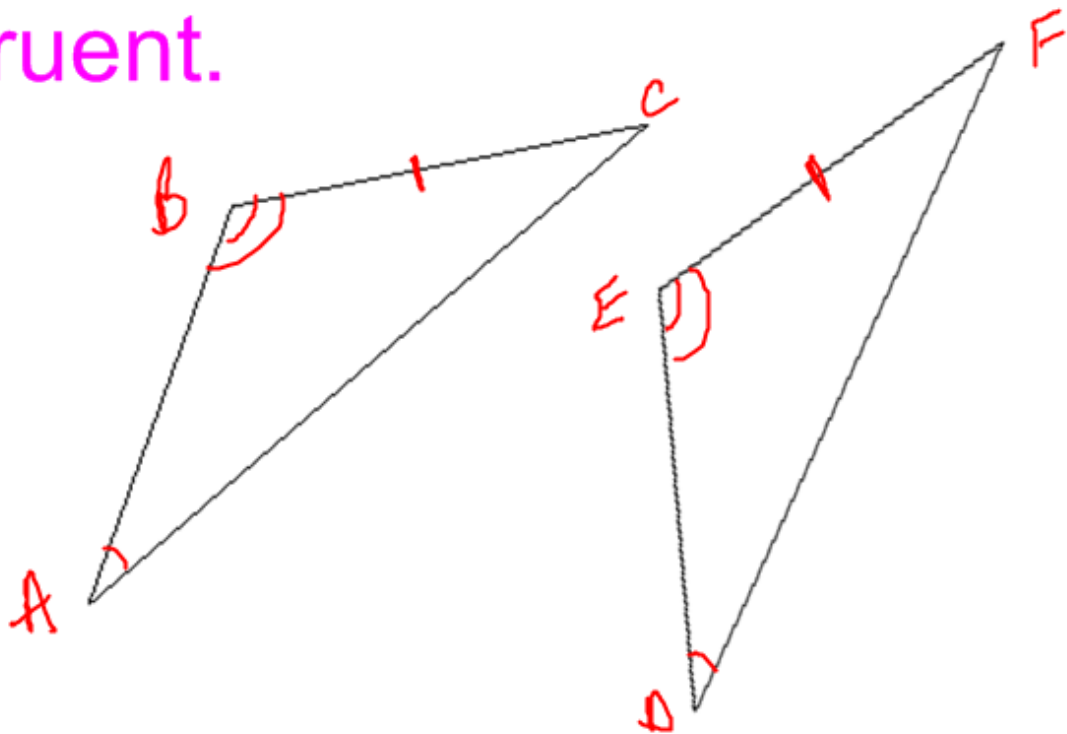
If two angles and the included side of one triangle are congruent to two angles and the included side of another triangle, then the triangles are congruent



$$\begin{aligned}\angle A &\cong \angle F \quad (A) \\ \overline{AB} &\cong \overline{FE} \quad (S) \\ \angle B &\cong \angle E \quad (A)\end{aligned}$$

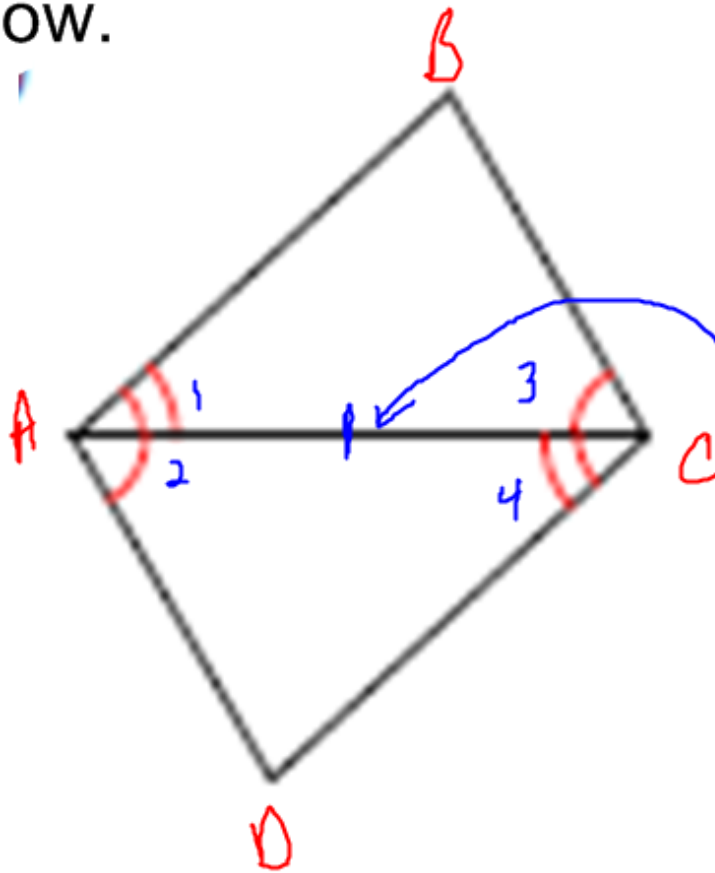
# AAS Angle-Angle-Side Congruence

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



$$\begin{aligned}\angle A &\cong \angle D \text{ (A)} \\ \angle B &\cong \angle E \text{ (A)} \\ \overline{BC} &\cong \overline{EF} \text{ (S)}\end{aligned}$$

State if the two triangles are congruent. If they are, state how you know.



$$\angle 1 \cong \angle 4 \quad (A)$$

$$\angle 2 \cong \angle 3 \quad (A)$$

$$\overline{AC} \cong \overline{CA} \quad (S)$$

→ shared side  
and it is the included  $\angle$

between  $\angle A$  &  $\angle C$ ,

so

yes  $\cong$ , ASA,

$$\triangle ABC \cong \triangle CDA$$

State if the two triangles are congruent. If they are, state how you know.

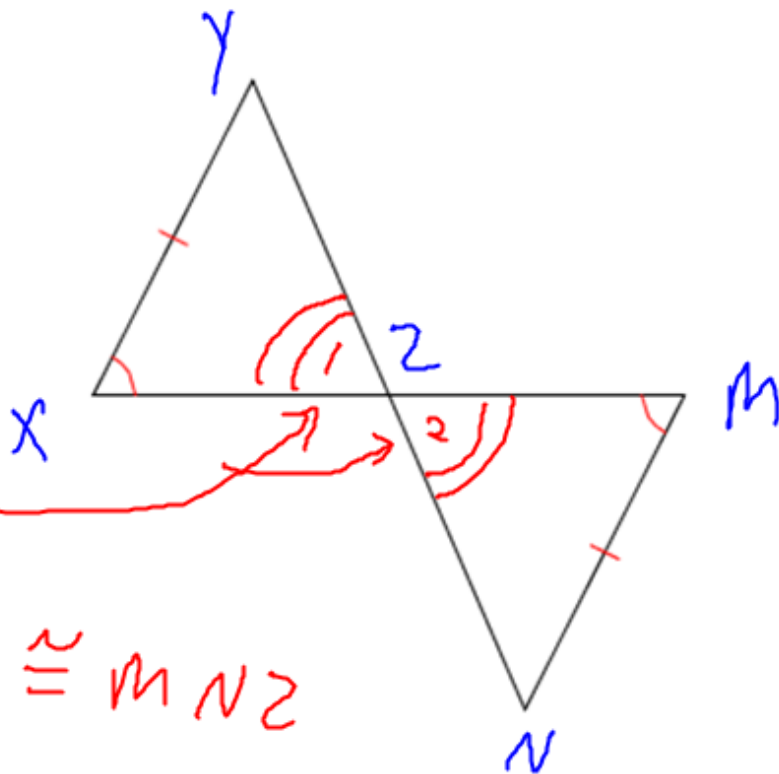
$$\overline{XY} \cong \overline{MN}$$

$$\angle X \cong \angle M$$

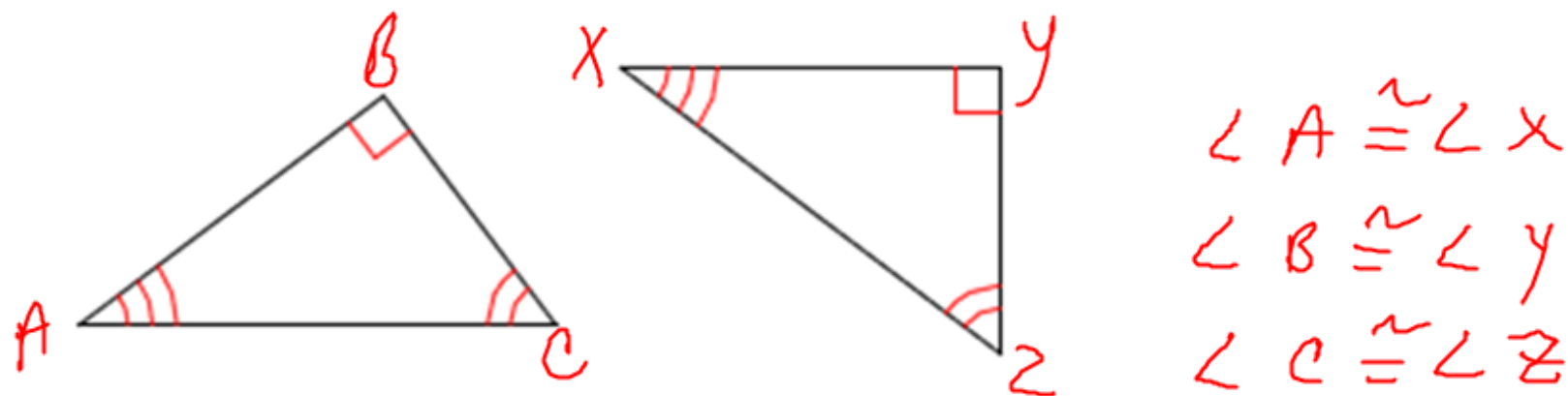
$$\angle 1 \cong \angle 2$$

(vertical  $\angle$ 's)

yes, AAS,  $\triangle XYZ \cong \triangle MNZ$



State if the two triangles are congruent. If they are, state how you know.



$$\angle A \cong \angle X$$

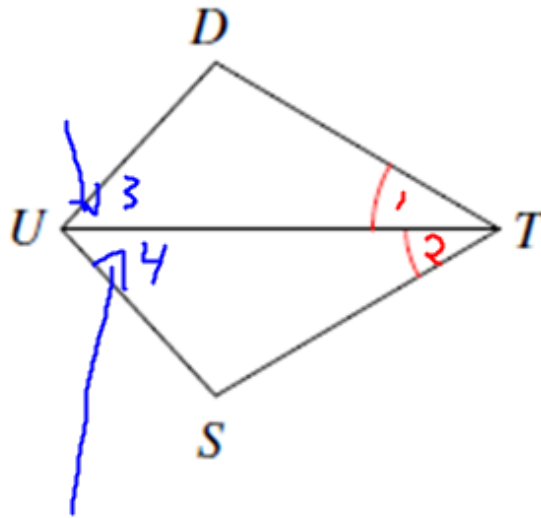
$$\angle B \cong \angle Y$$

$$\angle C \cong \angle Z$$

Not  $\cong$ , AAA not valid  
Shortcut

State what additional information is required in order to know that the triangles are congruent for the reason given.

ASA



Given:  $\angle 1 \cong \angle 2$   
 $\overline{TU} \cong \overline{TU}$

Answer:  $\angle 3 \cong \angle 4$

State what additional information is required in order to know that the triangles are congruent for the reason given.

AAS

GIVEN:

$$\angle M \cong \angle S \quad A$$

$$\overline{LM} \cong \overline{TS} \quad S$$

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$$\text{Answer: } \angle K \cong \angle U$$

