

# **Proving Triangle Congruence by ASA and AAS**

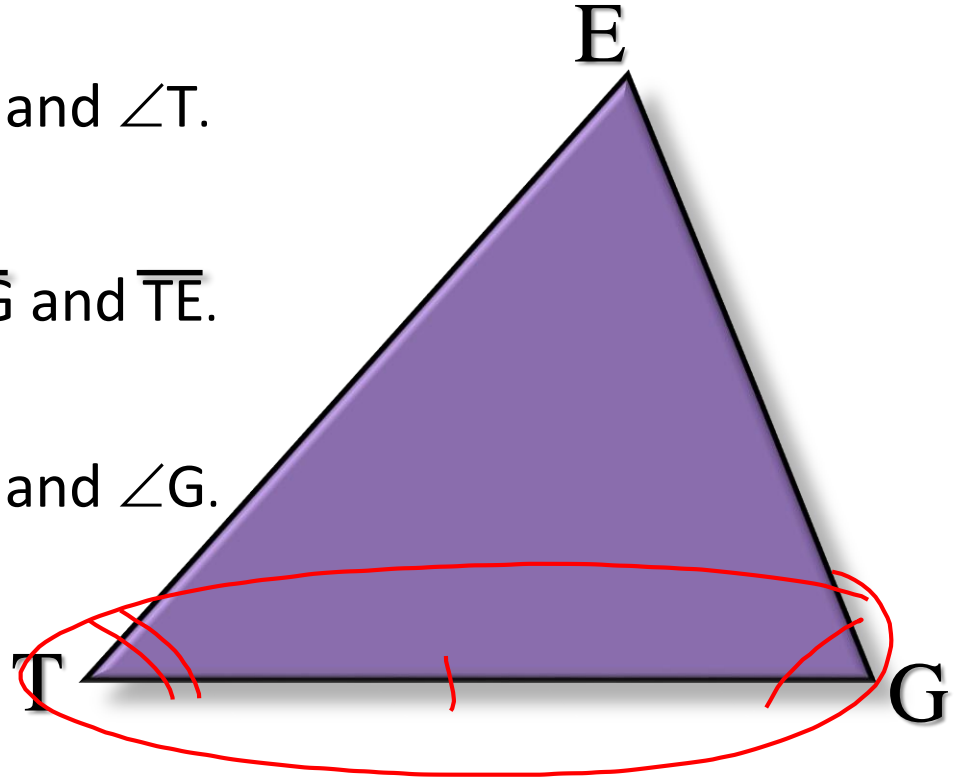
Section 5.6

# Included & Non-included Sides & Angles

Name the included side to  $\angle E$  and  $\angle T$ .

Name the included angle to  $\overline{TG}$  and  $\overline{TE}$ .

Name the included side to  $\angle T$  and  $\angle G$ .

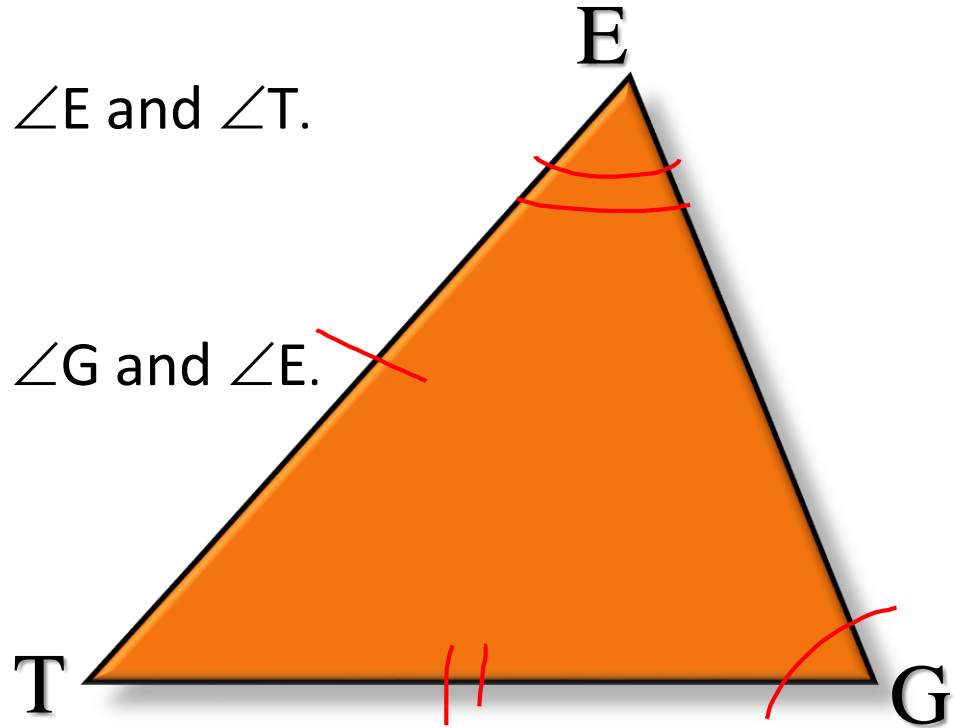


# Included & Non-included Sides & Angles

Name the **non**-included side to  $\angle E$  and  $\angle T$ .

$\overline{EG}$        $\overline{TG}$

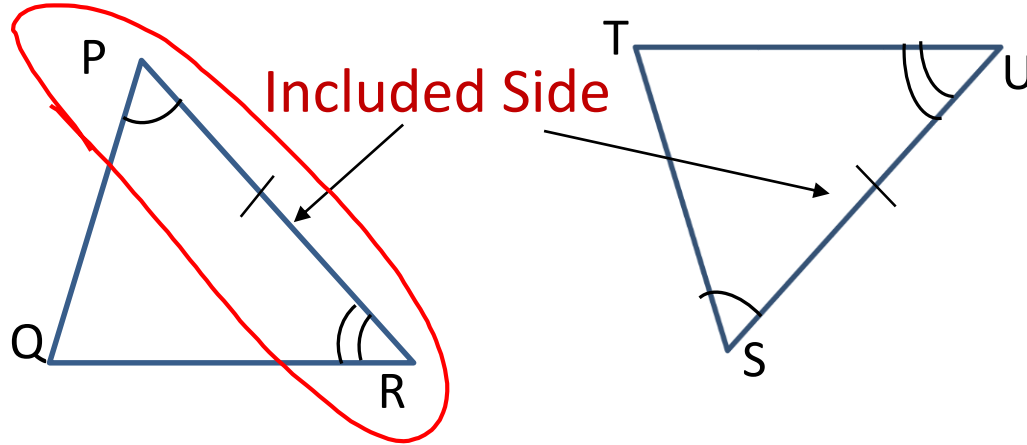
Name the **non**-included side to  $\angle G$  and  $\angle E$ .



# ASA Theorem

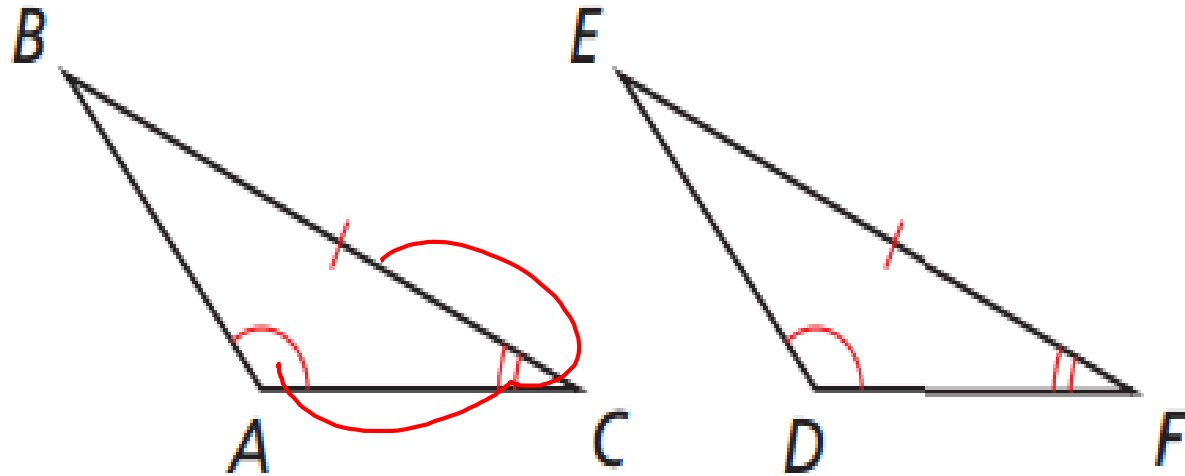
- If two corresponding angles and the **included** side of two triangles are congruent, then the triangles are congruent.

$$\triangle PQR \cong \triangle STU$$

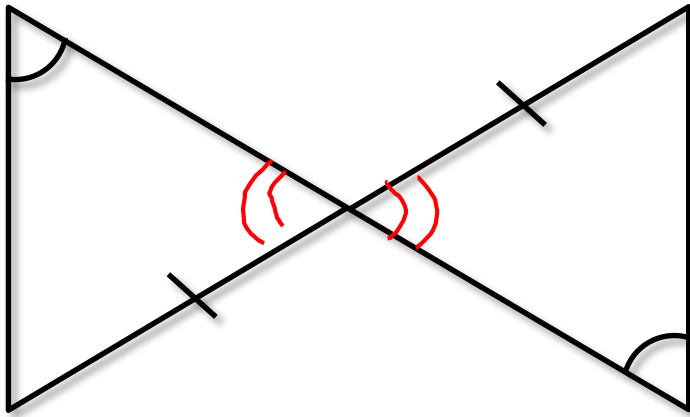


# AAS Theorem

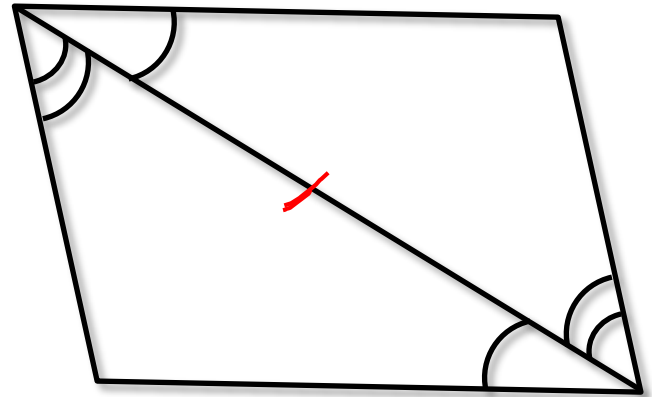
- If two corresponding angles and the **non-included** sides of two triangles are congruent, then the triangles are congruent.



Name the theorem that makes each triangle congruent if possible.



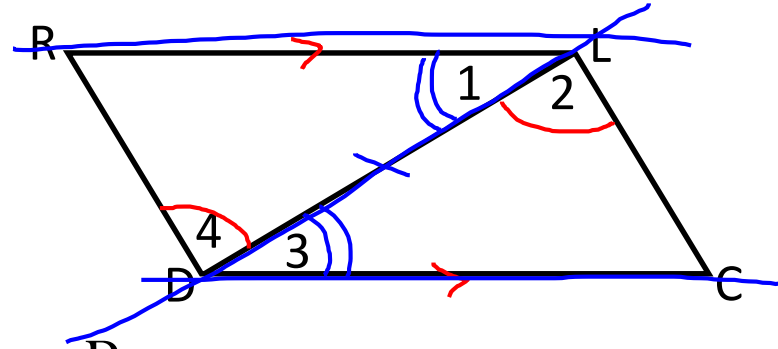
AAS



ASA

Given:  $\angle 4 \cong \angle 2$ ,  $\overline{RL} \parallel \overline{DC}$

Prove:  $\triangle RLD \cong \triangle CDL$



Statements

Reasons

1)  $\angle 4 \cong \angle 2$ ,  $\overline{RL} \parallel \overline{DC}$

2)  $\angle 1 \cong \angle 3$

3)  $\overline{LD} \cong \overline{LD}$

4)  $\triangle RLD \cong \triangle CDL$

1) given

2) AIA  $\cong$

3) Reflexive

4) ASA

Lesson 5.6 p.274; 3-12, 15-20, 34-36