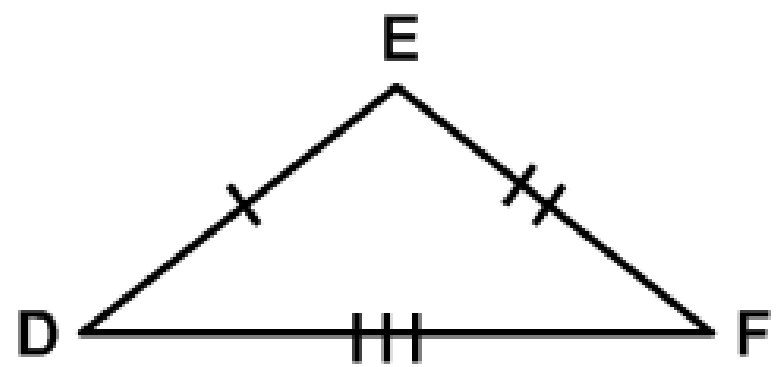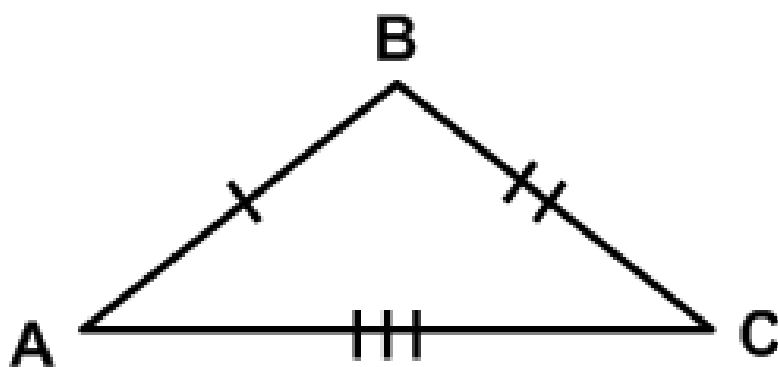# 4 - 4
Proving Congruence
(SSS, SAS)

Do we always need to show that _every part_ in one triangle is congruent to the corresponding part in a second triangle to prove that the triangles are congruent?
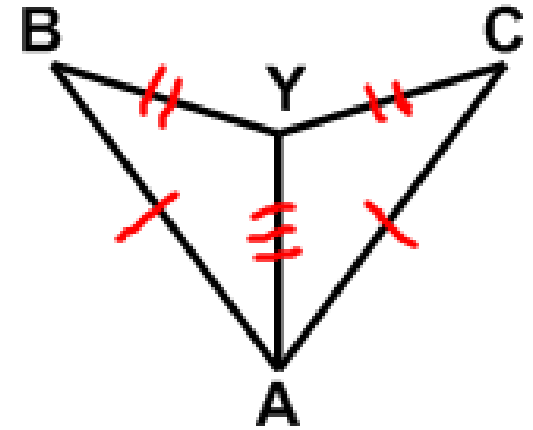
Side-Side-Side Postulate (SSS):

3 sides in one △ ≅ to 3 sides in another △, then △s are ≅

Proof:

Given: $\overline{AB} \cong \overline{AC}$, $\overline{BY} \cong \overline{CY}$
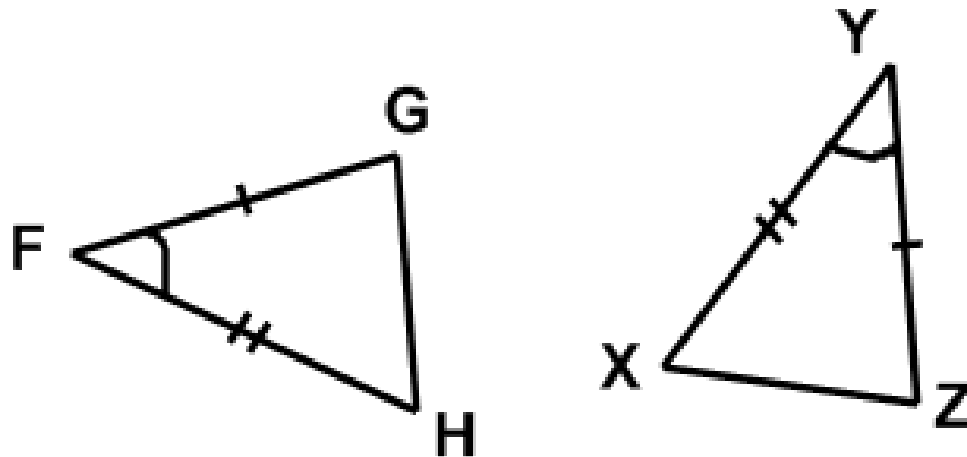
Prove: $\triangle BYA \cong \triangle CYA$

Statements	Reasons
1. $\overline{AB} \cong \overline{AC}$, $\overline{BY} \cong \overline{CY}$	1. Given
2. $\overline{YA} \cong \overline{YA}$	2. Reflexive
3. $\triangle BYA \cong \triangle CYA$	3. SSS

included angle: the angle formed by two given sides

Side-Angle-Side Postulate (SAS):

2 sides and the included of one △ ≅ to 2 corresponding sides and included angle of another △, then △s are ≅
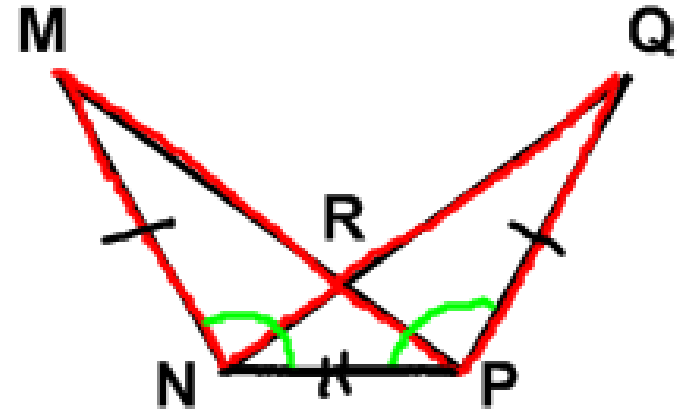
Proof:

Given: $\triangle MRN \cong \triangle QRP$
$\angle MNP \cong \angle QPN$

Prove: $\triangle MNP \cong \triangle QPN$

Statements	Reasons
1. $\triangle MRN \cong \triangle QRP$ $\angle MNP \cong \angle QPN$	1. Given
2. $\overline{NP} \cong \overline{NP}$	2. Reflexive
3. $\overline{MN} \cong \overline{QP}$	3. CPCTC
4. $\triangle MNP \cong \triangle QPN$	4. SAS

Homework:

p. 203 #7, 8, 20-25