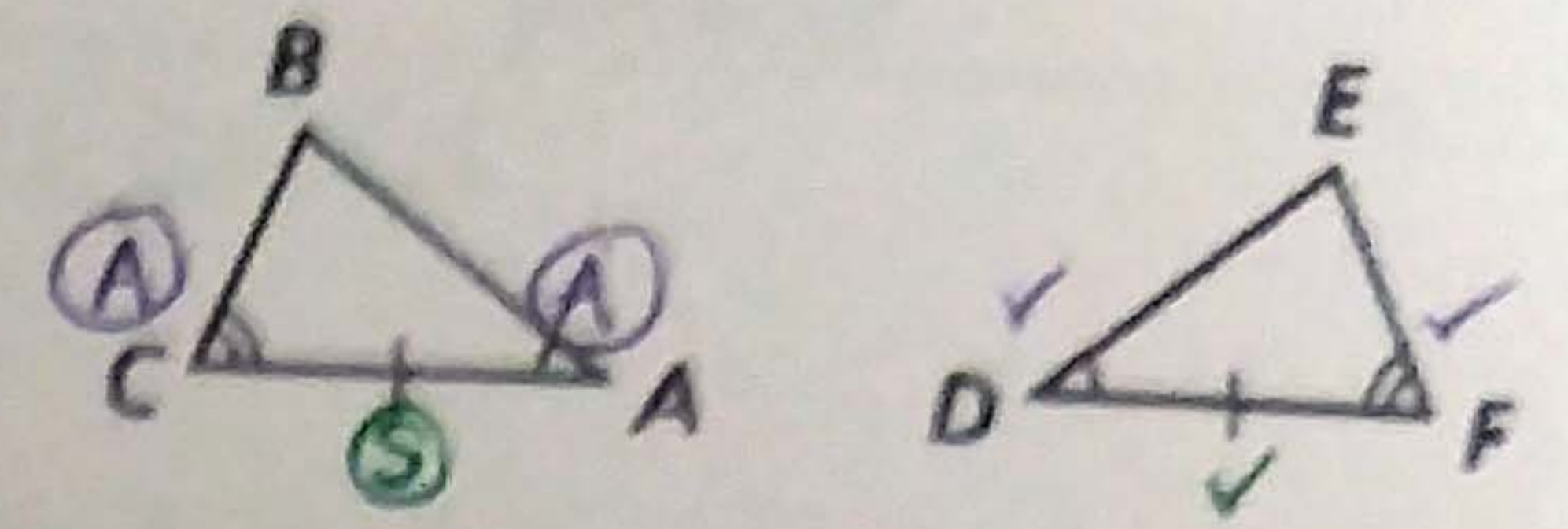


Geometry 5.6 Notes: Angle-Side-Angle Triangle Congruence

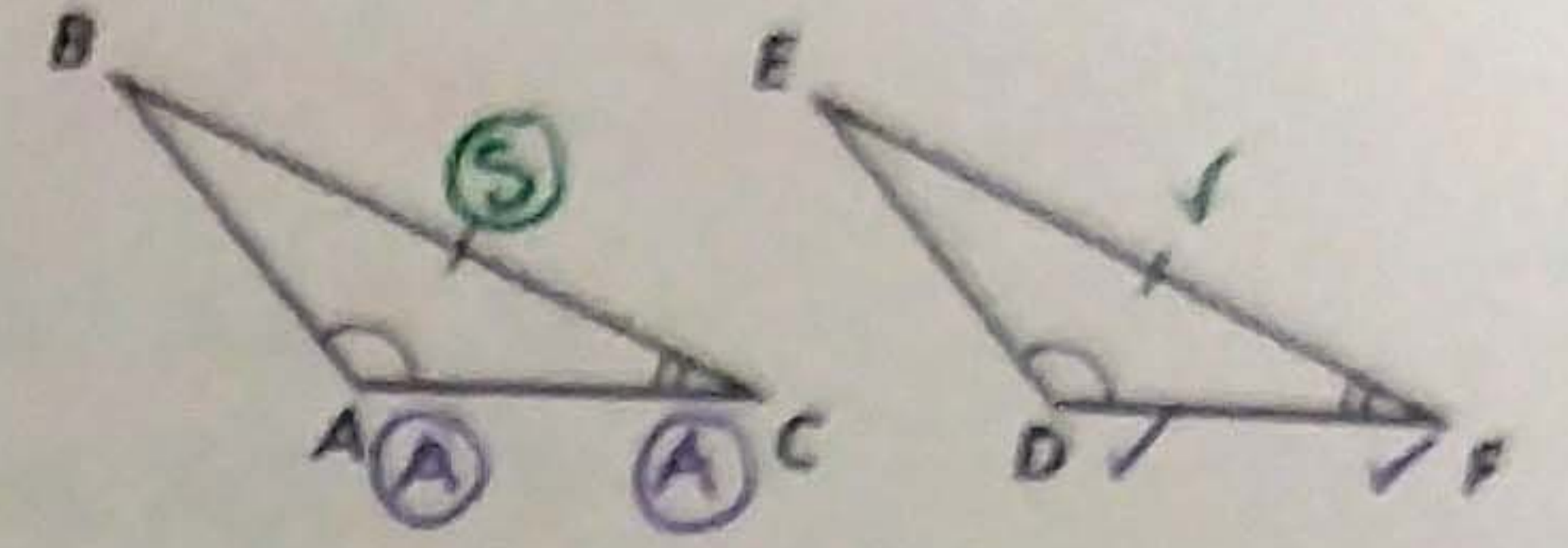
Angle-Side-Angle Congruence Theorem (ASA \cong)

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.

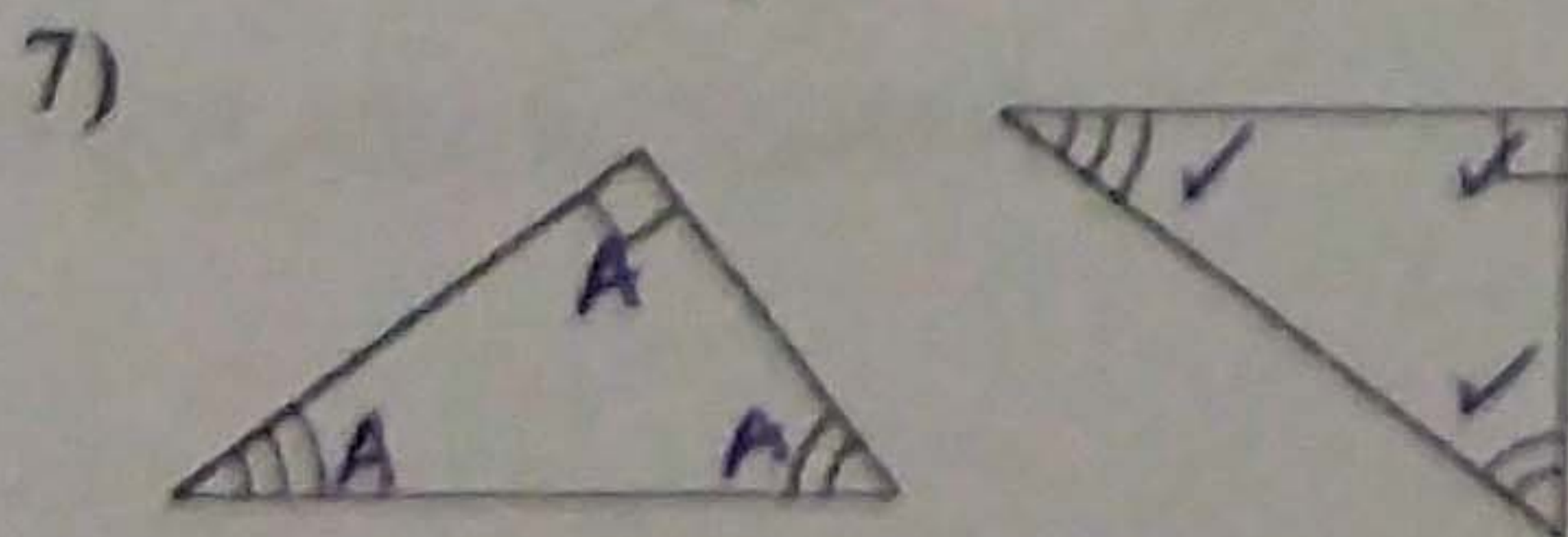
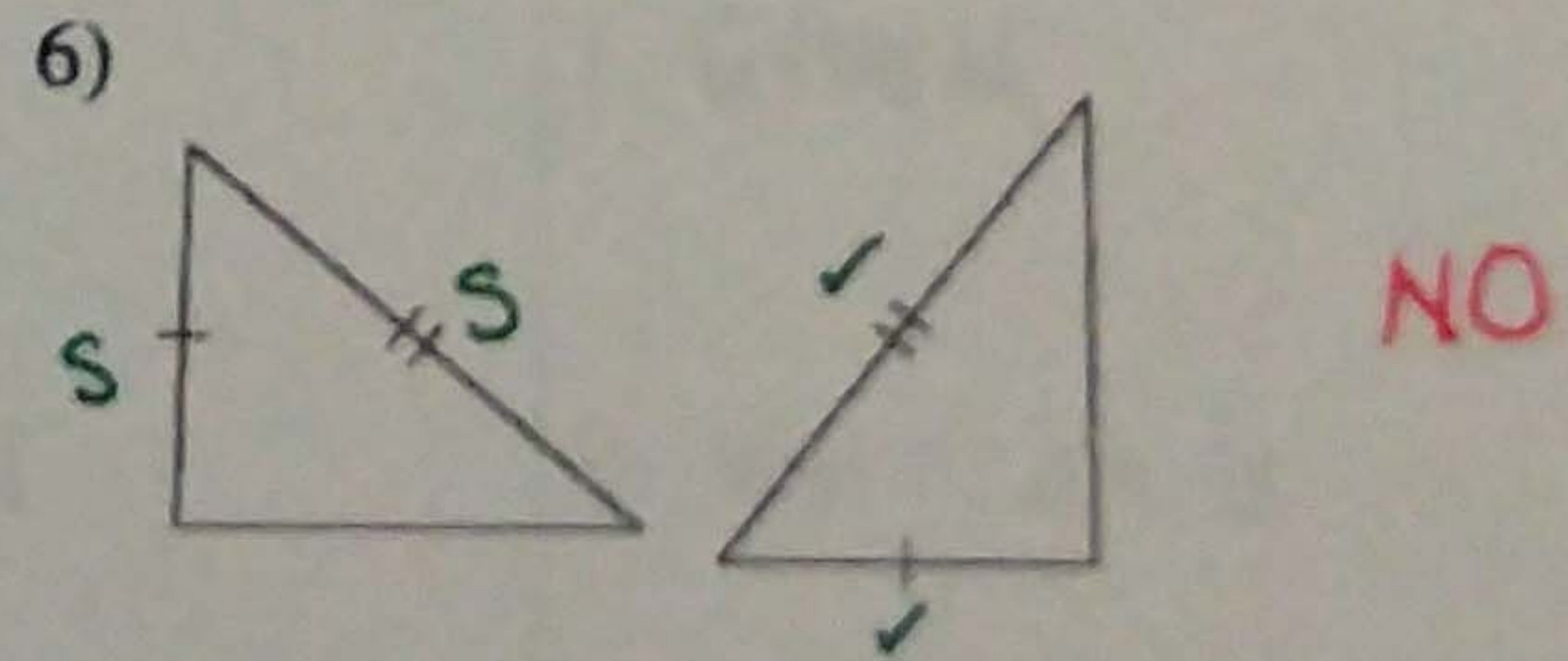
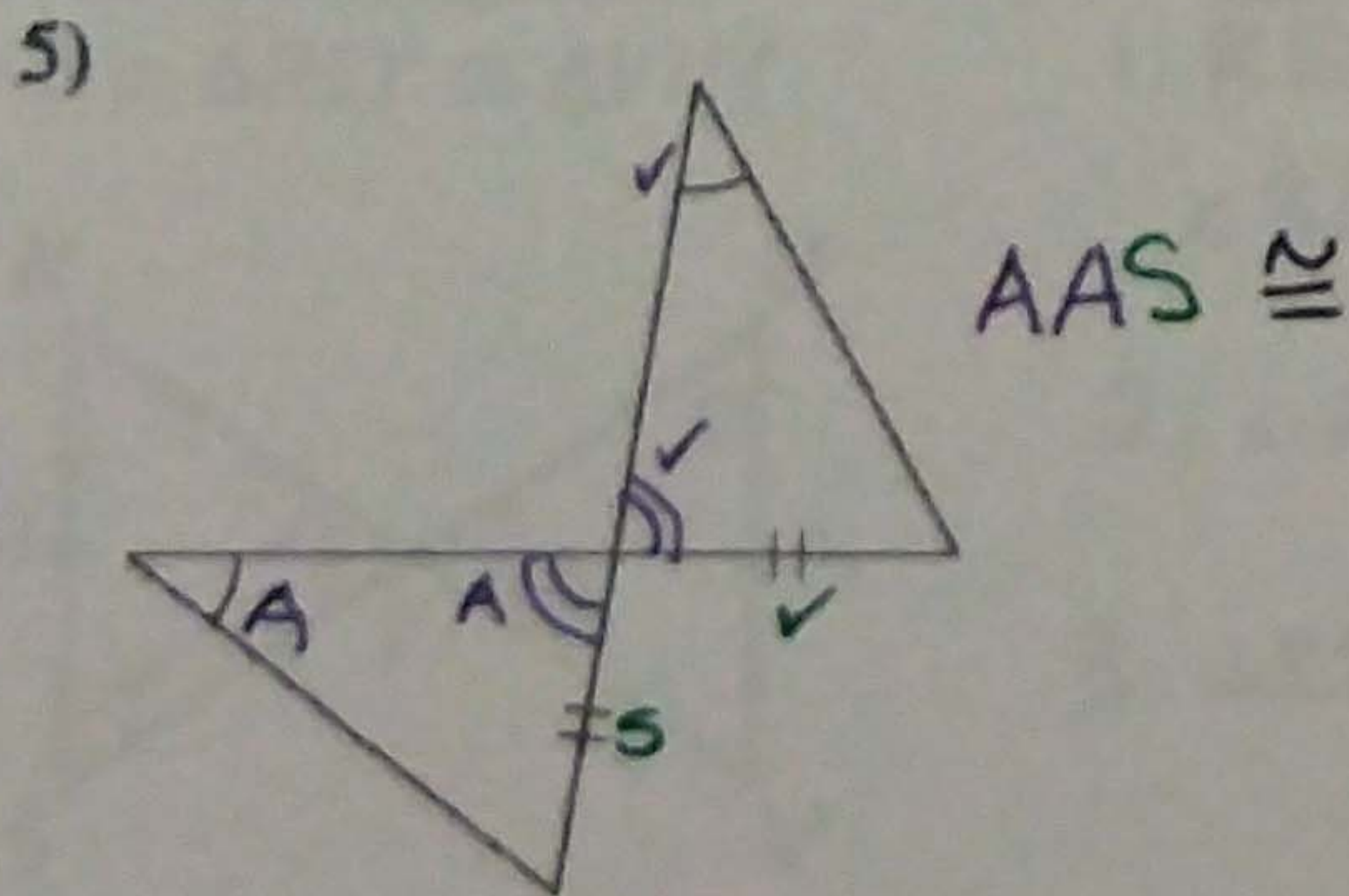
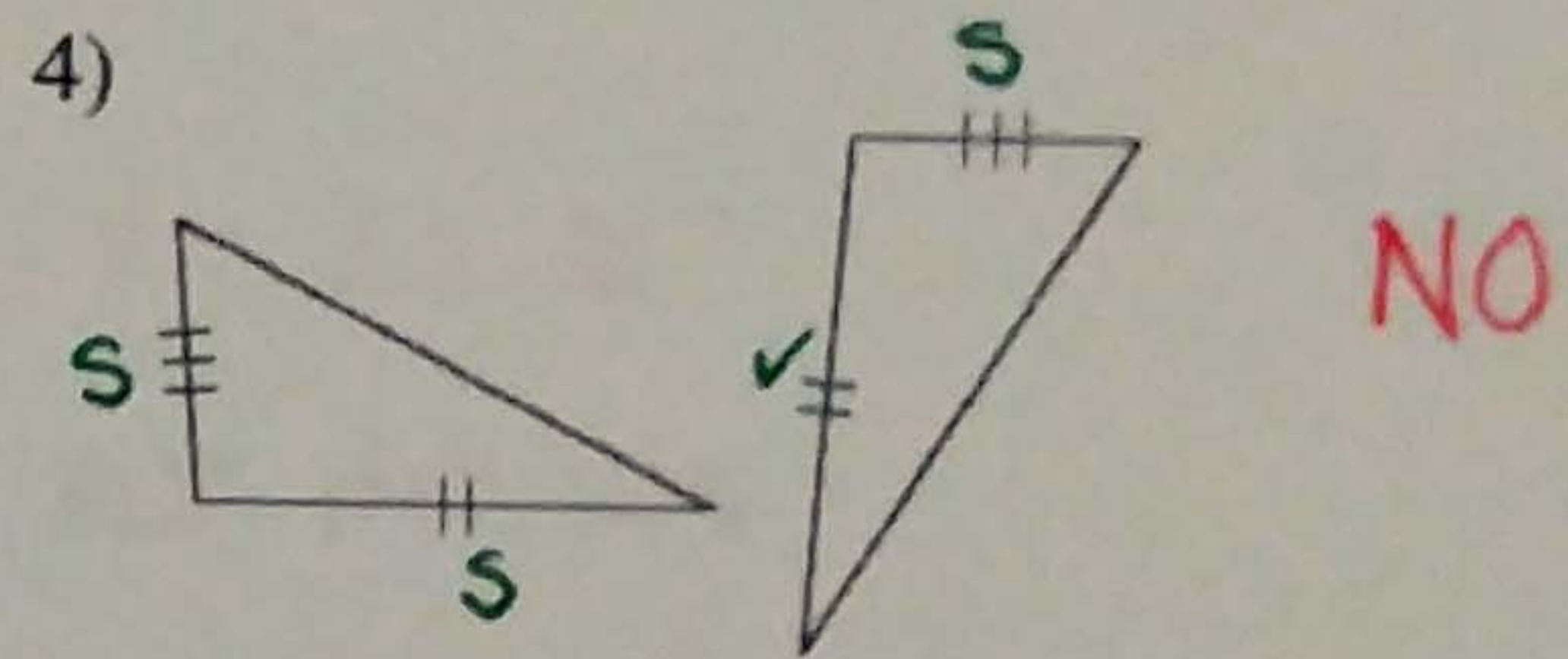
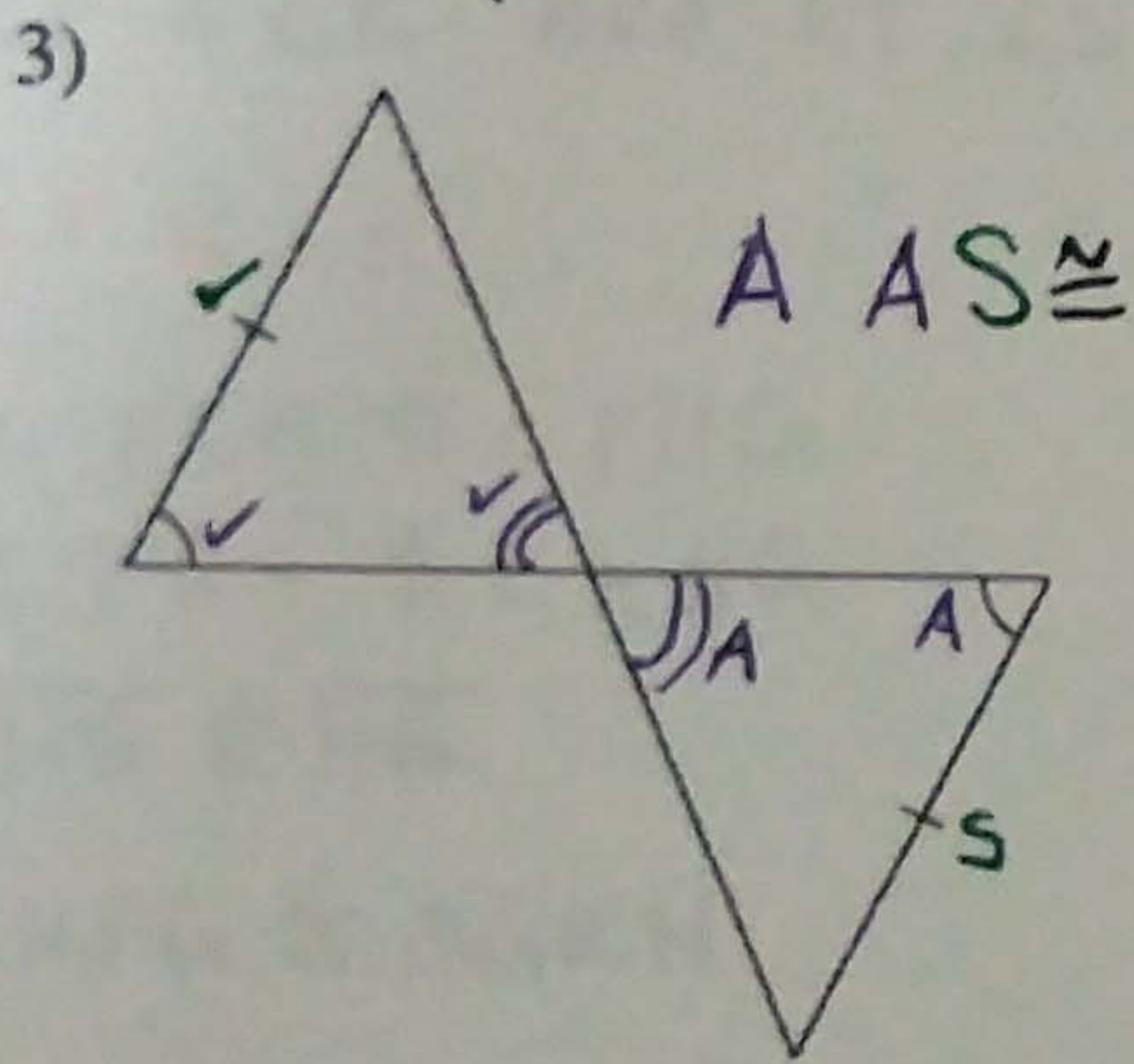
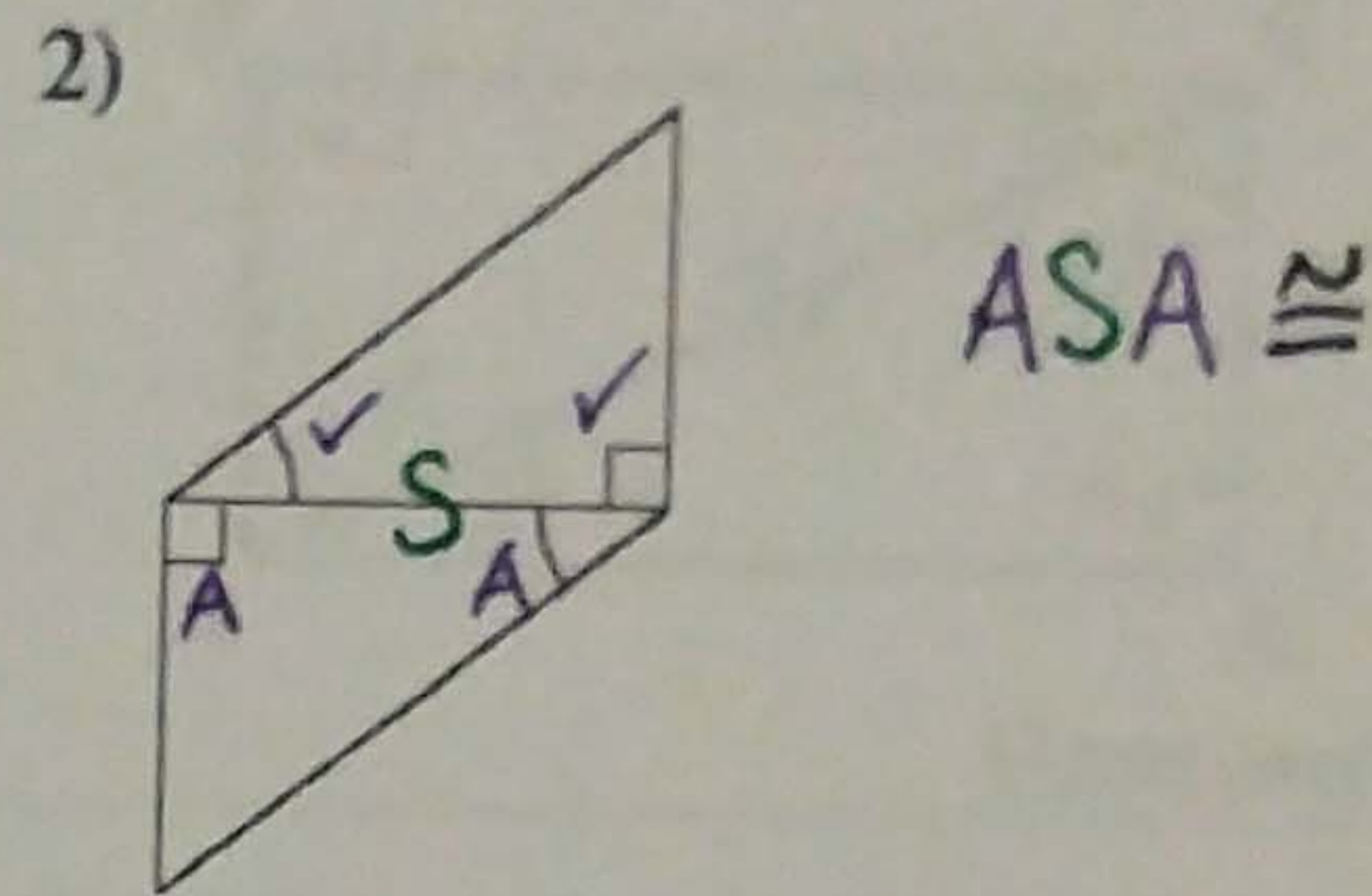
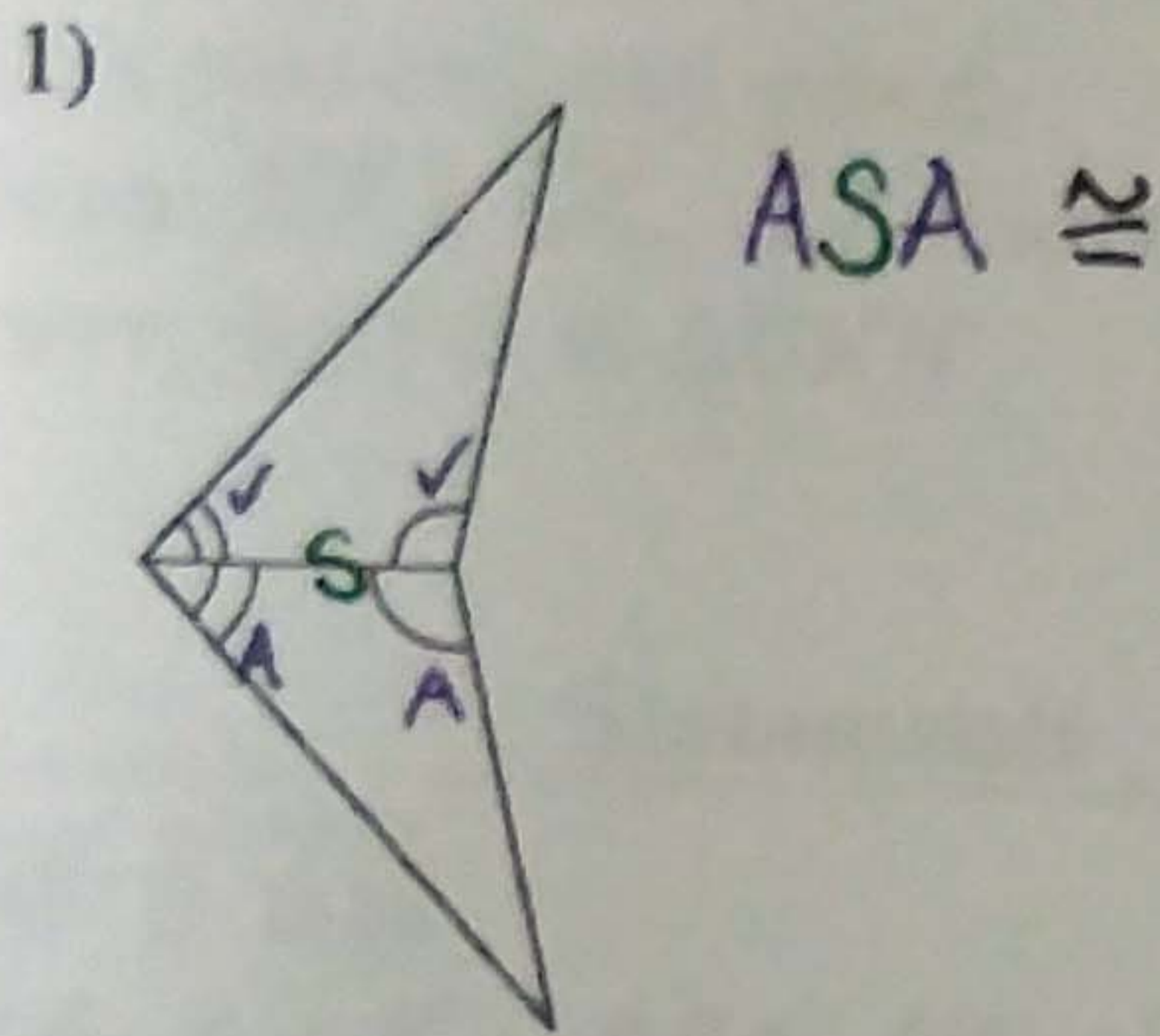


Angle-Angle-Side Congruence Theorem (AAS \cong)

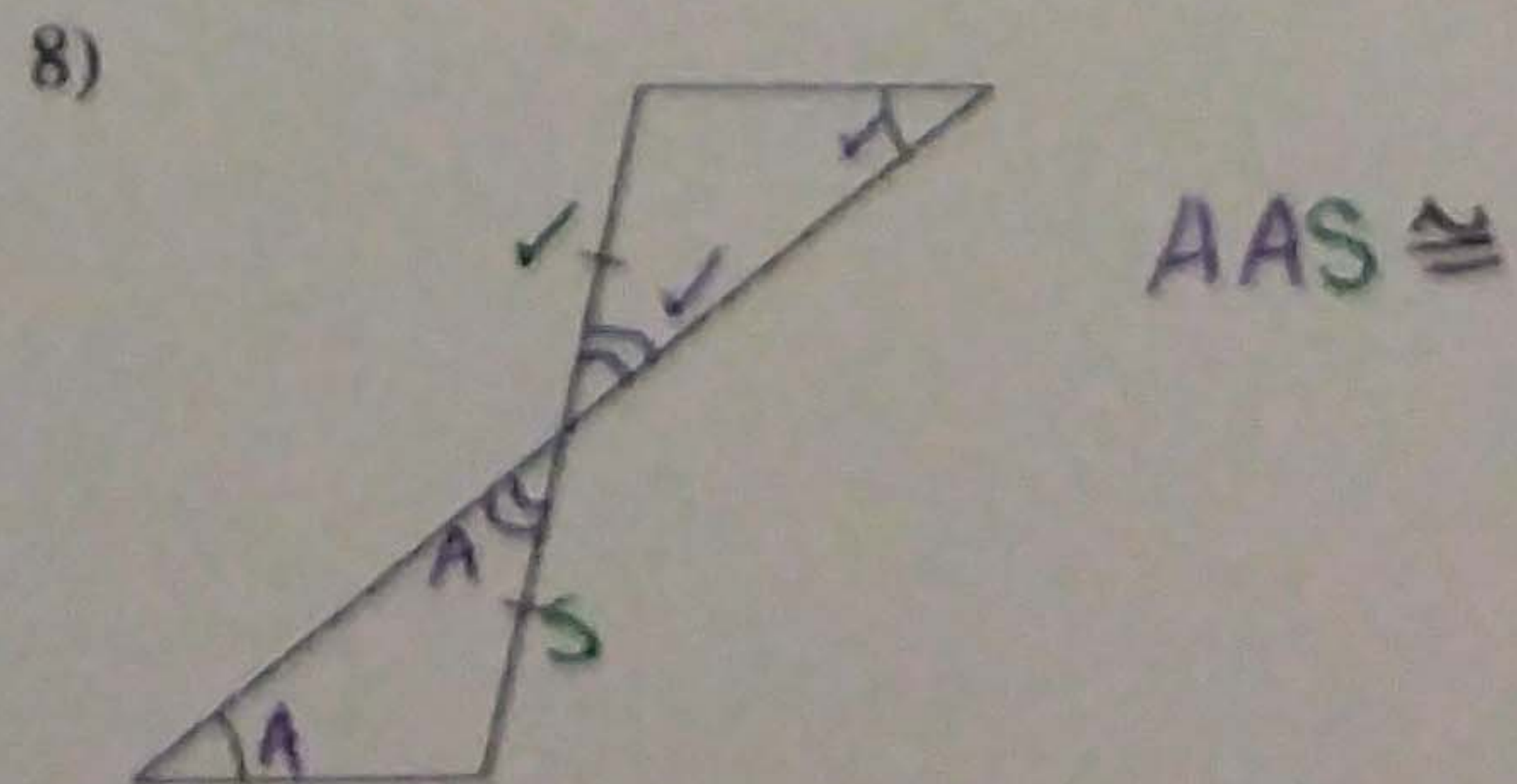
If two angles and a non-included side of one triangle are congruent to two angles and the corresponding non-included side of a second triangle, then the two triangles are congruent.



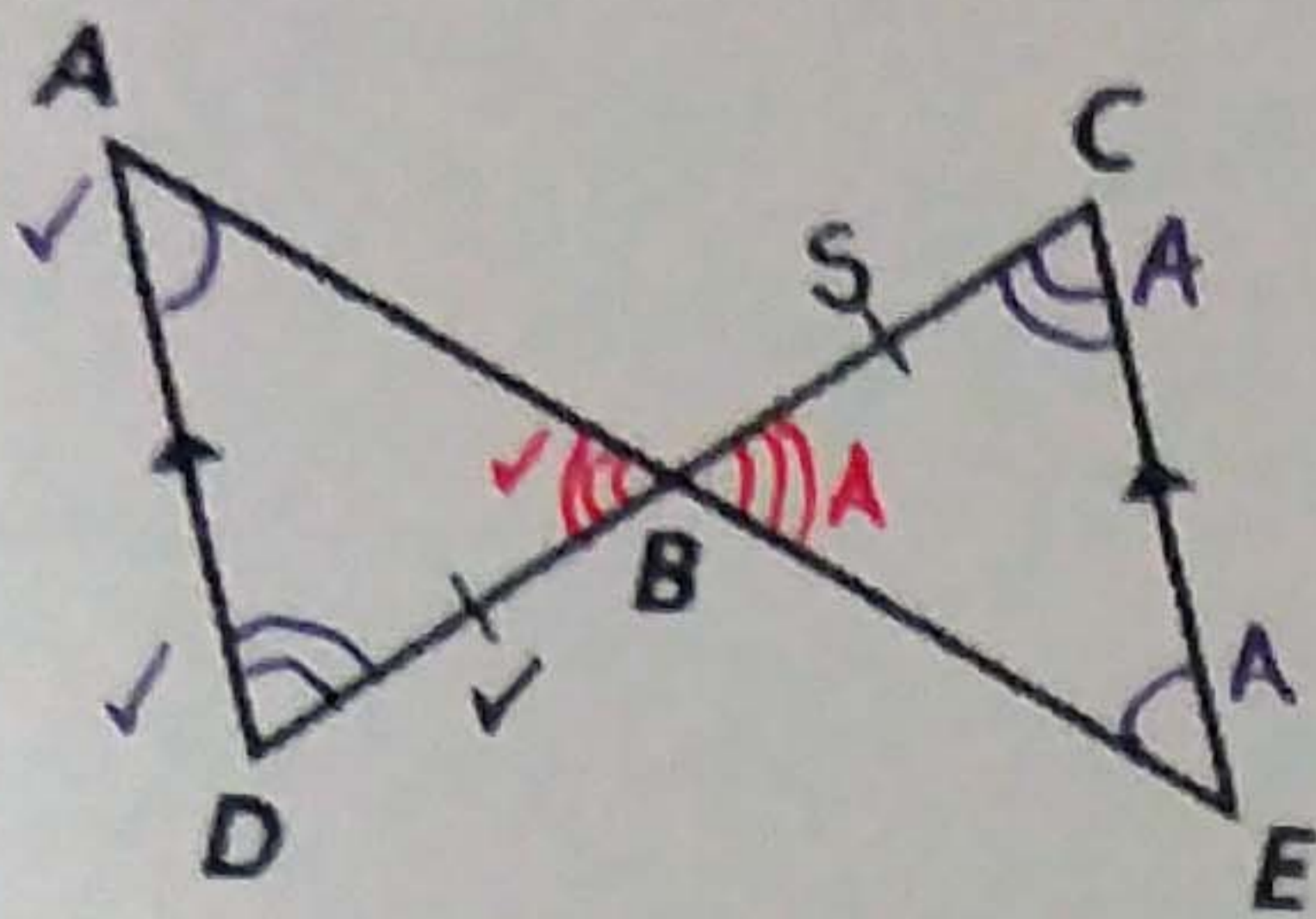
Can the triangles be proven congruent with the information given in the diagram? If so, state the theorem you would use.



NO.

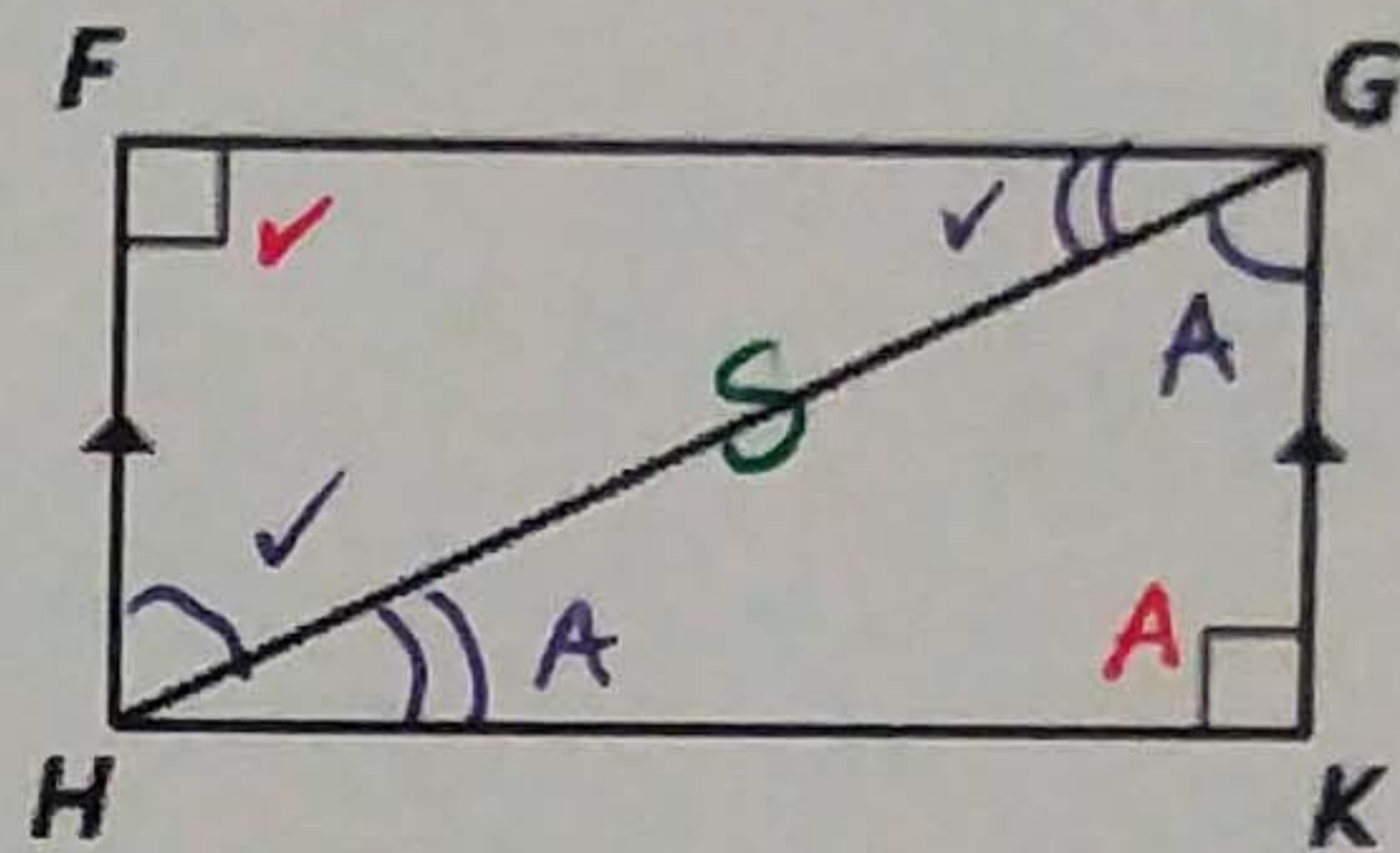


2. Write a two-column proof.
 Given: $\overline{AD} \parallel \overline{EC}$, $\overline{BD} \cong \overline{BC}$
 Prove: $\triangle ABD \cong \triangle EBC$



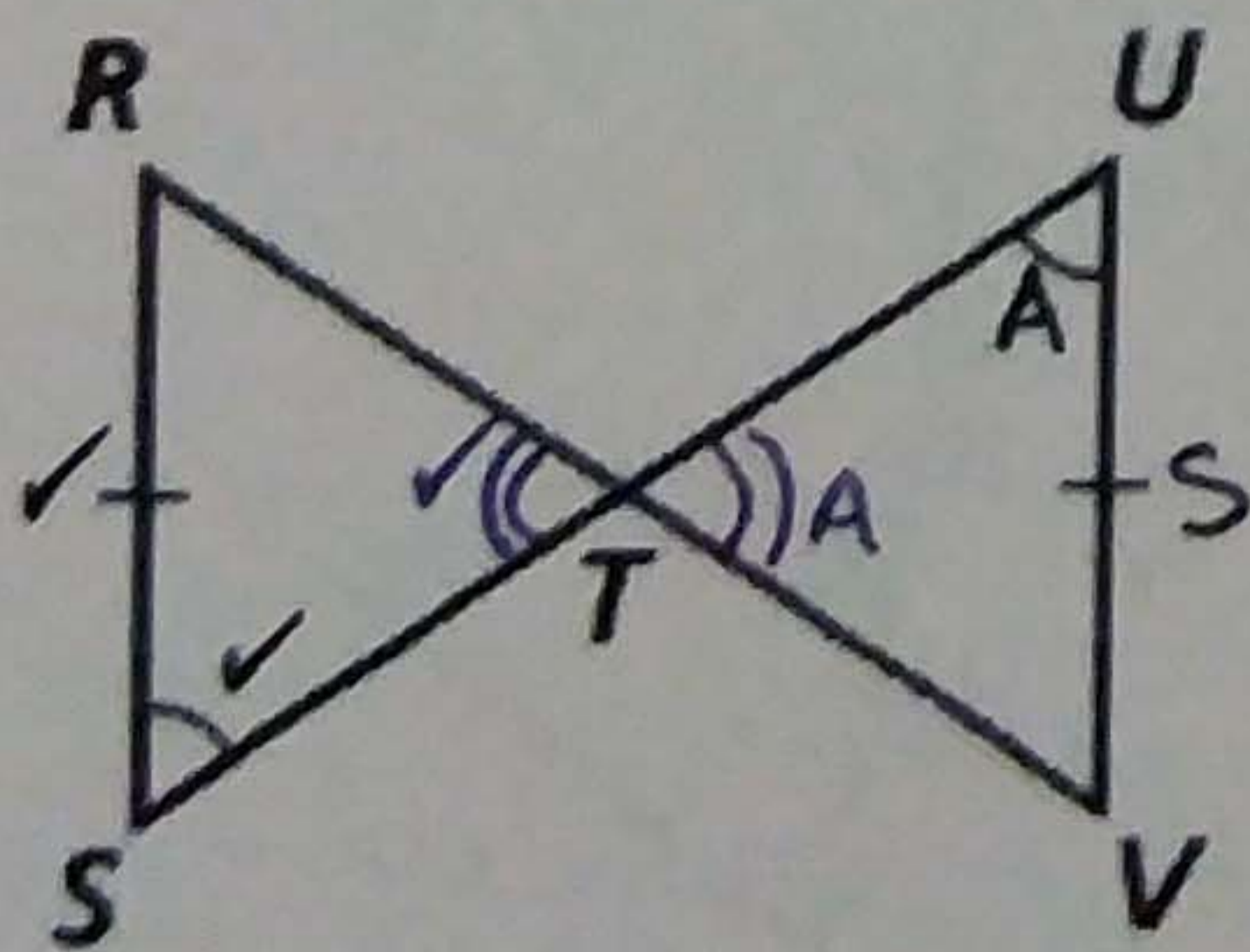
Statements	Reasons
1. $\overline{AD} \parallel \overline{EC}$ $\overline{BD} \cong \overline{BC}$	1. GIVEN
2. $\angle CEB \cong \angle DAB$ $\angle ECB \cong \angle ADB$ (ALSO $\angle CBE \cong \angle DBA$)	2. ALT. INT. \angle S (VERTICAL \angle S)
3. $\triangle ABD \cong \triangle EBC$	3. AAS \cong OR ASA \cong OR AAS \cong

3. Write a two-column proof.
 Given: $\overline{HF} \parallel \overline{GK}$, $\angle F$ and $\angle K$ are right angles
 Prove: $\triangle HFG \cong \triangle GKH$



Statements	Reasons
1. $\overline{HF} \parallel \overline{GK}$ $\angle F$ & $\angle K$ ARE RT. \angle S	1. GIVEN
2. $\angle F \cong \angle K$	2. RT. \angle S \cong
3. $\angle KGH \cong \angle FHG$ $\angle FGH \cong \angle KHG$	3. ALT. INT. \angle S
4. $\overline{HG} \cong \overline{HG}$	4. REFL. PROP. \cong
5. $\triangle HFG \cong \triangle GKH$	5. ASA \cong OR AAS \cong

4. Write a two-column proof.
 Given: the diagram
 Prove: $\triangle RST \cong \triangle VUT$



Statements	Reasons
1. $\overline{RS} \cong \overline{VU}$ $\angle RST \cong \angle VUT$	1. GIVEN
2. $\angle RTS \cong \angle VTU$	2. VERT. \angle S \cong
3. $\triangle RST \cong \triangle VUT$	3. AAS \cong

USE ASA!!!