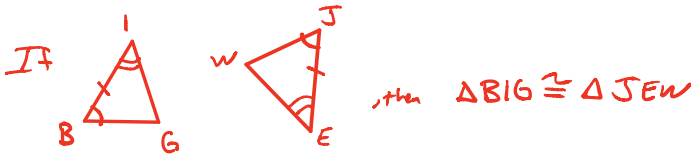
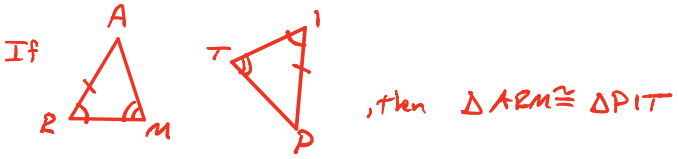
Triangle Congruence – AAS and ASA

Notes Section 4.3 Name_____

ASA Congruence Postulate (Angle-Side-Angle)
If two angles and the included side of one triangle are congruent to two angles and the included side of another triangle, the triangles are congruent.

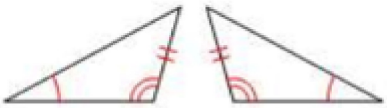


AAS Congruence Postulate (Angle-Angle-Side)
If two angles and a nonincluded side of one triangle are congruent to the corresponding two angles and side of a second triangle, the two triangles are congruent.



State if the two triangles are congruent. If they are, state why.

1.

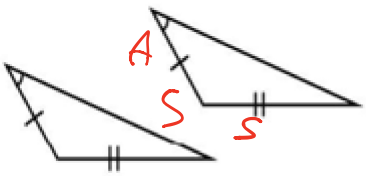


Yes AAS Postulate

2.

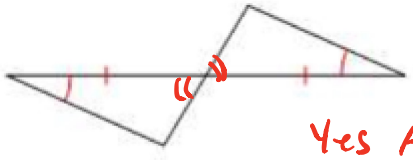
Yes AAS Postulate

3.



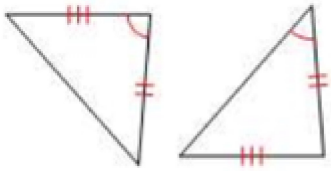
NO!

4.



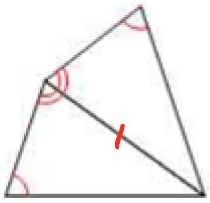
Yes ASA Postulate

5.



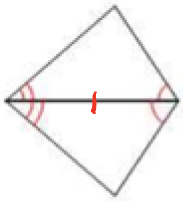
NO

6.



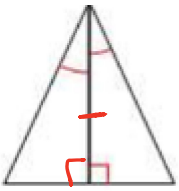
Yes AAS Postulate

7.



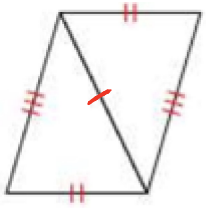
Yes ASA Postulate

8.



Yes ASA Postulate

9.



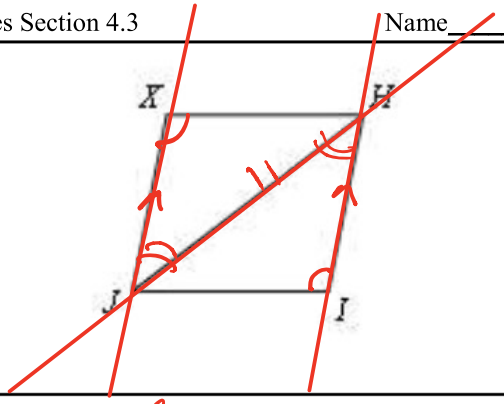
Yes SSS Postulate

Triangle Congruence – AAS and ASA

Notes Section 4.3 Name_____

Given: $\angle X \cong \angle I$
$\overline{XJ} \parallel \overline{IH}$

Prove: $\Delta JHI \cong \Delta HJX$

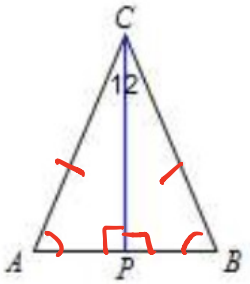


WHY ARE THE TWO TRIANGLES CONGRUENT? AAS

STATEMENTS	REASONS
1. $\overline{XJ} \parallel \overline{IH}$ $\angle X \cong \angle I$	1. Given
2. $\angle XJH \cong \angle IHJ$	2. Alt INT $\angle$s Theorem
3. $\overline{JH} \cong \overline{JH}$	3. Congruence of segments is Reflexive
4. $\Delta JHI \cong \Delta HJH$	4. AAS Postulate

Given: $\overline{AC} \cong \overline{BC}$
$\overline{CP}$ **is perpendicular to** $\overline{AB}$

Prove: $\Delta ACP \cong \Delta BCP$



WHY ARE THE TWO TRIANGLES CONGRUENT? AAS

STATEMENTS	REASONS
1. $\overline{AC} \cong \overline{BC}$ $\overline{CP}$ is perpendicular to $\overline{AB}$	1. Given
2. $\angle CPB$ and $\angle CPA$ are right angles	2. Def'n of $\perp$
3. $\angle CPB \cong \angle CPA$	3. All right $\angle$s are congruent
4. ΔACB is isosceles	4. Def'n of isosceles
5. $\angle A \cong \angle B$	5. Isosceles Δ Th'm
6. $\Delta ACP \cong \Delta BCP$	6. AAS Postulate