Name: _____ **Date:** _____

CC Geometry

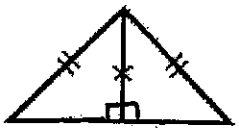
Review for Triangle Proofs Quiz

In 1 – 9, each figure shows two triangles and congruent parts have been marked. Identify the postulate (SSS, SAS, ASA, AAS or HL) that can be used to prove that the triangles are congruent, or write "can't be done".

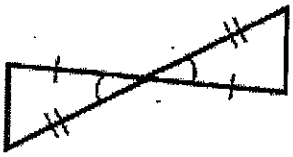
1.

2.

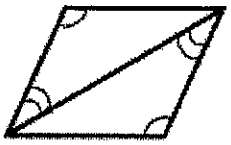
3.



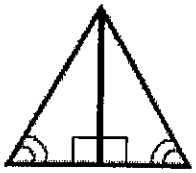
4.



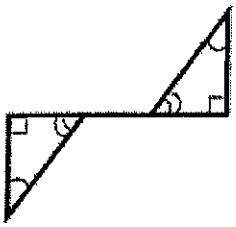
5.



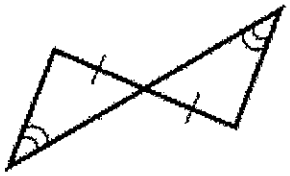
6.



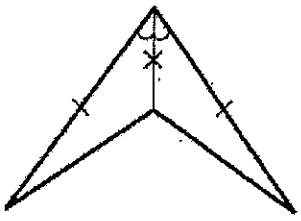
7.



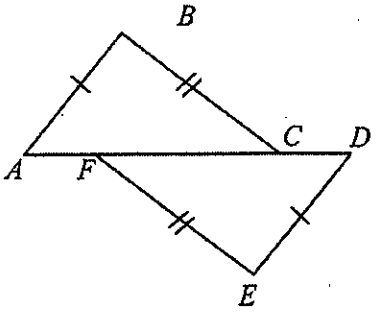
8.



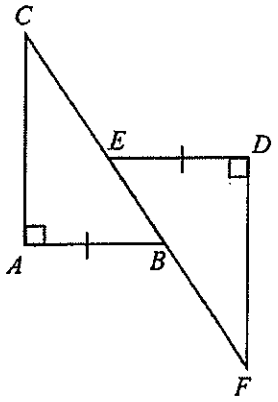
9.



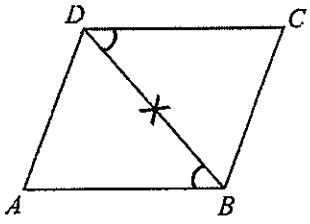
10. Name the sides that would have to be congruent to use the SSS congruence postulate.



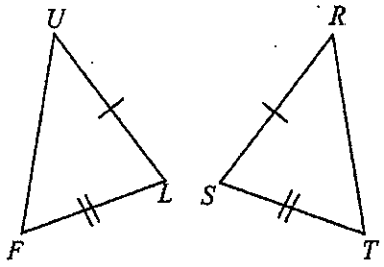
11. Name the sides that would have to be congruent to use the SAS congruence postulate.



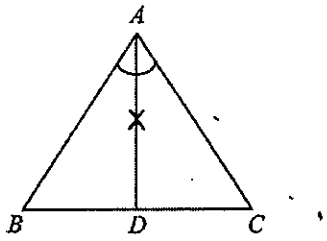
12. Name the angles that would have to be congruent to use the ASA congruence postulate.



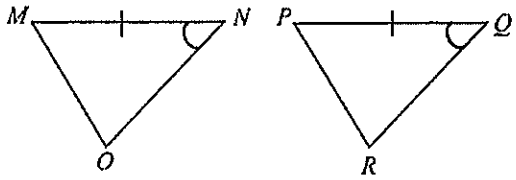
13. Name the angles that would have to be congruent to use the SAS congruence postulate.



14. Name the angles that would have to be congruent to use the AAS congruence postulate.



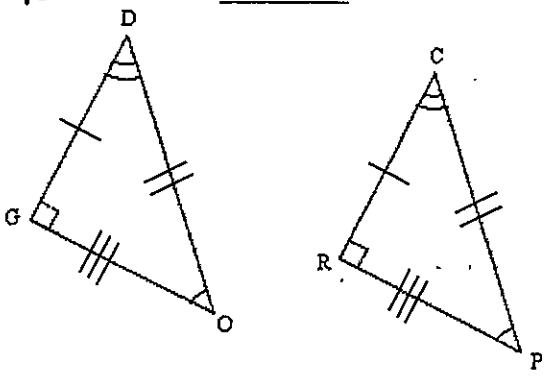
15. Name the sides that would have to be congruent to use the SAS congruence postulate.



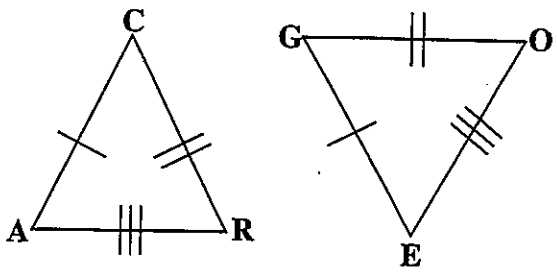
Triangle Congruence

Name the congruent triangles.

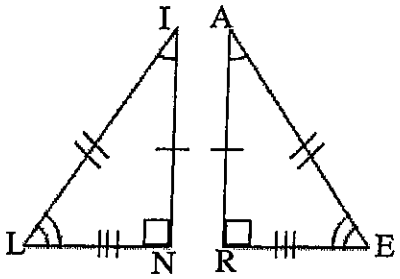
16. $\triangle OGD \cong \triangle$_____



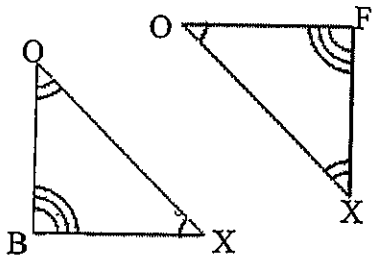
17. $\triangle RAC \cong \triangle$_____



18. $\triangle LIN \cong \triangle$_____

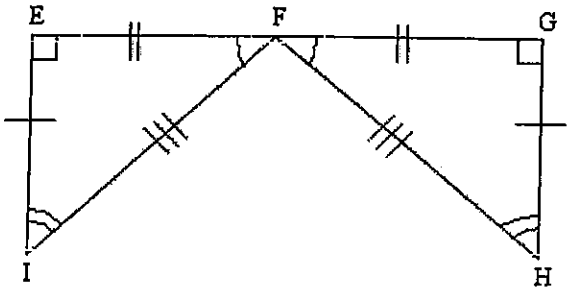


19. $\triangle FOX \cong \triangle$_____



II. Name the congruent triangle and the congruent parts..

20.



$\triangle FGH \cong \triangle$_____

$\angle EFI \cong \angle$_____ $\overline{FG} \cong$_____

$\angle G \cong \angle$_____ $\overline{GH} \cong$_____

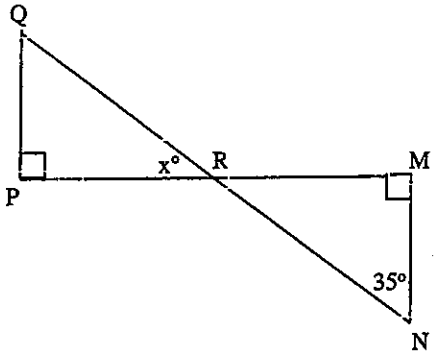
$\angle H \cong \angle$_____ $\overline{FH} \cong$_____

Use the congruency statement to fill in the corresponding congruent parts.

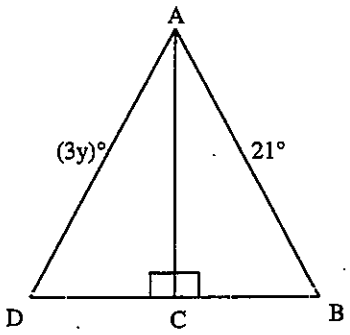
21. $\triangle EFI \cong \triangle HGI$ $\angle E \cong \angle$_____ $\overline{FE} \cong$_____ $\angle EFI \cong \angle$_____

$\overline{FI} \cong$_____ $\angle FIE \cong \angle$_____ $\overline{IE} \cong$_____

22. $\triangle PQR \cong \triangle MNR$. Find x.

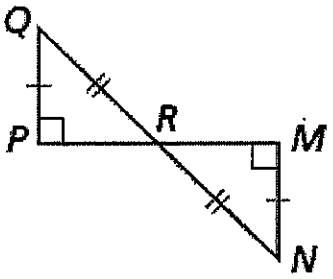


23. $\triangle ABC \cong \triangle ADC$. Find y.



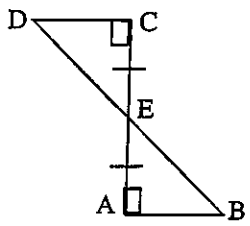
Proving Triangles Congruent

24. Given: $\angle P$ and $\angle M$ are right angles.
R is the midpoint of $\overline{PM}$.
$\overline{PQ} \cong \overline{MN}$, $\overline{QR} \cong \overline{NR}$
Prove: $\triangle PQR \cong \triangle MNR$



II. For each pair of triangles, tell: (a) Are they congruent? (b) Write the triangle congruency statement. (c) Give the postulate that makes them congruent.

1.

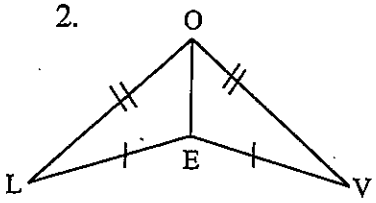


a. _____

b. Δ_____ ≅ Δ _____

c. _____

2.

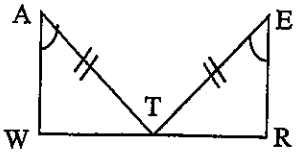


a. _____

b. Δ_____ ≅ Δ _____

c. _____

3. Given: T is the midpoint of $\overline{WR}$

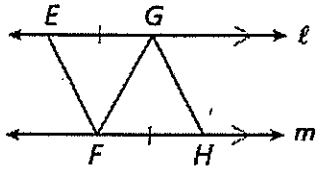


a. _____

b. Δ_____ ≅ Δ _____

c. _____

4.

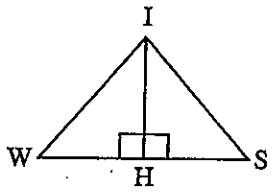


a. _____

b. Δ_____ ≅ Δ _____

c. _____

5. Given: $\overrightarrow{IH}$ bisects $\angle WIS$

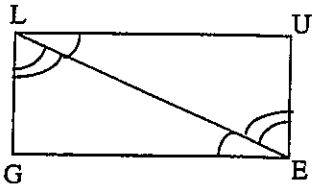


a. _____

b. Δ_____ ≅ Δ _____

c. _____

6.

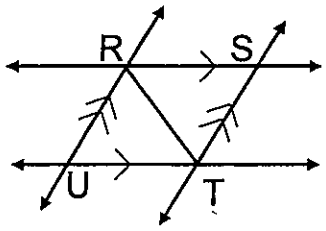


a. _____

b. Δ_____ ≅ Δ _____

c. _____

7.

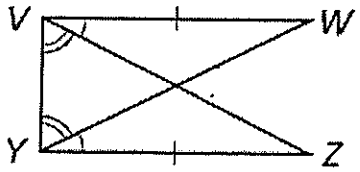


a. _____

b. Δ_____ ≅ Δ _____

c. _____

8.

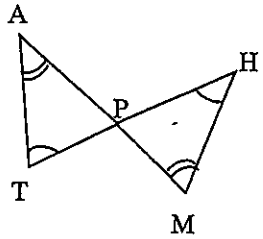


a. _____

b. Δ_____ ≅ Δ _____

c. _____

9.

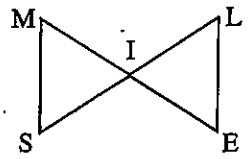


a. _____

b. Δ_____ ≅ Δ _____

c. _____

10. Given: I is the midpoint of $\overline{ME}$ and $\overline{SL}$

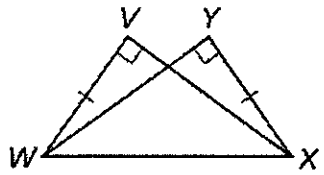


a. _____

b. Δ_____ ≅ Δ_____

c. _____

11.

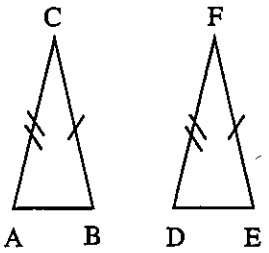


a. _____

b. Δ_____ ≅ Δ_____

c. _____

12.



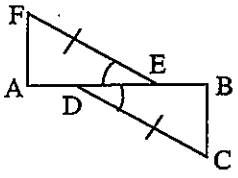
a. _____

b. Δ_____ ≅ Δ_____

c. _____

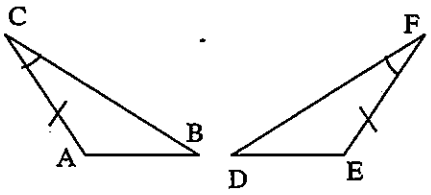
III. Using the given postulate, tell which parts of the pair of triangles should be shown congruent.

1. SAS



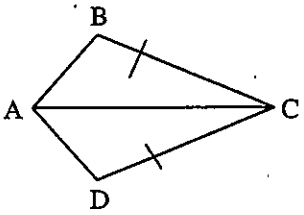
_____ ≅ _____

2. ASA



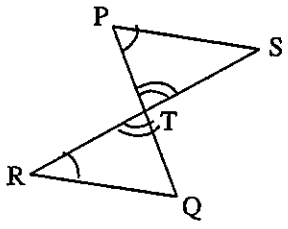
_____ ≅ _____

3. SSS



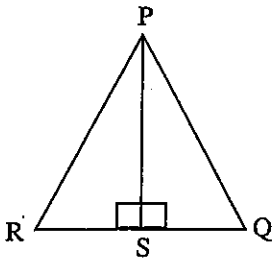
_____ ≅ _____

4. AAS



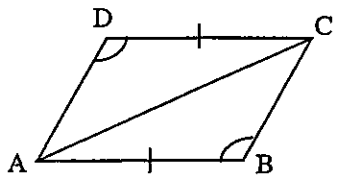
_____ ≅ _____

5. HL



_____ ≅ _____

6. ASA



_____ ≅ _____

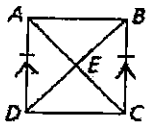
Name: _____

Triangle Proofs Worksheet

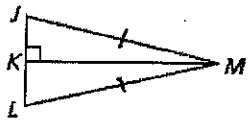
For each problem below, write a two-column proof on a separate piece of paper.

I. Proving Triangles Congruent:

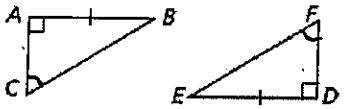
1. Use AAS to prove the triangles congruent.
Given: $\overline{AD} \parallel \overline{BC}$, $\overline{AD} \cong \overline{CB}$
Prove: $\triangle AED \cong \triangle CEB$



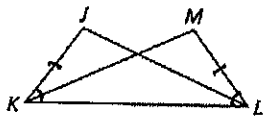
2. Given: $\overline{KM} \perp \overline{JL}$, $\overline{JM} \cong \overline{LM}$, $\angle JMK \cong \angle LMK$
Prove: $\triangle JKM \cong \triangle LKM$



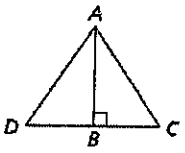
3. Given: $\overline{AB} \cong \overline{DE}$, $\angle C \cong \angle F$
Prove: $\triangle ABC \cong \triangle DEF$



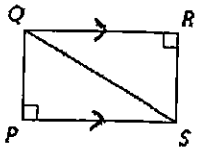
4. Given: $\overline{JK} \cong \overline{ML}$, $\angle JKL \cong \angle MLK$
Prove: $\triangle JKL \cong \triangle MLK$



5. Given: B is the midpoint of $\overline{DC}$. $\overline{AB} \perp \overline{DC}$
Prove: $\triangle ABD \cong \triangle ABC$

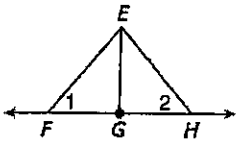


6. Use AAS to prove the triangles congruent.
Given: $\angle R$ and $\angle P$ are right angles.
$\overline{QR} \parallel \overline{SP}$
Prove: $\triangle QPS \cong \triangle SRQ$

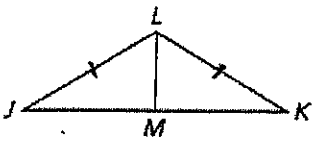


II. Using CPCTC

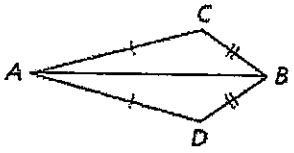
7. Given: G is the midpoint of $\overline{FH}$.
$\overline{EF} \cong \overline{EH}$
Prove: $\angle 1 \cong \angle 2$



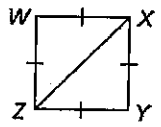
8. Given: $\overline{LM}$ bisects $\angle JLK$. $\overline{JL} \cong \overline{KL}$
Prove: M is the midpoint of $\overline{JK}$.



9. Given: $\overline{AC} \cong \overline{AD}$, $\overline{CB} \cong \overline{DB}$
Prove: $\overline{AB}$ bisects $\angle CAD$.



10. Given: $\overline{WX} \cong \overline{XY} \cong \overline{YZ} \cong \overline{ZW}$
Prove: $\angle W \cong \angle Y$



11. Given: M is the midpoint of $\overline{PQ}$ and $\overline{RS}$.
Prove: $\overline{QR} \cong \overline{PS}$