

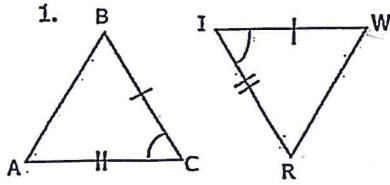
Unit 5: Triangle Congruence

Name _____

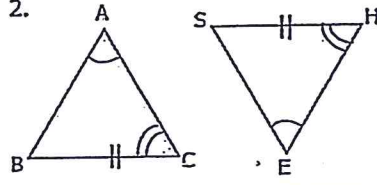
Proving Triangles Congruent: ASA, AAS, SAS, SSS

Per. _____

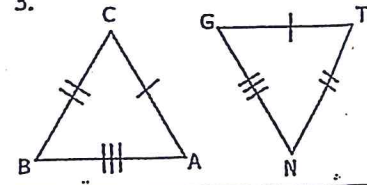
For each problem give the correct naming order of the congruent triangles. Write that name in order on the lines for the problem number (see box at bottom). Also, indicate which postulate or theorem is being used.



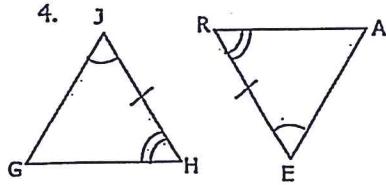
$\triangle ABC \cong \triangle$ _____ by _____



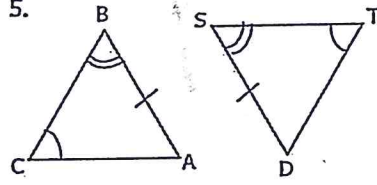
$\triangle ABC \cong \triangle$ _____ by _____



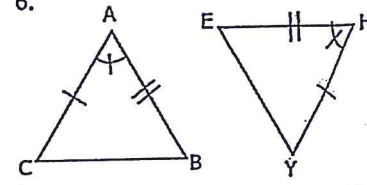
$\triangle ABC \cong \triangle$ _____ by _____



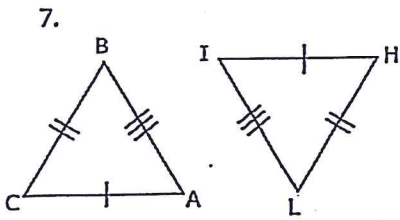
$\triangle GHJ \cong \triangle$ _____ by _____



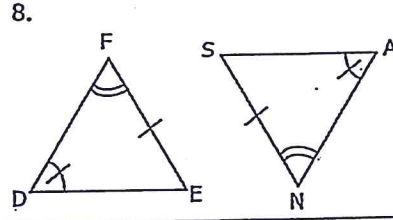
$\triangle ABC \cong \triangle$ _____ by _____



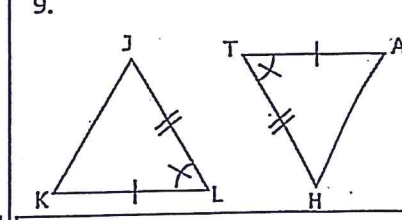
$\triangle ABC \cong \triangle$ _____ by _____



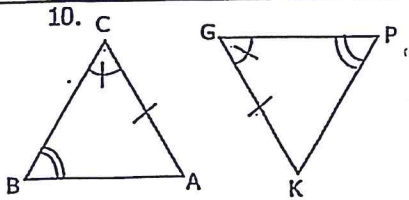
$\triangle ABC \cong \triangle$ _____ by _____



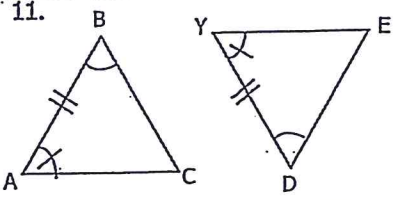
$\triangle DEF \cong \triangle$ _____ by _____



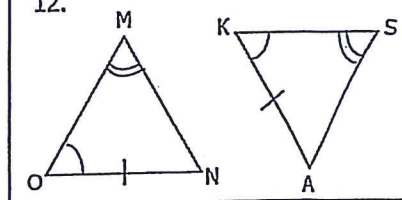
$\triangle JKL \cong \triangle$ _____ by _____



$\triangle ABC \cong \triangle$ _____ by _____



$\triangle ABC \cong \triangle$ _____ by _____

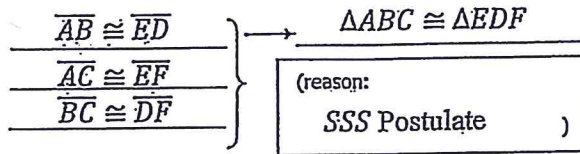
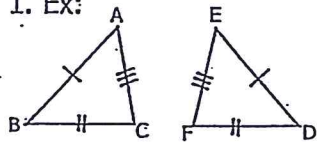


$\triangle MNO \cong \triangle$ _____ by _____

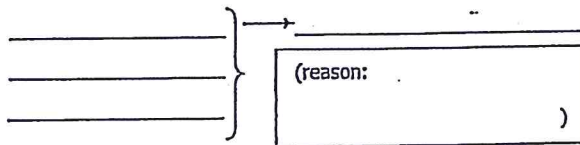
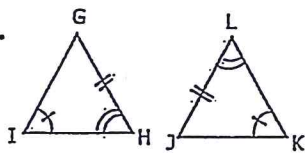
4 4 4 8 8 8 12 12 12 2 2 2 5 5 5 9 9 9 6
 6 6 10 10 10 1 1 1 3 3 7 7 7 11 11 11
 (When you are done with the puzzle, there are: 3 SAS, 5 AAS, 2 ASA, and 2 SSS instances.)

For each figure, which triangles are congruent? Write the "proof parts" accurately that would lead to showing the congruence and give the correct reason why the triangles are congruent.

1. Ex:

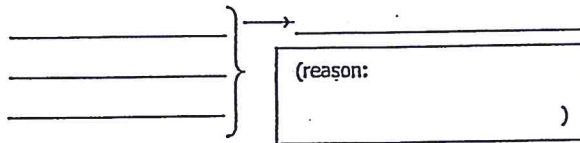
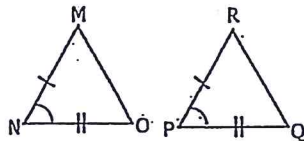


2.

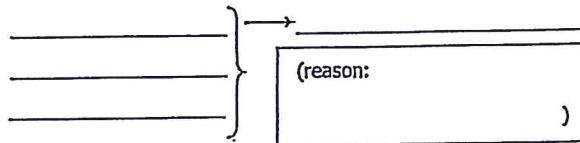
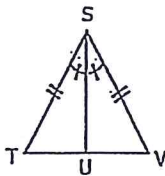


← congruence statement
 ← Choose from SSS, SAS, ASA Post. SAA Theorem

3.

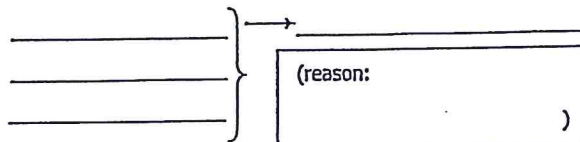
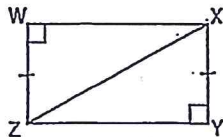


4.

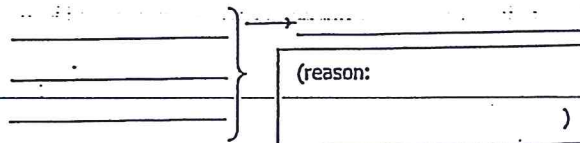
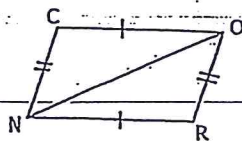


is $\angle T \cong \angle V$?
 Why?

5.



6.



is $\angle CON \cong \angle RON$?
 Why or why not?

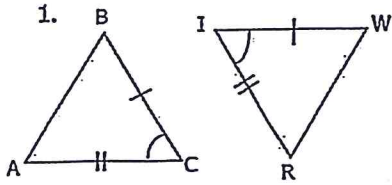
Unit 5: Triangle Congruence

Name _____

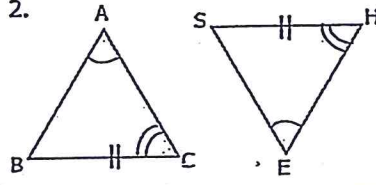
Proving Triangles Congruent: ASA, AAS, SAS, SSS

Per. _____

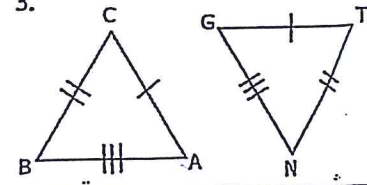
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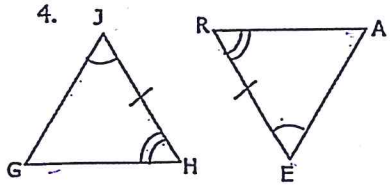
$\triangle ABC \cong \triangle RWI$ by SAS



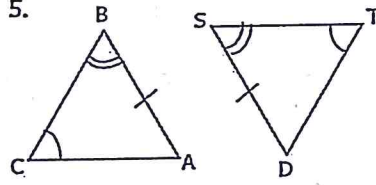
$\triangle ABC \cong \triangle ESH$ by SAA



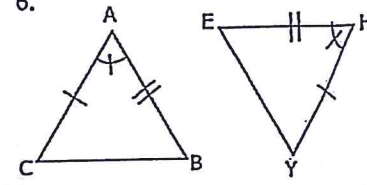
$\triangle ABC \cong \triangle GNT$ by SSS



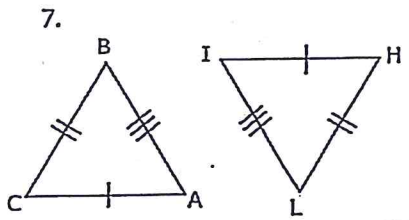
$\triangle GHJ \cong \triangle ARE$ by ASA



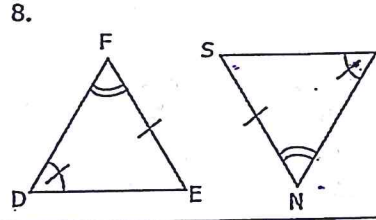
$\triangle ABC \cong \triangle DST$ by SAA



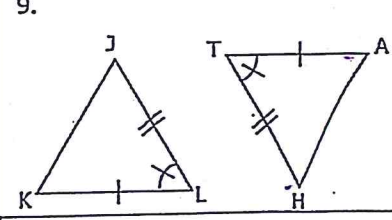
$\triangle ABC \cong \triangle HEY$ by SAS



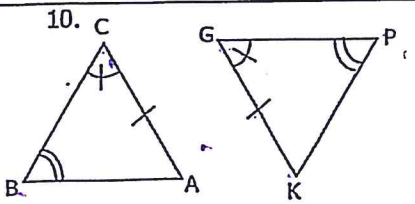
$\triangle ABC \cong \triangle ILH$ by SSS



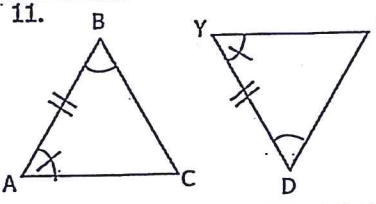
$\triangle DEF \cong \triangle ASN$ by SAA



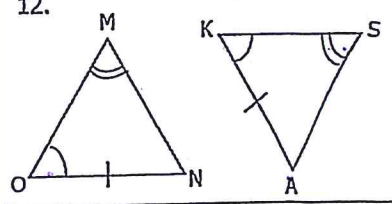
$\triangle JKL \cong \triangle HAT$ by SAS



$\triangle ABC \cong \triangle KAG$ by SAA



$\triangle ABC \cong \triangle YDE$ by ASA



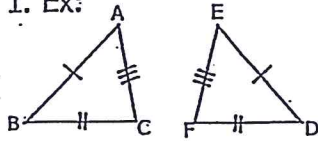
$\triangle MNO \cong \triangle SAK$ by SAA

4	4	4	8	8	O	8	12	N	12	12	2	S	2	2	E	5	I	5	5	9	9	9	I	6
6	6	10	E	E	10	10	1	O	1	1	3	N	U	3	3	7	7	T	7	E	11	11	I	11

(When you are done with the puzzle, there are: 3 SAS, 5 AAS, 2 ASA, and 2 SSS instances.)

For each figure, which triangles are congruent? Write the "proof parts" accurately that would lead to showing the congruence and give the correct reason why the triangles are congruent.

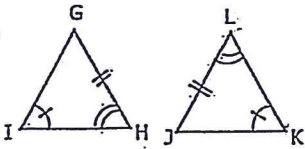
1. Ex:



$$\begin{array}{l} \overline{AB} \cong \overline{ED} \\ \overline{AC} \cong \overline{EF} \\ \overline{BC} \cong \overline{DF} \end{array} \left. \vphantom{\begin{array}{l} \overline{AB} \cong \overline{ED} \\ \overline{AC} \cong \overline{EF} \\ \overline{BC} \cong \overline{DF} \end{array}} \right\} \rightarrow \Delta ABC \cong \Delta EDF$$

(reason: SSS Postulate)

2.

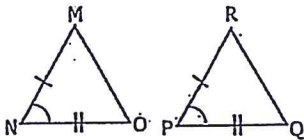


$$\begin{array}{l} \angle I = \angle K \\ \angle H = \angle L \\ \overline{HI} \cong \overline{JK} \end{array} \left. \vphantom{\begin{array}{l} \angle I = \angle K \\ \angle H = \angle L \\ \overline{HI} \cong \overline{JK} \end{array}} \right\} \rightarrow \Delta IGH \cong \Delta KJL$$

(reason: SAA Post)

← congruence statement
← Choose from SSS, SAS, ASA Post. SAA Theorem

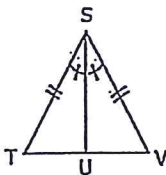
3.



$$\begin{array}{l} \overline{MN} \cong \overline{RP} \\ \overline{NO} \cong \overline{PQ} \\ \angle N = \angle P \end{array} \left. \vphantom{\begin{array}{l} \overline{MN} \cong \overline{RP} \\ \overline{NO} \cong \overline{PQ} \\ \angle N = \angle P \end{array}} \right\} \rightarrow \Delta MNO \cong \Delta RPQ$$

(reason: SAS Post)

4.

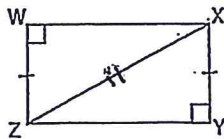


$$\begin{array}{l} \angle TSU \cong \angle VSU \\ \overline{ST} \cong \overline{SV} \\ \overline{SV} \cong \overline{SU} \end{array} \left. \vphantom{\begin{array}{l} \angle TSU \cong \angle VSU \\ \overline{ST} \cong \overline{SV} \\ \overline{SV} \cong \overline{SU} \end{array}} \right\} \rightarrow \Delta STU \cong \Delta SVU$$

(reason: SAS)

is $\angle T \cong \angle V$? YES
Why? CPCTC

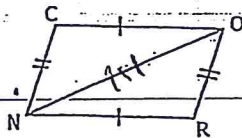
5.



$$\overline{WZ} \cong \overline{XY} \left. \vphantom{\overline{WZ} \cong \overline{XY}} \right\} \rightarrow \Delta WZC \cong \Delta XYC$$

(reason: ASA)

6.



$$\begin{array}{l} \overline{CO} \cong \overline{RO} \\ \overline{CN} \cong \overline{RO} \\ \overline{ON} \cong \overline{NO} \end{array} \left. \vphantom{\begin{array}{l} \overline{CO} \cong \overline{RO} \\ \overline{CN} \cong \overline{RO} \\ \overline{ON} \cong \overline{NO} \end{array}} \right\} \rightarrow \Delta CON \cong \Delta RON$$

(reason: SSS)

is $\angle CON \cong \angle RON$? NO
Why or why not? not matching parts