

Congruent Triangles

- Corresponding sides are congruent, meaning equal in length
- Corresponding angles are congruent, meaning equal in measure

Side - Side - Side (SSS) Congruence Postulate

three sides of one triangle are congruent to three sides of a second triangle

$\triangle ABC \cong \triangle KEL$

The diagram illustrates the Side-Side-Side (SSS) Congruence Postulate. It shows two triangles, $\triangle ABC$ and $\triangle KEL$, with their corresponding sides marked as congruent with tick marks. Below the text, two triangles are shown with their sides colored (red and blue) and dashed green lines indicating the congruence of the sides.

Side - Angle - Side (SAS) Congruence Postulate

two sides and the included angle of one triangle are congruent to two sides and the included angle of a second triangle

The diagram illustrates the SAS Congruence Postulate. At the top, a box contains the title "Side - Angle - Side (SAS) Congruence Postulate" and the text "two sides and the included angle of one triangle are congruent to two sides and the included angle of a second triangle". To the right of the text are two small triangles with two sides and an included angle marked as congruent. Below this, two larger triangles are shown. The left triangle has a blue side, a red side, and an included angle marked with a blue arc. The right triangle has a blue side, a red side, and an included angle marked with a blue arc. A dashed green line is drawn from the top vertex of the right triangle to the bottom vertex, indicating the construction of the second side.

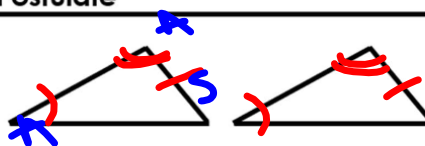
Angle - Side - Angle (ASA) Congruence Postulate

two angles and the included side of one triangle are congruent to two angles and the included side of a second triangle

The diagram illustrates the ASA Congruence Postulate. It features two triangles with two angles and the included side marked as congruent. The included side is highlighted in red. Dashed green lines indicate the construction of the third side.

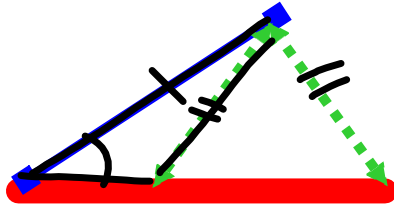
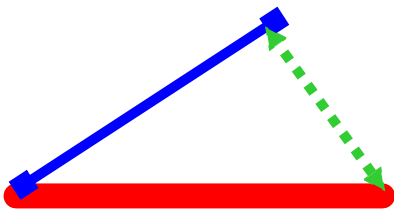
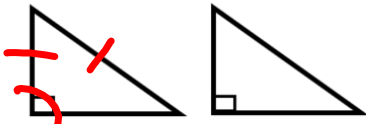
Angle - Angle - Side (AAS) Congruence Postulate

two angles and a non-included side of one triangle are congruent to two angles and a non-included side of a second triangle

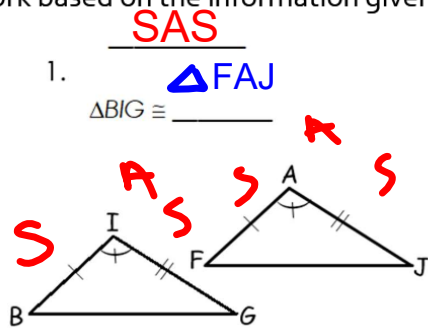


Hypotenuse - Leg (HL) Congruence Postulate

In a right triangle, the hypotenuse and one leg is congruent to the hypotenuse and leg of another right triangle



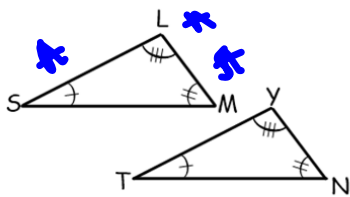
Determine if each pair of triangles is congruent by SSS, SAS, ASA, or AAS. If they are, complete the congruence statement too. If none of these methods work based on the information given, write "none".



Determine if each pair of triangles is congruent by SSS, SAS, ASA, or AAS. If they are, complete the congruence statement too. If none of these methods work based on the information given, write "none".

none

2. $\triangle SML \cong \triangle TNY$

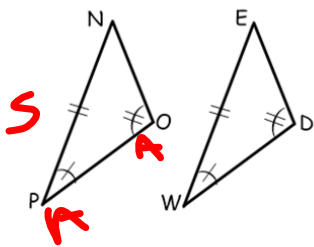


Determine if each pair of triangles is congruent by SSS, SAS, ASA, or AAS. If they are, complete the congruence statement too. If none of these methods work based on the information given, write "none".

AAS

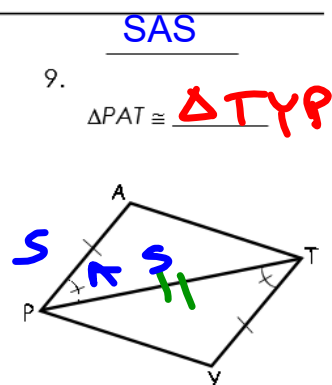
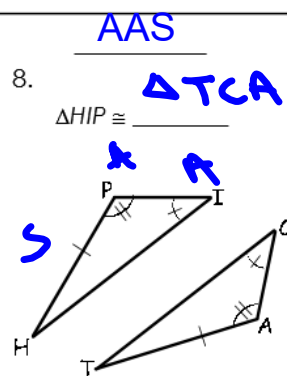
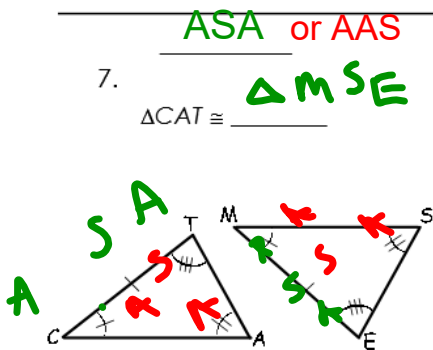
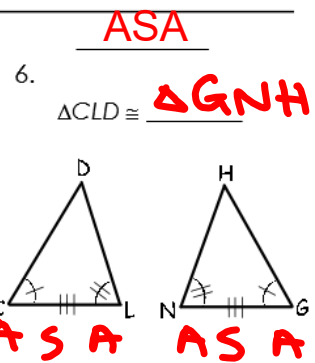
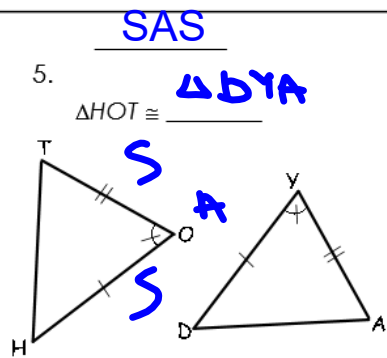
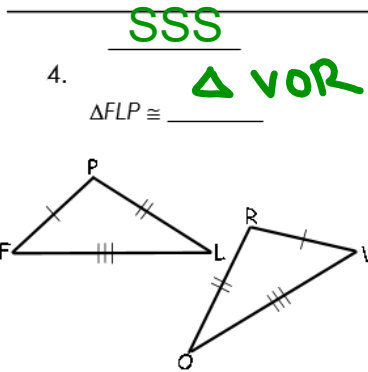
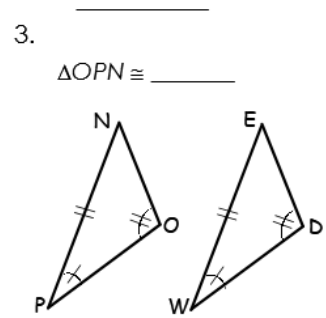
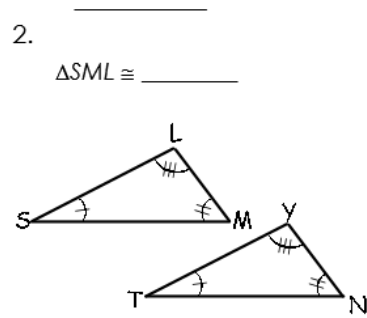
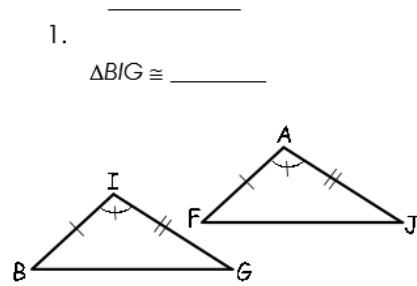
3.

$\triangle OPN \cong$ **$\triangle DWE$**



Practice

In each problem, determine if each pair of triangles is congruent by SSS, SAS, ASA, or AAS. If they are, complete the congruence statement too. If none of these methods work based on the information given, write "none". If congruent, finish the congruence statement.



Geometry

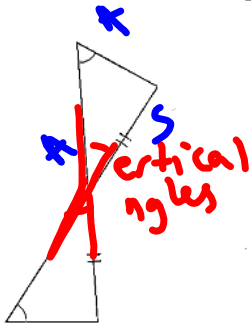
Name _____

Triangle Congruence: SSS, SAS, ASA, AAS, HL

Date _____ Period _____

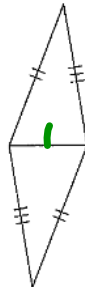
Determine if the two triangles are congruent. If they are, state how you know.

1)



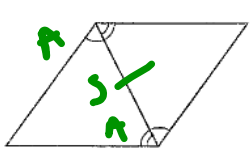
AAS

2)



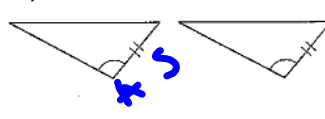
SSS

3)



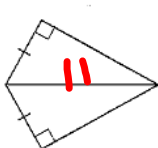
ASA

4)



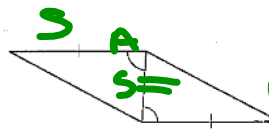
not congruent

5)



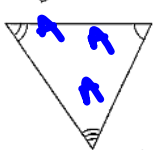
HL

6)



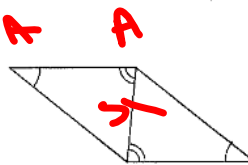
SAS

7)



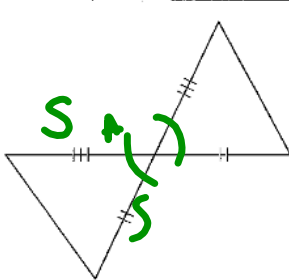
not congruent

8)



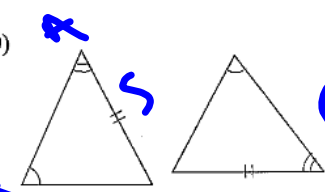
AAS

9)



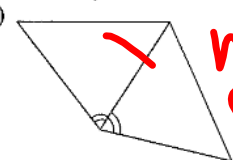
SAS

10)



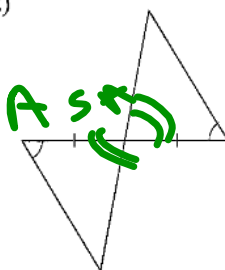
AAS

11)



not congruent

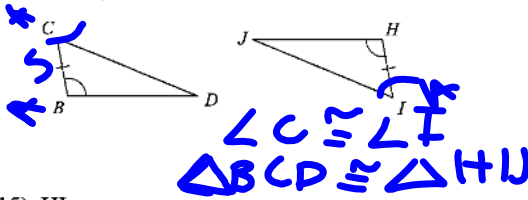
12)



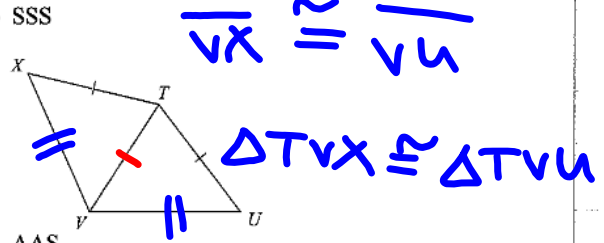
ASA

State what additional information is required in order to know that the triangles are congruent for the reason given.

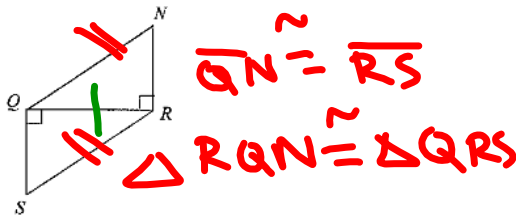
13) ASA



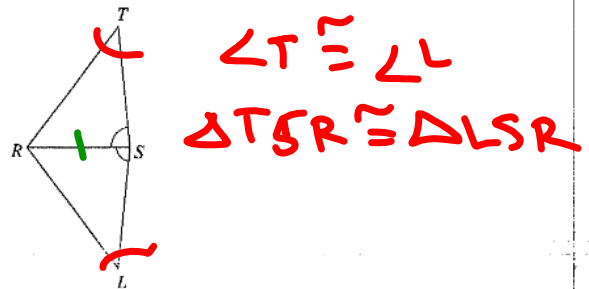
14) SSS



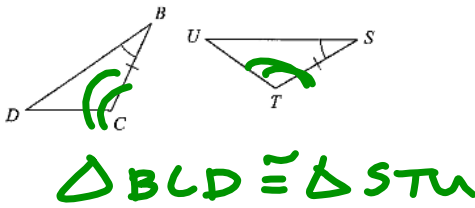
15) HL



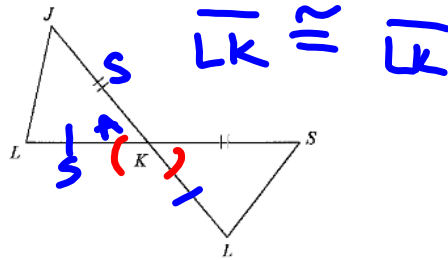
16) AAS



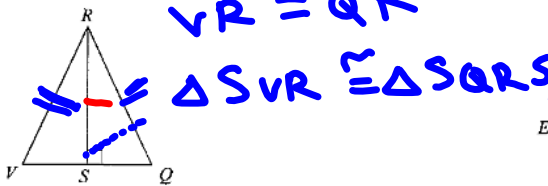
17) ASA



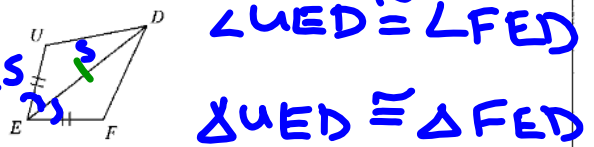
18) SAS



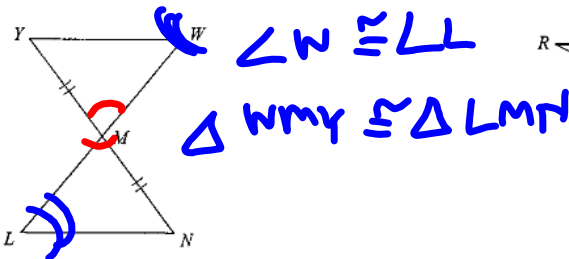
19) HL



20) SAS



21) AAS



22) HL

