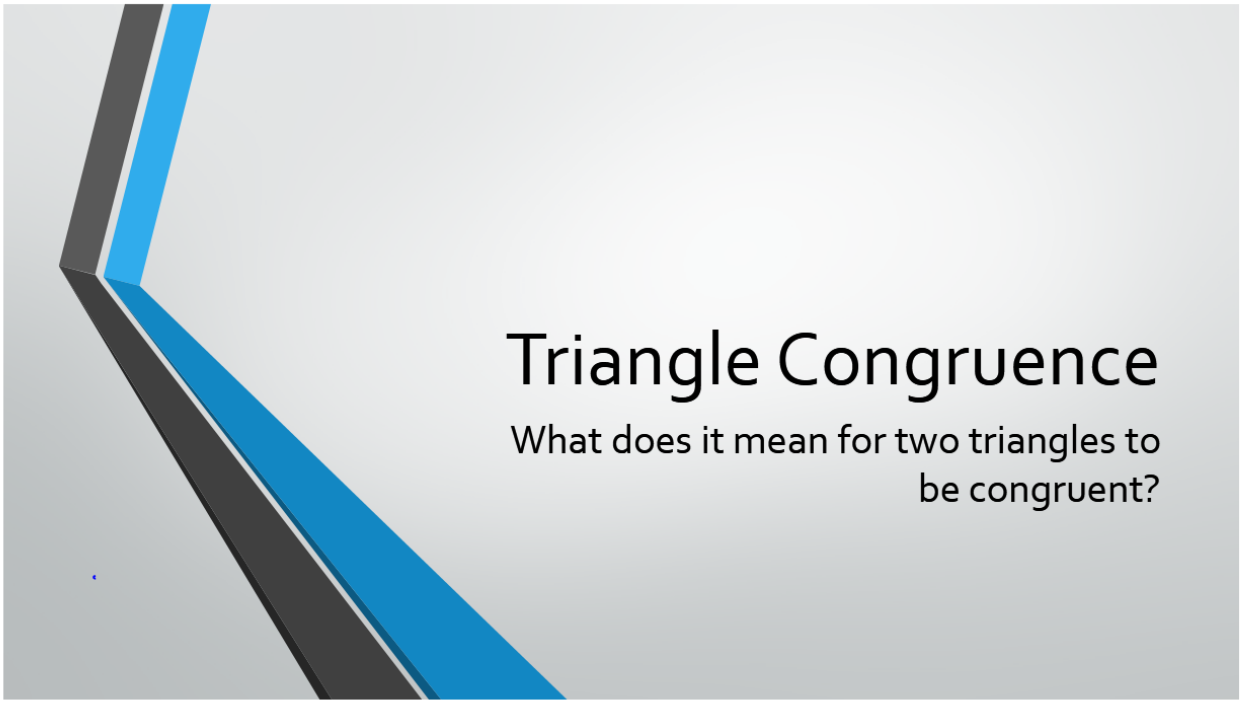
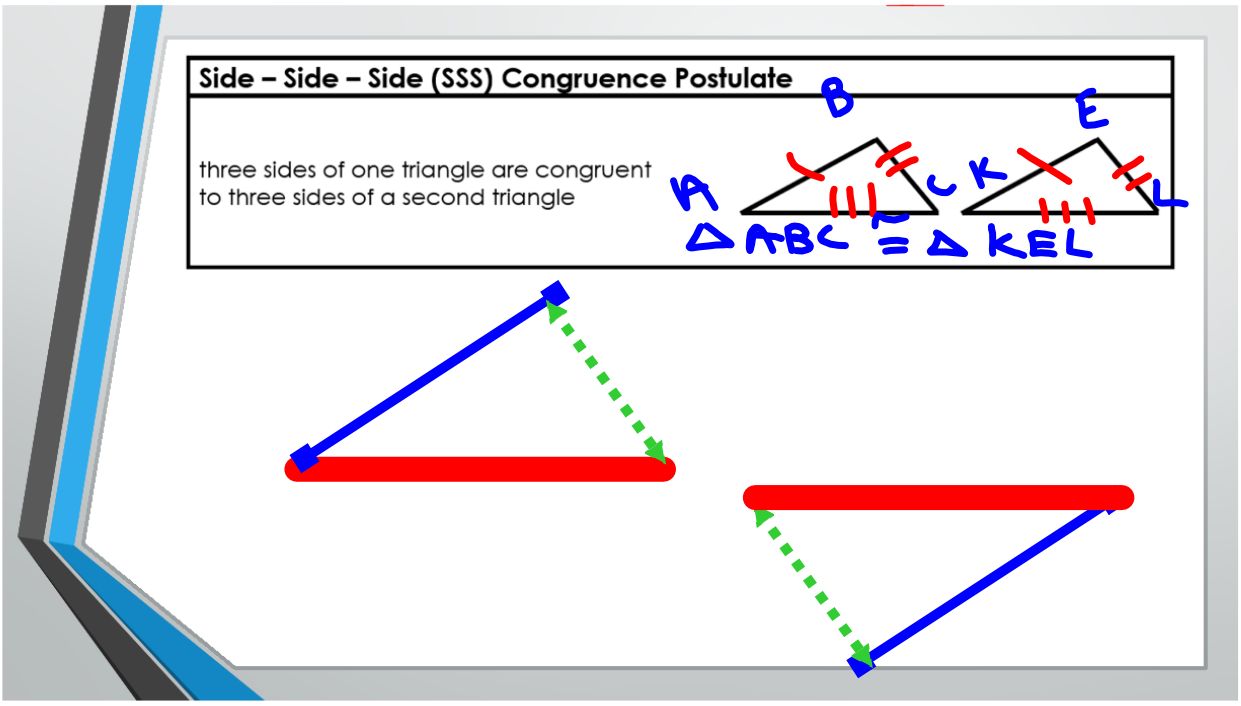
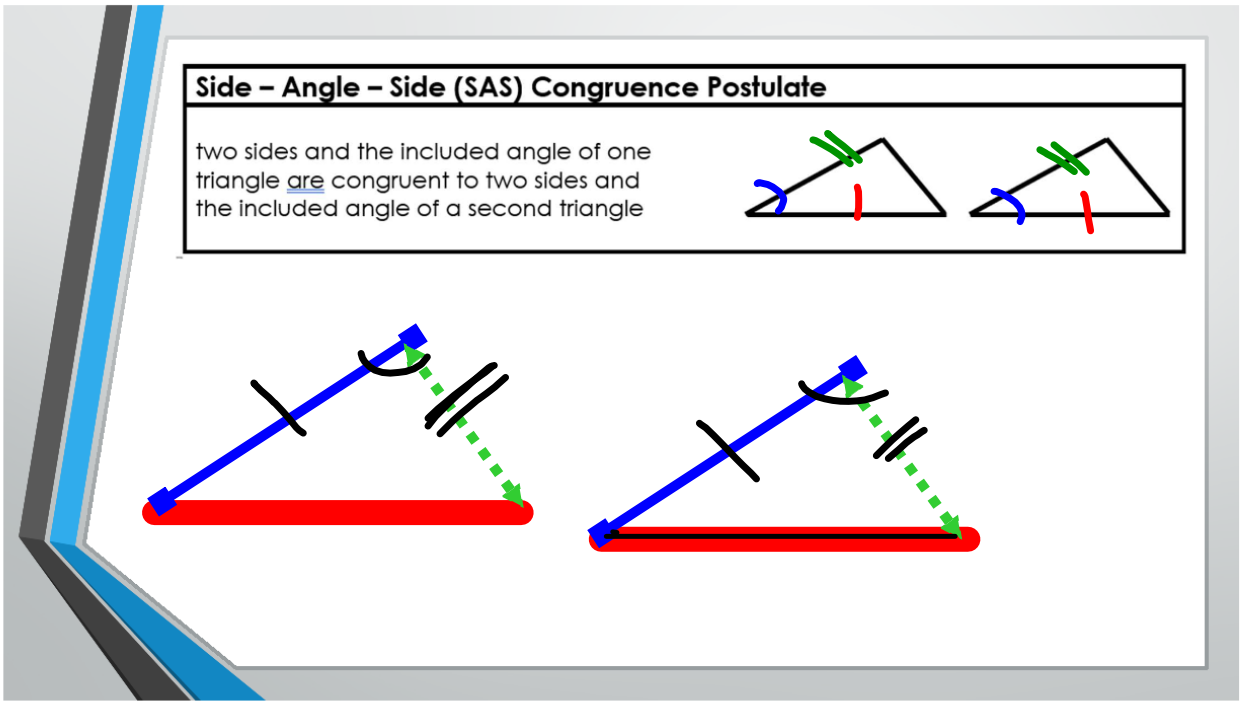
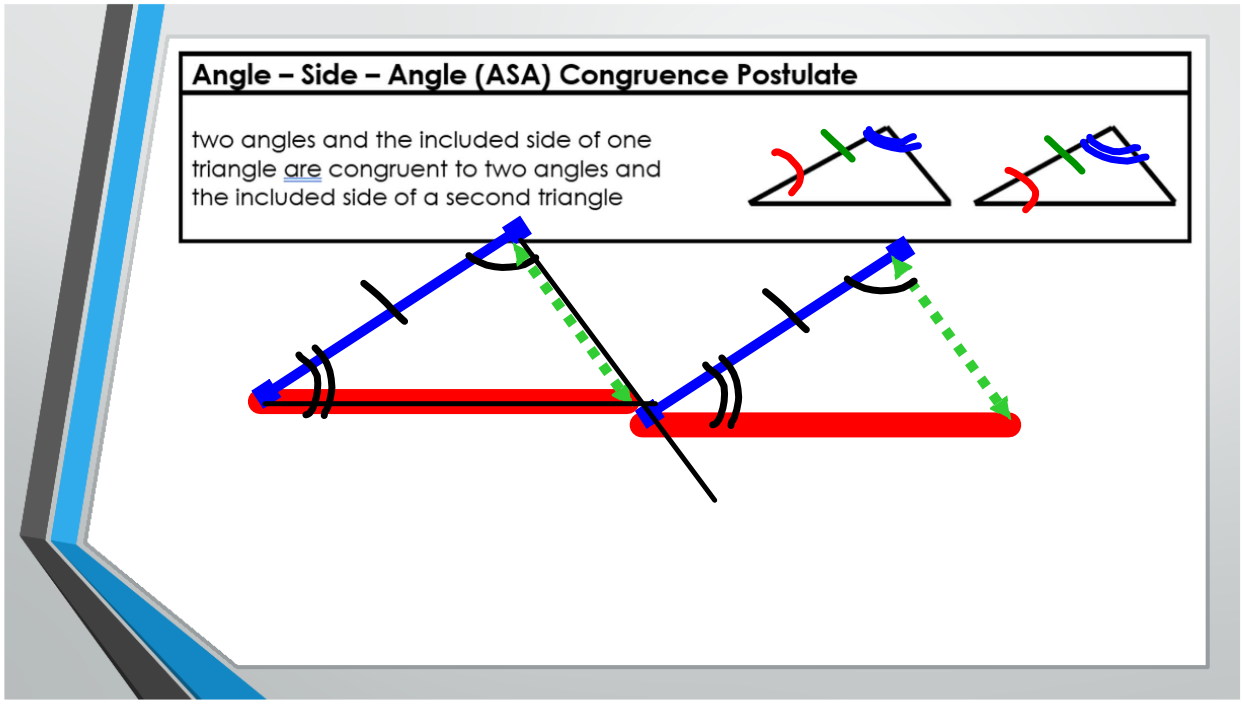

Triangle Congruence
What does it mean for two triangles to be congruent?

Congruent Triangles

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

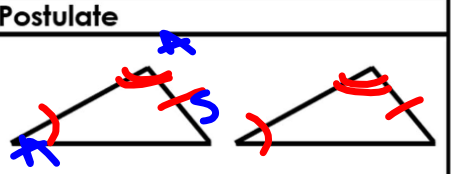

Side – Side – Side (SSS) Congruence Postulate
three sides of one triangle are congruent to three sides of a second triangle
B
E
A
C
K
L
ΔABC ≅ ΔKEL


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


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

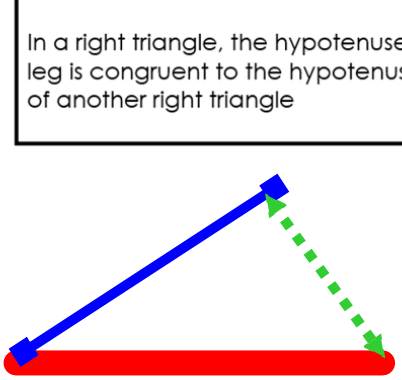
Angle – Angle – Side (AAS) Congruence Postulate

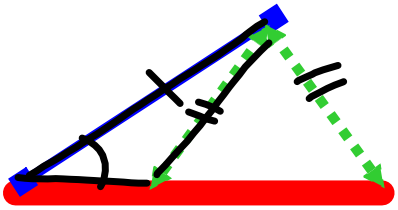
two angles and a non-included side of one triangle are congruent to two angles and a non-included side of a second triangle



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

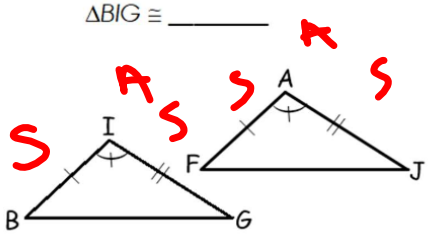




Determine if each pair of triangles is congruent by SSS, SAS, ASA, or AAS. If they are, complete the congruence statement too. If none of these methods work based on the information given, write "none".

1. SAS

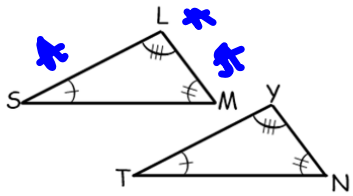
$\Delta BIG \cong$ ΔFAJ



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".

2. none

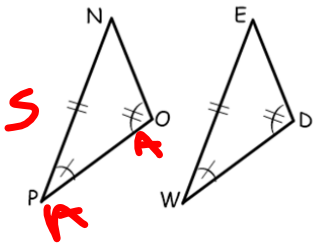
$\Delta SML \cong \Delta TNY$



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. $\triangle OPN \cong$ $\triangle DWE$

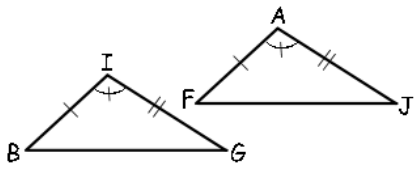


Geometry 1- Congruence & Proofs Notes and Practice

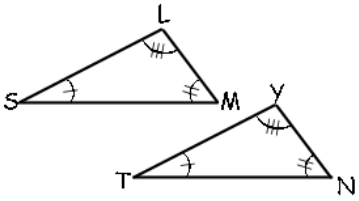
Practice

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.

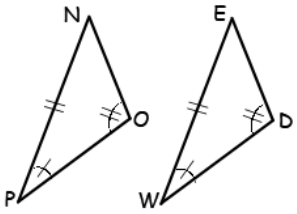
1. $\Delta BIG \cong$ _____



2. $\Delta SML \cong$ _____

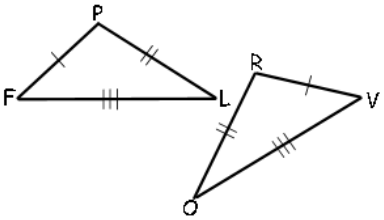


3. $\Delta OPN \cong$ _____



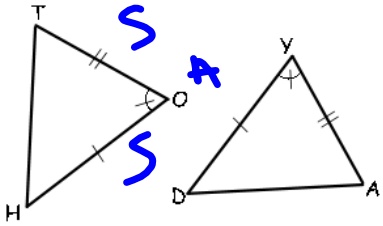
SSS

4. $\Delta FLP \cong$ Δ VOR



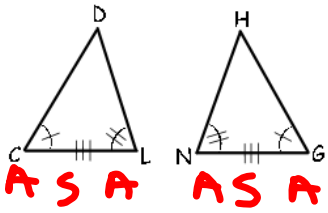
SAS

5. $\Delta HOT \cong$ ΔDYA



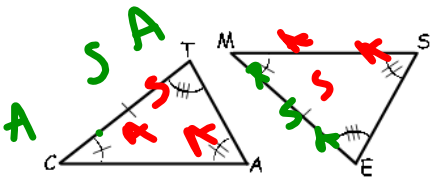
ASA

6. $\Delta CLD \cong$ ΔGNH



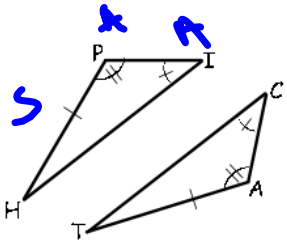
ASA or AAS

7. $\Delta CAT \cong$ ΔMSE



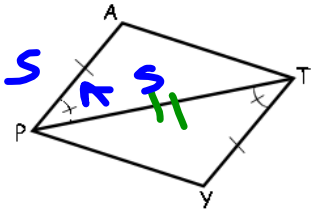
AAS

8. $\Delta HIP \cong$ ΔTCA



SAS

9. $\Delta PAT \cong$ ΔTYP

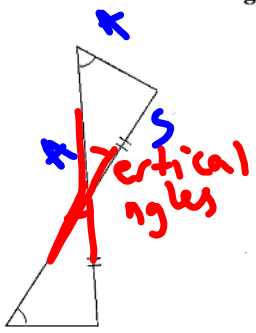


Geometry Name_____

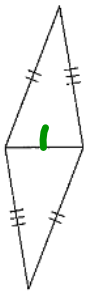
Triangle Congurence: SSS, SAS, ASA, AAS, HL Date_____ Period____

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

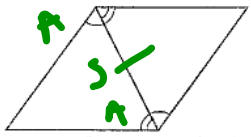
1) AAS



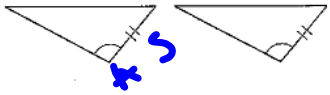
2) SSS



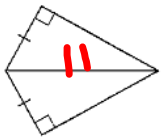
3) ASA



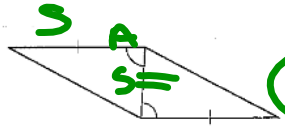
4) Not congruent



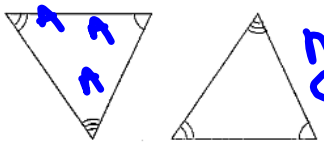
5) HL



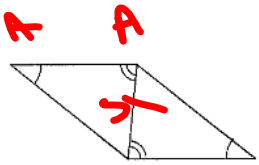
6) SAS



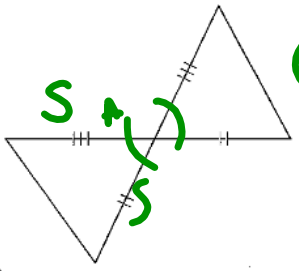
7) Not Congruent



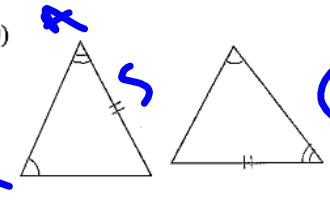
8) AAS



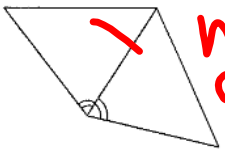
9) SAS



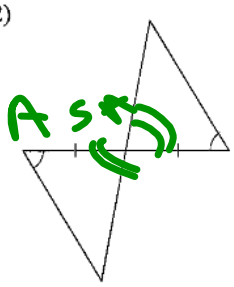
10) AAS



11) Not Congruent



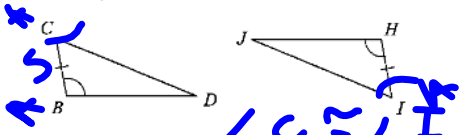
12) ASA



43

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

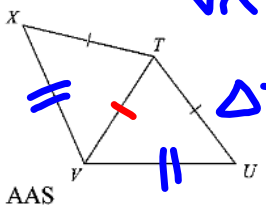
13) ASA



$\angle C \cong \angle I$

$\triangle BCD \cong \triangle HIJ$

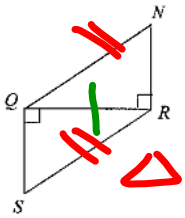
14) SSS



$\overline{VX} \cong \overline{VU}$

$\triangle TVX \cong \triangle TVU$

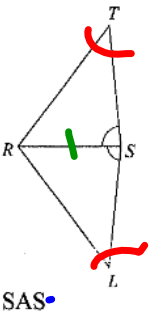
15) HL



$\overline{QN} \cong \overline{RS}$

$\triangle RQN \cong \triangle QRS$

16) AAS

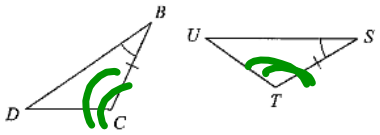


$\angle T \cong \angle L$

$\triangle TSR \cong \triangle LSR$

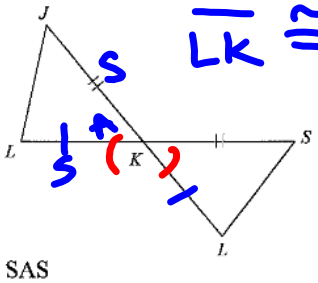
$\angle C \cong \angle T$

17) ASA



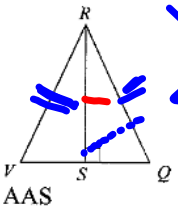
$\triangle BCD \cong \triangle STU$

18) SAS



$\overline{LK} \cong \overline{LK}$

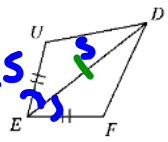
19) HL



$\overline{VR} \cong \overline{QR}$

$\triangle SVR \cong \triangle SQR$

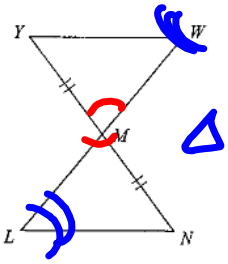
20) SAS



$\angle UED \cong \angle FED$

$\triangle UED \cong \triangle FED$

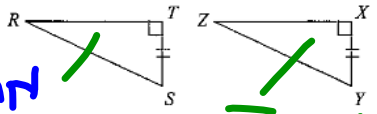
21) AAS



$\angle W \cong \angle L$

$\triangle WMY \cong \triangle LMN$

22) HL



$\overline{RS} \cong \overline{ZY}$

$\triangle RST \cong \triangle ZYX$