List all corresponding sides by looking at just the letters.

① $\triangle ABC \cong \triangle DEF$

$\overline{AB} \cong \overline{DE}$

$\overline{AC} \cong \overline{DF}$

$\overline{BC} \cong \overline{EF}$

② $\triangle WHS \cong \triangle XYZ$

$\overline{WH} \cong \overline{XY}$

$\overline{WS} \cong \overline{XZ}$

$\overline{HS} \cong \overline{YZ}$

List all corresponding angles by looking at just the letters.

③ $\triangle ABC \cong \triangle DEF$

$\angle A \cong \angle D$

$\angle B \cong \angle E$

$\angle C \cong \angle F$

④ $\triangle WHS \cong \triangle XYZ$

$\angle W \cong \angle X$

$\angle H \cong \angle Y$

$\angle S \cong \angle Z$

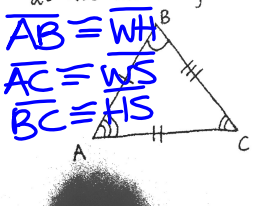
⑤ In $\triangle ABC \cong \triangle XYZ$, what side is congruent to side $\overline{AC}$?

$\overline{XZ}$

⑥ In $\triangle LMN \cong \triangle DEF$, what side is congruent $\overline{NL}$?

$\overline{FD}$

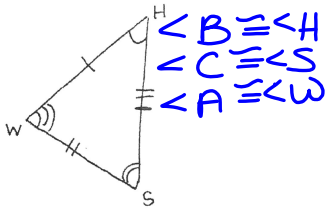
⑦ Name the congruent sides and angles by looking at the markings.



$\overline{AB} \cong \overline{WH}$

$\overline{AC} \cong \overline{WS}$

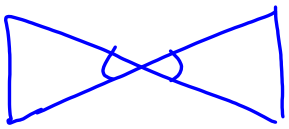
$\overline{BC} \cong \overline{HS}$



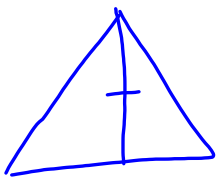
$\angle B \cong \angle H$

$\angle C \cong \angle S$

$\angle A \cong \angle W$

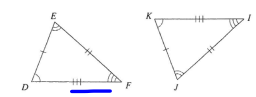


Vertical Angles are congruent



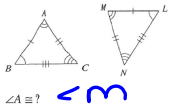
Reflexive Property if two triangles share a side it's congruent to itself

1) $\triangle DEF \cong \triangle KJI$



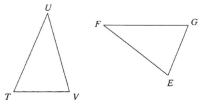
$\overline{FD} \cong ?$ $\overline{IK}$

2) $\overline{BAC} \cong \triangle LMN$



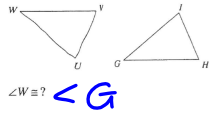
$\angle A \cong ?$ $\angle M$

3) $\triangle TUV \cong \triangle GFE$



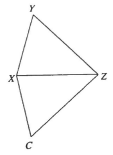
$\angle U \cong ?$ $\angle F$

4) $\triangle WVU \cong \triangle GHI$



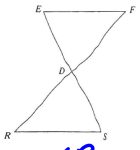
$\angle W \cong ?$ $\angle G$

5) $\Delta ZXY \cong \Delta ZXC$



$\angle Y \cong ?$ $\angle C$

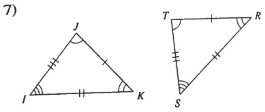
6) $\Delta DEF \cong \Delta DSR$



$\angle F \cong ?$ $\angle R$

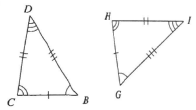
Write a statement that indicates that the triangles in each pair are congruent.

7)



$\Delta KIJ \cong \Delta RST$

8)

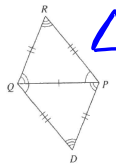


$\Delta DCB \cong \Delta IHG$

$\Delta BDC \cong \Delta GIH$

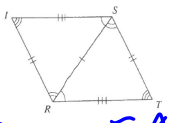
-1-

9)



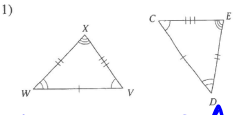
$\Delta RQP \cong \Delta DPQ$

10)



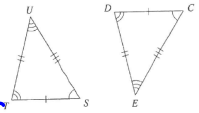
$\Delta ISR \cong \Delta TRS$

11)



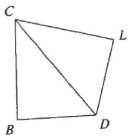
$\Delta WXV \cong \Delta DEC$

12)

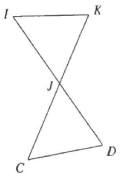


$\Delta UST \cong \Delta ECD$

17) $\Delta CDB \cong \Delta CDL$

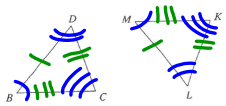


18) $\Delta JIK \cong \Delta JCD$

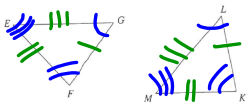


Mark the angles and sides of each pair of triangles to indicate that they are congruent.

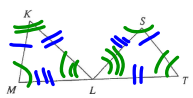
13) $\Delta BDC \cong \Delta MLK$



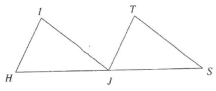
14) $\Delta GFE \cong \Delta LKM$



15) $\Delta MKL \cong \Delta STL$



16) $\Delta HIJ \cong \Delta JTS$

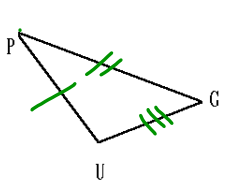


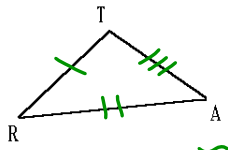
Proving Triangles Congruent

5 Ways to PROVE 2 triangles are congruent

1) Side-Side-Side (SSS) Congruence Postulate

If 3 sides of one triangle are ≅ to 3 sides of another triangle, then the 2 triangles are ≅.





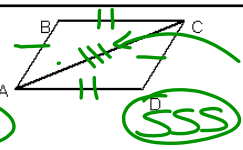
△PUG ≅ △RTA

Given: $\overline{PU} \cong \overline{RT}$, $\overline{PG} \cong \overline{RA}$, $\overline{UG} \cong \overline{AT}$

Congruence Statement:

**2nd △ name based on first!!!

1) Given: $\overline{AB} \cong \overline{CD}$, $\overline{BC} \cong \overline{AD}$



reflexive property

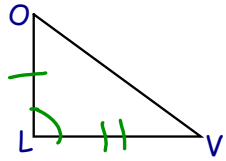
SSS

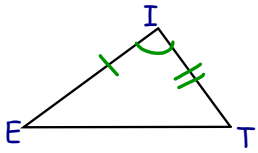
Prove: $\triangle ABC \cong \triangle CDA$

Statement	Reason
$\overline{AB} \cong \overline{CD}$	Given
$\overline{BC} \cong \overline{AD}$	Given
$\overline{AC} \cong \overline{AC}$	Reflexive property
$\triangle ABC \cong \triangle CDA$	SSS

2) Side-Angle-Side (SAS) Congruence Postulate:

If 2 sides & the included angle of one △ are ≅ to 2 sides & the included angle of another △, then the 2 △'s are ≅.





Given: $\overline{LL} \cong \overline{LI}$, $\overline{LO} \cong \overline{IE}$ and $\overline{IT} \cong \overline{LV}$

△LVO ≅ △ITE

Congruence Statement:

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

1) SAS

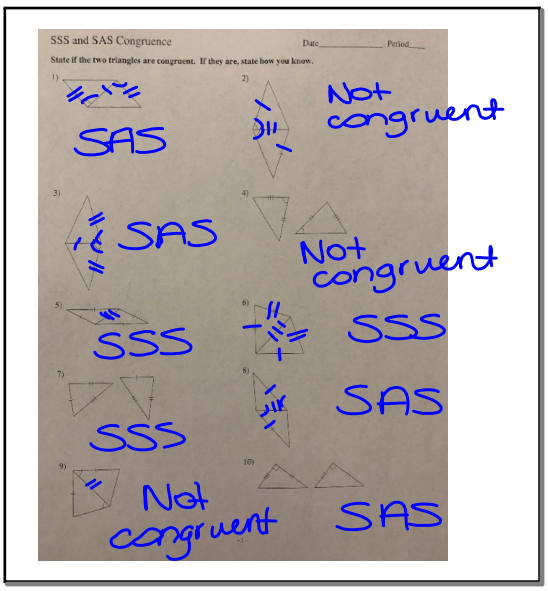
2) SSS

3) Not congruent

4) SSS

5) SAS

6) Not congruent



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

1) SSS

2) SAS

3) SSS

4) SAS

5) Not congruent.

6) SSS

7) SAS

8) SSS

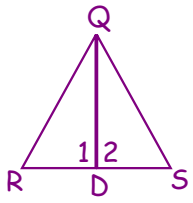
9) Not congruent

10) Not congruent

Given: D is the midpoint of $\overline{RS}$

$m\angle 1 = m\angle 2$

Prove: $\triangle QRD \cong \triangle QSD$



Statement	Reason

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

1) SAS

2) Not congruent

3) SSS

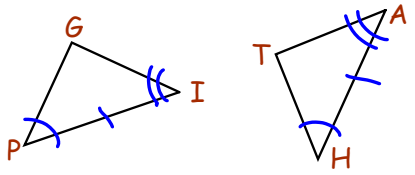
4) SAS

5) SSS

6) Not congruent

3) Angle-Side-Angle (ASA) Congruence Postulate:

If 2 angles & the included side of one $\triangle$ are $\cong$ to 2 angles & the included side of another $\triangle$, then the 2 $\triangle$'s are $\cong$.



Given: $\angle GPI \cong \angle THA$, $\angle GIP \cong \angle TAH$

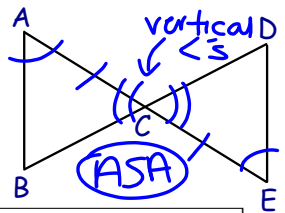
$\overline{PI} \cong \overline{HA}$

Congruence Statement: $\triangle PIG \cong \triangle HAT$

Given: $\angle A \cong \angle E$

$\overline{AC} \cong \overline{CE}$

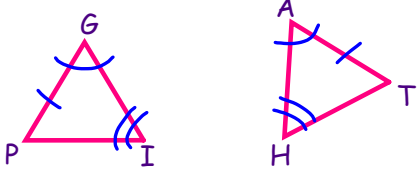
Prove: $\triangle ACB \cong \triangle ECD$



Statement	Reason
$\angle A \cong \angle E$	Given
$\overline{AC} \cong \overline{CE}$	Given
$\angle ACB \cong \angle ECD$	vertical angles
$\triangle ACB \cong \triangle ECD$	ASA

4) Angle-Angle-Side (AAS) Congruence Postulate:

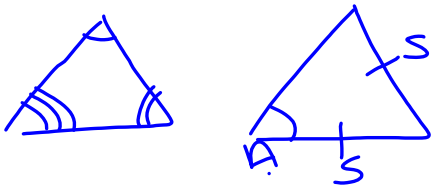
If 2 angles & a non-included side of one $\triangle$ are $\cong$ to 2 angles & a non-included side of another $\triangle$, then the 2 $\triangle$'s are $\cong$.



Given: $\angle G \cong \angle A$, $\angle I \cong \angle H$, $\overline{PG} \cong \overline{AT}$

Congruence statement: $\triangle PIG \cong \triangle THA$

NOTE: AA·A and SSA do NOT work!!!



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

1) ASA

2) ASA

3) AAS

4) Not congruent

5) ASA AAS

6) Not congruent

7) Not congruent

8) ASA AAS

9) ASA

10) AAS

SSS, SAS, ASA, and AAS Congruence Date_____ Period____

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

1) Not congruent

2) ASA

3) SSS

4) ASA

5)

6)

7)

8)

9)

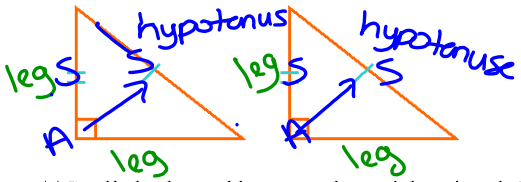
10)

SSS SAS AAS ASA Practice (1).pdf - Adobe A

5)

Hypotenuse-Leg Congruence Theorem (HL)

If the hypotenuse and a leg of one right triangle are congruent to the hypotenuse and leg of a 2nd right triangle, then the triangles are congruent.



**Spells bad word but must be a right triangle!!!

Examples:

Is there enough info given to prove the triangles congruent? If so, state the postulate.