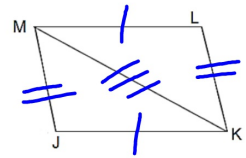


1. Complete the proof.

Given: $\overline{JK} \cong \overline{LM}$, $\overline{JM} \cong \overline{LK}$

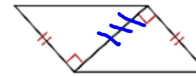
Prove: $\triangle JKM \cong \triangle LMK$



Statements	Justifications
$\overline{JK} \cong \overline{LM}$	Given
$\overline{JM} \cong \overline{LK}$	Given
$\overline{KM} \cong \overline{MK}$	Ref. Prop
$\triangle JKM \cong \triangle LMK$	SSS

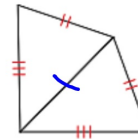
For #2-#7, are the two triangles congruent? If so, which postulate, SSS or SAS, is being used?

2.



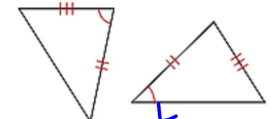
SAS

3.



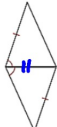
SSS

4.



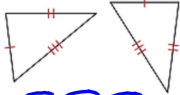
NOT POSS

5.



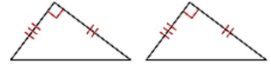
NOT POSS.

6.



SSS

7.

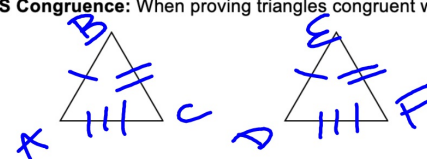


SAS

To prove triangles are congruent, you must find 3 corresponding parts that match up.

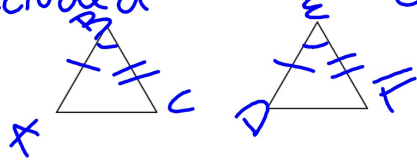
Triangle Congruence Theorems:

★ **SSS Congruence:** When proving triangles congruent with SSS, you must find 3 sides.



3 PAIRS

- * **SAS Congruence:** When proving triangles congruent with SAS, you must find 2 \cong sides and 1 \cong angle. You must have 1 **included angle** 2 **pairs**

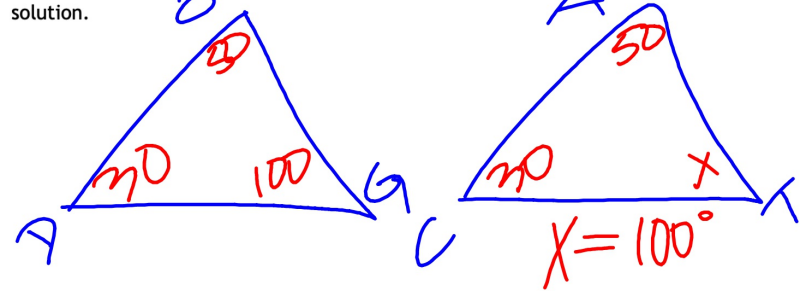


11. If two angles of one triangle are congruent to two angles of another triangle, what must be true about the third angles of the triangles? How do you know?

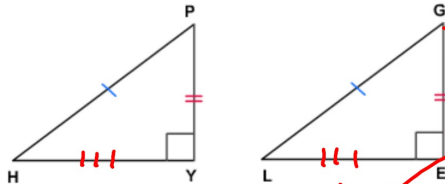
The third angles of the Δ s must also be \cong . Triangle Sum Thm
 $180 - (X + Y) = Z$



12. **REINFORCE** Suppose $\triangle DOG \cong \triangle CAT$. If $m\angle D = 30^\circ$ and $m\angle A = 50^\circ$, find $m\angle T$. Explain your solution.



13. Fill in the blanks to complete the proof of the Hypotenuse-Leg conjecture.



$$\begin{aligned} a^2 + b^2 &= c^2 \\ a^2 &= c^2 - b^2 \\ a &= \sqrt{c^2 - b^2} \end{aligned}$$

substitution	$\sqrt{(GL)^2 - (GE)^2}$	SSS	PH - PY
GL - GE	HL	right triangles	$\sqrt{(PH)^2 - (PY)^2}$

In right triangles HYP and LEG, $PH = GL$ and $PY = GE$.

By the Pythagorean Theorem, $HY =$ _____ and $LE =$ _____.

By _____, $HY = \sqrt{(PH)^2 - (PY)^2} =$ _____, so $HY = LE$.

Therefore, $\triangle HYP \cong \triangle LEG$ by SSS.

14. Complete the summary table below by filling in each blank with the correct abbreviation of the congruent triangle statements. Use the answer choices provided.

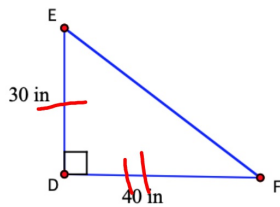
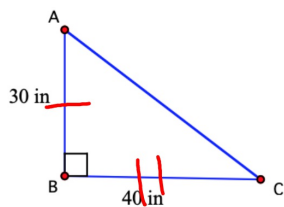
SAA ASA SAS SSS HL

	If three sides of one triangle are congruent to three sides of another triangle, then the triangles are congruent.
	If two sides and the included angle of one triangle are congruent to two sides and the included angle of another triangle, then the triangles are congruent.
	If two angles and the included side of one triangle are congruent to two angles and the included side of another triangle, then the triangles are congruent.
	If two angles and a nonincluded side of one triangle are congruent to two angles and a nonincluded side of another triangle, then the triangles are congruent.
	If the hypotenuse and a leg of one right triangle are congruent to the hypotenuse and the corresponding leg of another right triangle, then the triangles are congruent.

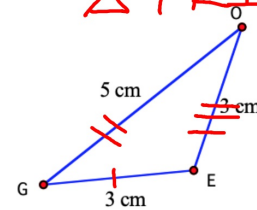
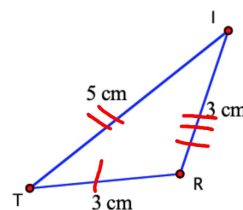
1
2
3
4
= =

15. **REINFORCE** Consider each of the diagrams below, and decide whether you are given enough information to determine that the triangles are congruent. If so, write the congruence statement and the congruence triangle postulate you would use. If not, explain why not and draw a counterexample.

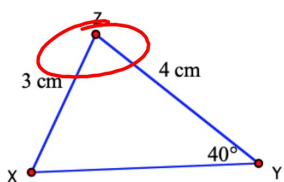
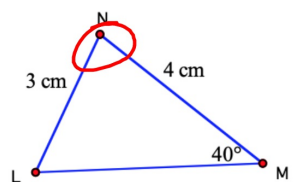
a. SAS $\triangle ABC \cong \triangle DEF$



b. SSS $\triangle IRT \cong \triangle OEG$
 $\triangle TRI \cong \triangle GEO$



c. NOT POSS



Hwk #30 - ASA & AAS Practice + 3 Agile Mind Questions