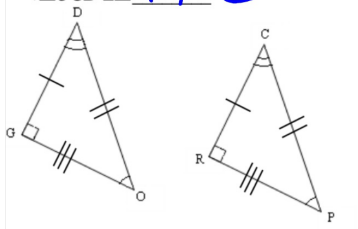
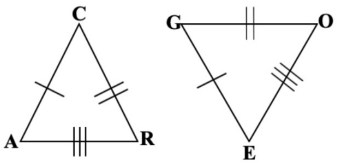
I. Name the congruent triangles.

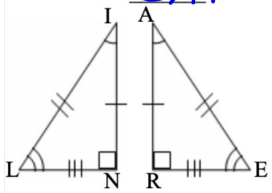
1. $\triangle OGD \cong \triangle$ PRC



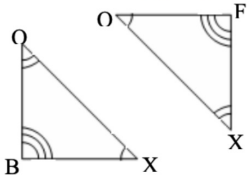
2. $\triangle RAC \cong \triangle$ OEG



3. $\triangle LIN \cong \triangle$ EAR

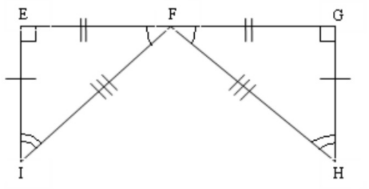


4. $\triangle FOX \cong \triangle$ BXO



II. Name the congruent triangle and the congruent parts.

5.



$\triangle FGH \cong \triangle$ FEI

$\angle EFI \cong \angle$ GFH

$\angle G \cong \angle$ E

$\angle H \cong \angle$ I

$\overline{FG} \cong$ $\overline{EF}$

$\overline{GH} \cong$ $\overline{EI}$

$\overline{FH} \cong$ $\overline{FI}$

Use the congruency statement to fill in the corresponding congruent parts.

6. $\triangle EFI \cong \triangle HGI$

$\angle E \cong \angle$ H

$\overline{FE} \cong$ $\overline{GH}$

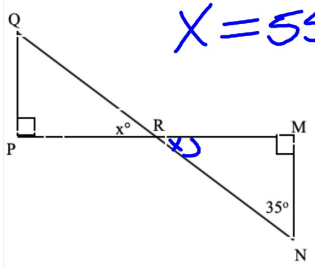
$\angle EFI \cong \angle$ HGI

$\overline{FI} \cong$ $\overline{GI}$

$\angle FIE \cong \angle$ GIH

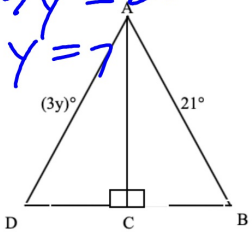
$\overline{IE} \cong$ $\overline{IH}$

7. $\triangle PQR \cong \triangle MNR$. Find x.



$x = 55°$

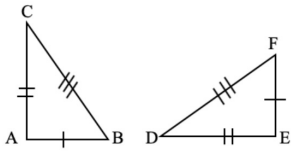
8. $\triangle ABC \cong \triangle ADC$. Find y.



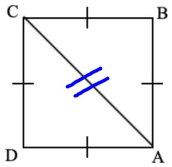
$3y = 21$

$y = 7$

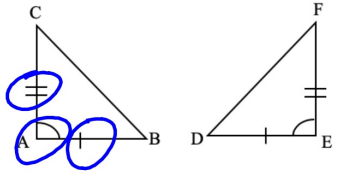
9. $\triangle ABC \cong \triangle EFD$ SSS



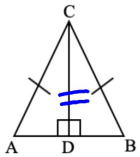
10. $\triangle ABC \cong \triangle CDA$ SSS



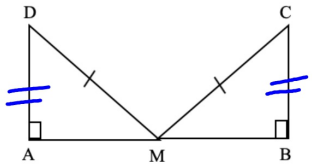
11. $\triangle ABC \cong \triangle EFD$ SAS



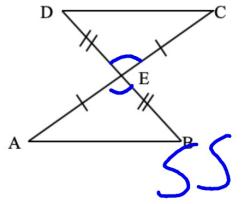
12. $\triangle ADC \cong \triangle BDC$ HL

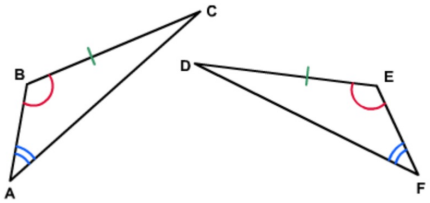


13. $\triangle MAD \cong \triangle MBC$ HL



14. $\triangle ABE \cong \triangle CDE$ SAS





1. Are you given enough information to prove that these two triangles are congruent? If so, what reason would you give?

AAS
The diagram shows that two corresp ∠s are ≅ and it has the non included side.

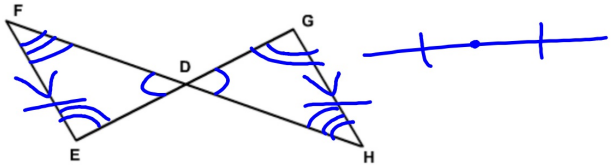
2. Complete the congruence statements that describe the two triangles above as congruent. Be sure to name the two triangles in order of their correspondence.

a. $\Delta ABC \cong$ ΔFED

b. $\Delta CAB \cong$ ΔDFE

c. $\Delta CBA \cong$ ΔDEF

d. $\Delta BCA \cong$ ΔEDF



3. Consider the two triangles above. Suppose **D** is the midpoint of both $\overline{GE}$ and $\overline{FH}$. Are you given enough information to prove the triangles are congruent? If so, explain your reasoning.

SAS

4. How would you complete the following congruence statement?

$\Delta FDE \cong$ ΔHDG

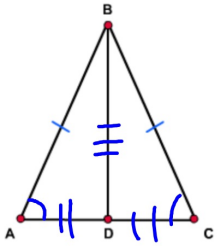
5. Suppose you are not told anything about **D** but instead you are told that $\overline{GH} \parallel \overline{FE}$. Can you prove the triangles above are congruent? Explain your reasoning.

Not ≅ b/c AAA doesn't prove ≅.

6. This time, suppose you know that $\overline{EF} \cong \overline{GH}$ and $\overline{EF} \parallel \overline{GH}$. Can you prove the two triangles above are congruent? Explain your reasoning.

ASA or AAS

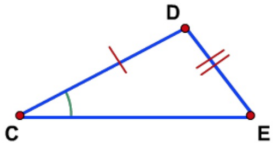
7. In this diagram, **D** is the midpoint of $\overline{AC}$ and $\overline{AB} \cong \overline{CB}$. Can you prove any triangles congruent? Explain your reasoning.

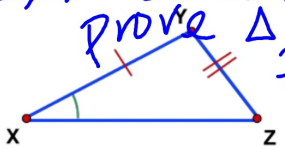


SAS
SSS
$\triangle ABD \cong \triangle CBD$

8. Consider the triangles in this diagram. Suppose you know that **CD** = **XY**, **DE** = **YZ**, and $\angle C \cong \angle X$. Is this enough information to prove the triangles congruent? Explain your reasoning.

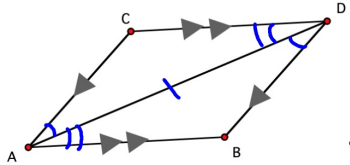
SSA doesn't prove $\triangle$s $\cong$.

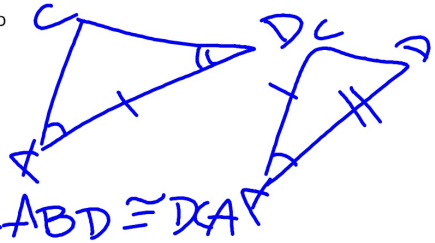




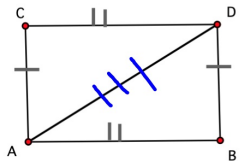
9. **REINFORCE** For each triangle pair below, decide if you can determine a triangle congruence from the given information. If so, write the triangle congruence statement and what postulate you can use. If not, explain why no congruence can be determined.

a. ASA $\triangle ABD \cong \triangle DCA$

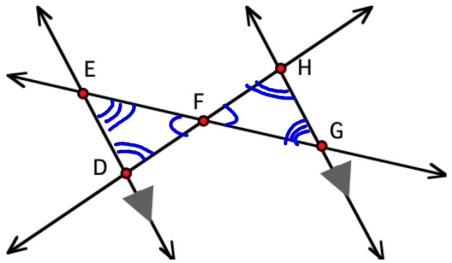




b. SSS $\triangle ABD \cong DCA$

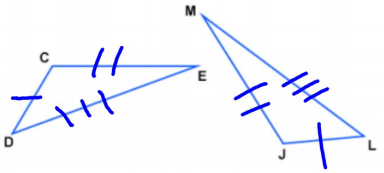


c. _____ NP



10. **REINFORCE** Use the given information, and other theorems and postulates you have learned, to decide if each pair of triangles can be proved congruent. If so, write the congruence statement and the triangle congruence postulate. You may want to mark the diagrams to show which parts are congruent.

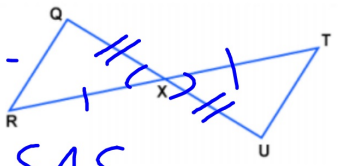
a. Given: $\overline{CD} \cong \overline{JL}$, $\overline{CE} \cong \overline{JM}$, $\overline{DE} \cong \overline{LM}$



SSS

$\triangle CDE \cong \triangle JLM$

b. Given: $\overline{QU}$ and $\overline{RT}$ bisect each other.



SAS

$\triangle QXR \cong \triangle UXT$

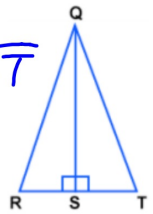
11. **REINFORCE** Prove that the following pairs of right triangles are congruent.

a. List the corresponding parts of each right triangle that must be congruent in order for $\triangle QRS \cong \triangle QTS$ by HL

① $\overline{QS} \cong \overline{QS}$

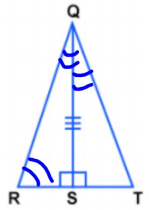
$\overline{QR} \cong \overline{QT}$ →

② $\overline{RS} \cong \overline{ST}$



b. If the two right triangles are marked as indicated, what additional information is necessary in order to prove that **ΔQRS ≅ ΔQTS** by ASA?

$\angle RQS \cong \angle TQS$



Hwk #31 - AAS & HL Practice Worksheet & 4 Agile Mind Questions