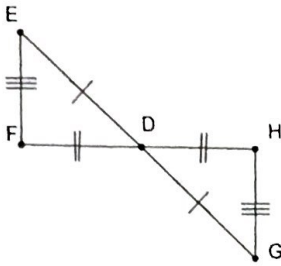


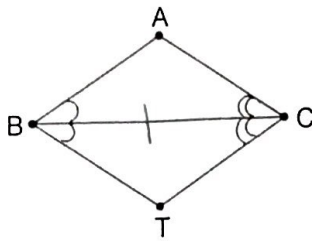
Lesson 2 → Proving Triangles Congruent HOMEWORK

Complete the congruence statement for each pair of congruent triangles. Then state the reason you are able to determine the triangles are congruent. If you cannot conclude that triangles are congruent, write "none".

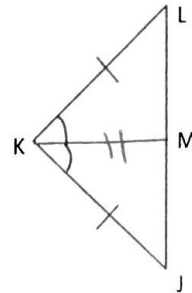
1. $\triangle EFD \cong \triangle GHD$
by SSS



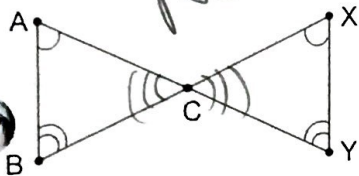
2. $\triangle ABC \cong \triangle TBC$
by ASA



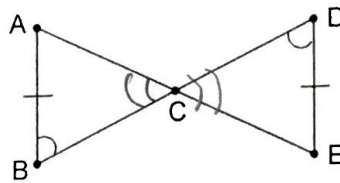
3. $\triangle LKM \cong \triangle JKM$
by SAS



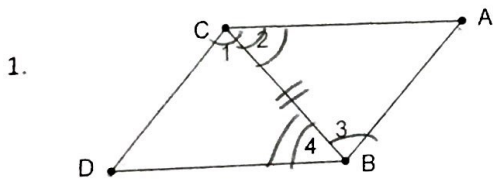
4. $\triangle ABC \cong \triangle$
by NONE



5. $\triangle ABC \cong \triangle EDC$
by AAS

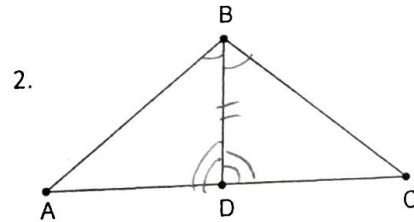


Use the given information to mark the diagram and any additional congruence you can determine from the diagram. Then complete the triangle congruence statement and give the reason for triangle congruence.



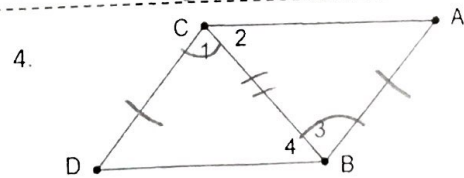
Given: $\angle 1 \cong \angle 3$, $\angle 2 \cong \angle 4$

$\triangle ABC \cong \triangle DCB$ by ASA



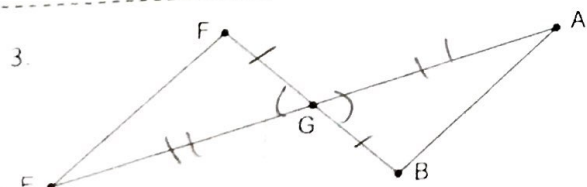
Given: $\angle ABD \cong \angle CBD$, $\angle ADB \cong \angle CDB$

$\triangle ABD \cong \triangle CBD$ by ASA



Given: $\angle 1 \cong \angle 3$, $\overline{CD} \cong \overline{AB}$

$\triangle ABC \cong \triangle DCB$ by SAS



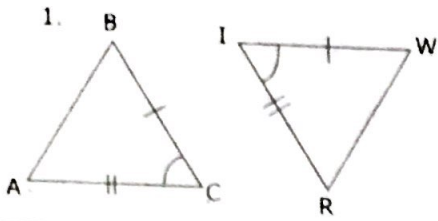
Given: G is the midpoint of \overline{FB} and \overline{EA}

$\triangle ABG \cong \triangle EFG$ by SAS

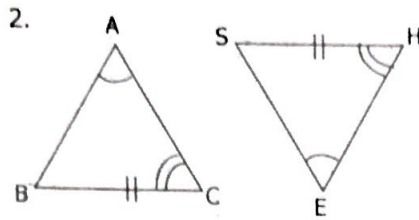
Math 2 – Honors
Unit 6 – Triangles & Congruence
Lesson 2 – Homework

Name _____
 Date _____ Pd _____

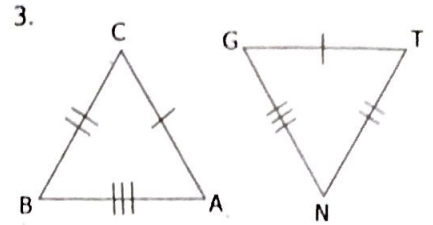
For each problem give the correct naming order of the congruent triangles. Write that name in order on the lines for the problem number (see box at bottom). Also, indicate which postulate or theorem is being used.



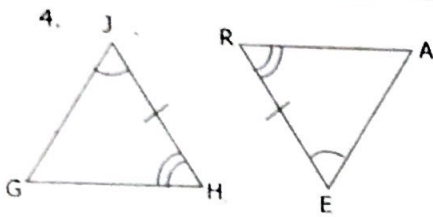
$\triangle ABC \cong \triangle PQR$ by SAS



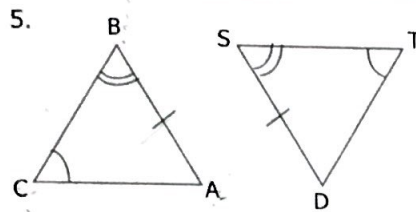
$\triangle ABC \cong \triangle ESH$ by AAS



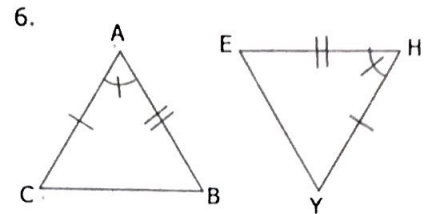
$\triangle ABC \cong \triangle GNT$ by SSS



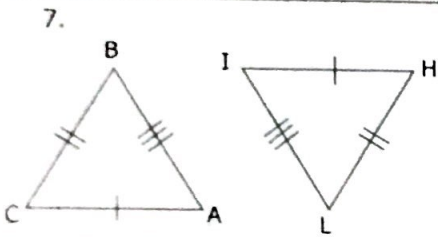
$\triangle GHJ \cong \triangle APE$ by ASA



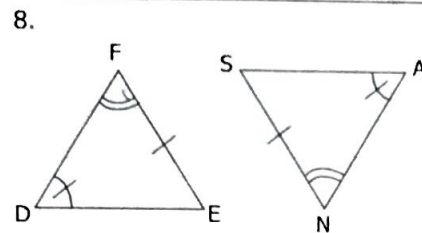
$\triangle ABC \cong \triangle DST$ by AAS



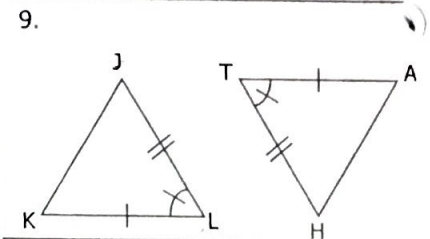
$\triangle ABC \cong \triangle HEY$ by SAS



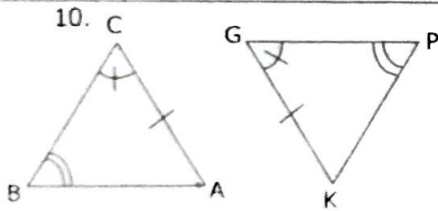
$\triangle ABC \cong \triangle ILH$ by SSS



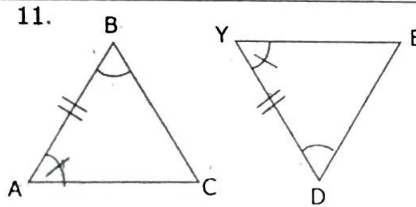
$\triangle DEF \cong \triangle ASN$ by AAS



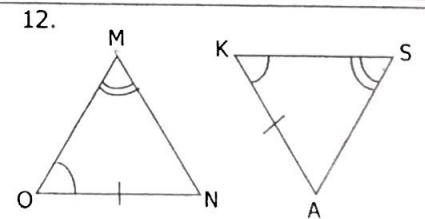
$\triangle JKL \cong \triangle HAT$ by SAS



$\triangle ABC \cong \triangle XPG$ by AAS



$\triangle ABC \cong \triangle YDE$ by ASA



$\triangle MNO \cong \triangle SAK$ by AAS

AREAS ON A KE S S H E D I S T H A T T H
 4 4 4 8 8 8 12 12 2 2 2 5 5 9 9 9 6
 E Y K E E P G R O W I N G U N T I L T H E Y D I E
 6 6 10 10 10 1 1 1 3 3 3 7 7 7 11 11 11

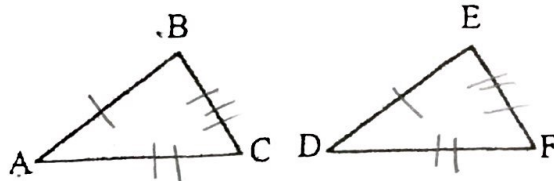
(When you are done with the puzzle, there are: 3 SAS, 5 AAS, 2 ASA, and 2 SSS instances.)

Part I: Mark the triangles based on the given information and what one can mark shown in the diagram. Then complete the statement.

1. Given: $\overline{AB} \cong \overline{DE}$, $\overline{AC} \cong \overline{DF}$,
 $\overline{BC} \cong \overline{EF}$.

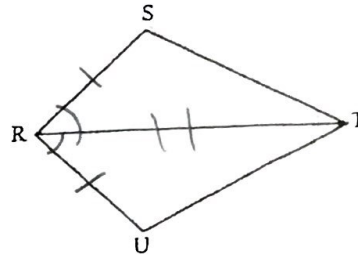
Complete the statement:

$\triangle ABC \cong \triangle DEF$ by SSS.



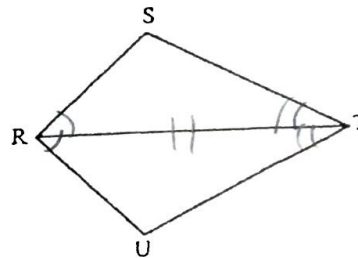
2. Given: \overline{RT} bisects $\angle SRU$,
 $\overline{RS} \cong \overline{RU}$.

$\triangle STR \cong \triangle UTR$ by SAS.



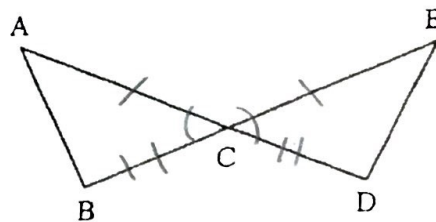
3. Given: \overline{RT} bisects $\angle SRU$ and
 \overline{RT} bisects $\angle STU$.

$\triangle RST \cong \triangle RTU$ by ASA.



4. Given: $\overline{AC} \cong \overline{EC}$ and $\overline{BC} \cong \overline{DC}$

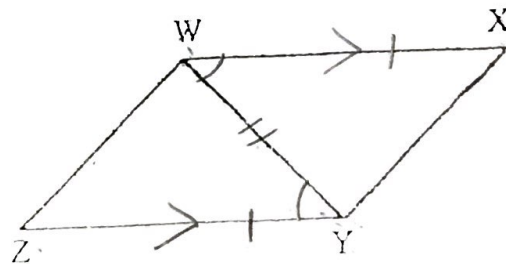
$\triangle ABC \cong \triangle EDC$ by SAS.



5. Given: $\overline{WX} \parallel \overline{YZ}$ and $\overline{WX} \cong \overline{YZ}$

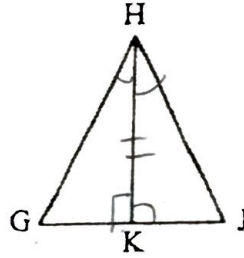
$\triangle XYW \cong \triangle ZYW$ by SAS.

OR ASA



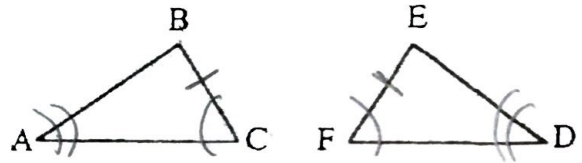
6. Given: \overline{HK} bisects $\angle GHJ$,
 $\overline{HK} \perp \overline{GJ}$

$\triangle GHK \cong \triangle JHK$ by ASA.



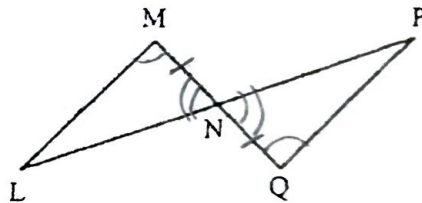
7. Given: $\angle C \cong \angle F$, $\overline{BC} \cong \overline{EF}$,
 $\angle A \cong \angle D$

$\triangle BCA \cong \triangle EFD$ by AAS.



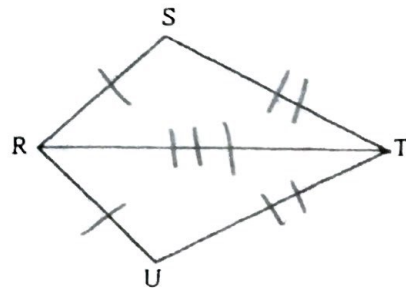
8. Given: $\angle M \cong \angle Q$,
 N is the midpoint of \overline{MQ}

$\triangle LNM \cong \triangle PNQ$ by ASA.



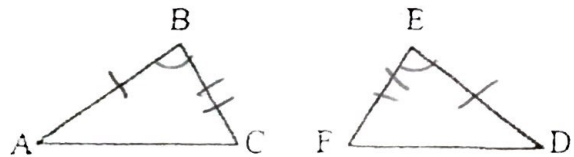
9. Given: $\overline{RS} \cong \overline{RU}$, $\overline{TS} \cong \overline{TU}$

$\triangle SRT \cong \triangle URT$ by SSS.



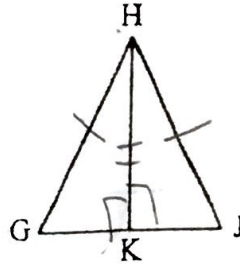
10. Given: $\overline{AB} \cong \overline{DE}$, $\overline{BC} \cong \overline{EF}$,
 $\angle B \cong \angle E$

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



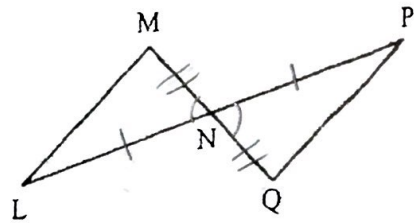
11. Given: $\overline{GH} \cong \overline{JH}$
 $\overline{HK} \perp \overline{GJ}$

$\triangle GHK \cong \triangle JHK$ by HL.



12. Given: N is the midpoint of \overline{MQ} and \overline{LP}

$\triangle MNL \cong \triangle QNP$ by SAS.

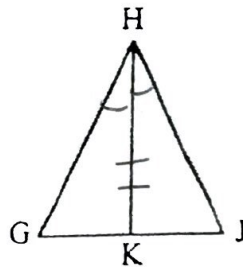


Part II: State the **THIRD PART** needed to prove the following triangles congruent.

13. Given: \overline{HK} bisects \overline{GJ}

$\triangle GKH \cong \triangle JKH$ by SAS if one knows that

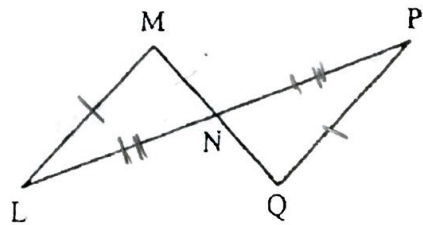
$\overline{GH} \cong \overline{JH}$.



14. Given: $\overline{LM} \cong \overline{PQ}$, N is the midpoint of \overline{LP}

$\triangle NML \cong \triangle NQP$ by SSS if one knows that

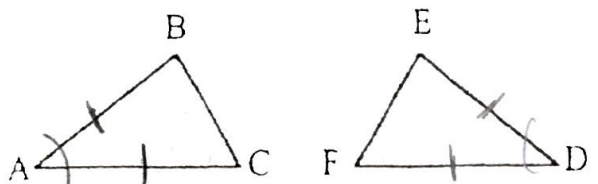
$\overline{MN} \cong \overline{QN}$.



15. Given: $\overline{AC} \cong \overline{DF}$, $\overline{AB} \cong \overline{DE}$

$\triangle ABC \cong \triangle DEF$ by SAS if one knows that

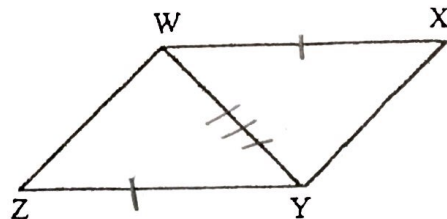
$\angle A \cong \angle D$.



16. Given: $\overline{WX} \cong \overline{YZ}$

$\triangle WXY \cong \triangle YZW$ by SSS if one knows that

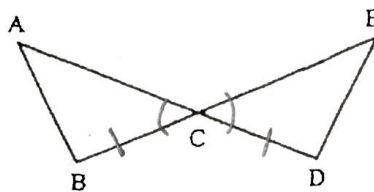
$\overline{WZ} \cong \overline{YX}$



17. Given: $\overline{BC} \cong \overline{DC}$

$\triangle ABC \cong \triangle EDC$ by AAS if one knows that

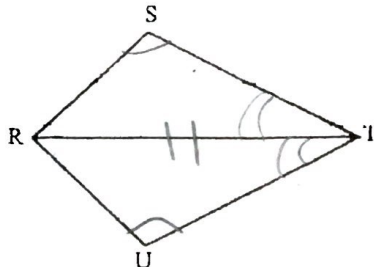
$\angle A \cong \angle E$



18. Given: $\angle S \cong \angle U$

$\triangle TRS \cong \triangle TRU$ by AAS if one knows that

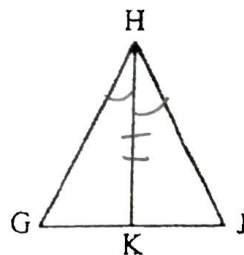
$\angle UTR \cong \angle STR$



19. Given: \overline{HK} bisects $\angle GHJ$

$\triangle HKG \cong \triangle HKJ$ by ASA if one knows that

$\angle GKH \cong \angle JKH$



20. Given: $\overline{LM} \cong \overline{PM}$, $\overline{MQ} \cong \overline{MN}$

$\triangle LQM \cong \triangle PNM$ by SSS if one knows that

$\overline{LQ} \cong \overline{PN}$

