

Name: Key
 Geometry

Date: _____
 Band: _____

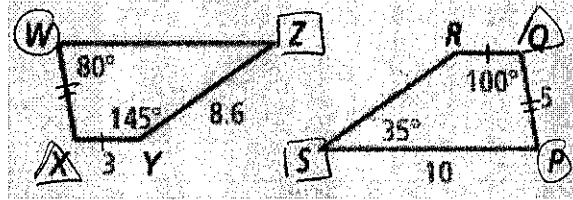
Unit 4: Congruent Triangles Study Guide

LT#1: Recognize congruent figures and their corresponding parts.

$RSTUV \cong KLMNO$. Complete the congruence statements.

1. $\overline{TS} \cong \overline{ML}$ 2. $\angle N \cong \angle U$ 3. $\overline{LM} \cong \overline{ST}$ 4. $VUTSR \cong ONMLK$

$WXYZ \cong PQRS$. Find each measure or length.

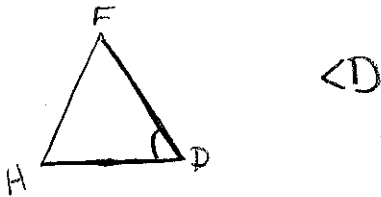


9. $m\angle P$ 10. QR 11. WX 12. $m\angle Z$ 13. $m\angle X$ 14. $m\angle R$
 80° 3 5 35° 100° 145°

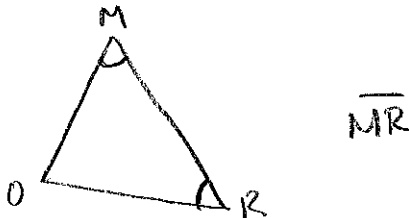
LT#2: Prove two triangles congruent using the SSS and SAS Postulates.

LT#3: Prove two triangles congruent using the ASA Postulate and the AAS Theorem.

15. In $\triangle HFD$, what angle is included between \overline{DH} and \overline{DF} ?

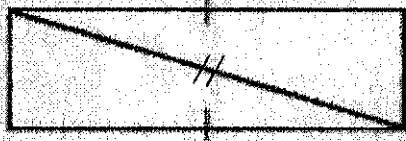


16. In $\triangle OMR$, what side is included between $\angle M$ and $\angle R$?



Which postulate or theorem, if any, could you use to prove the two triangles congruent? If there is not enough information to prove the triangles congruent, write *not enough information*.

17.



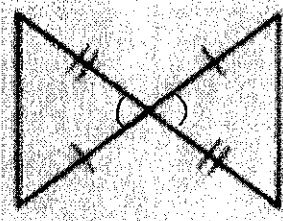
not enough information.

18.



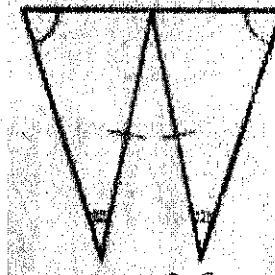
not enough information

19.



SAS

20.

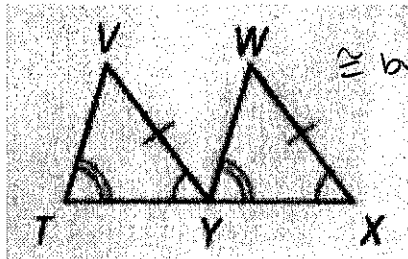


AAS

LT#4: Use triangle congruence and corresponding parts of congruent triangles to prove that parts of two triangles are congruent.

How can you use congruent triangles to prove the statement true?

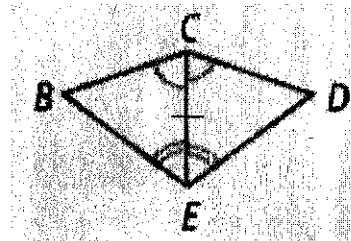
21. $\overline{TV} \cong \overline{YW}$



\cong by AAS

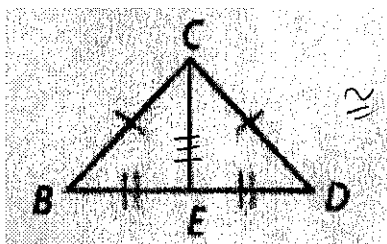
CPLTC

22. $\overline{BE} \cong \overline{DE}$



\cong by SAS
CPLTC

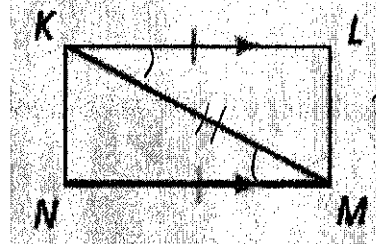
23. $\angle B \cong \angle D$



\cong by SSS

CPLTC

24. $\overline{KN} \cong \overline{ML}$

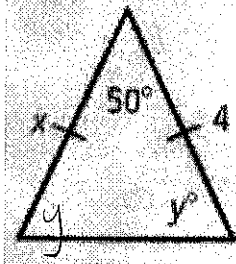


\cong by SAS
CPLTC

LT#5: Use and apply properties of isosceles and equilateral triangles.

Find the values of x and y .

25.



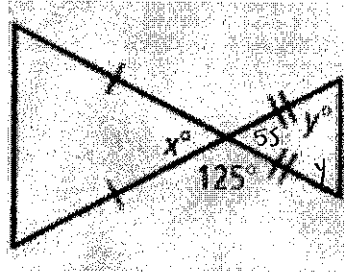
$x = 4$

$y + y + 50 = 180$

$2y = 130$

$y = 65$

26.



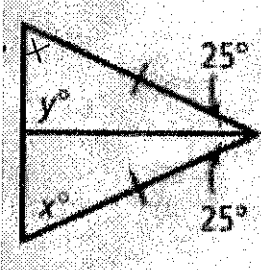
$x = 180 - 25 = 55^\circ$

$y + y + 55 = 180$

$2y = 125$

$y = 62.5^\circ$

27.



$x + x + 50 = 180$

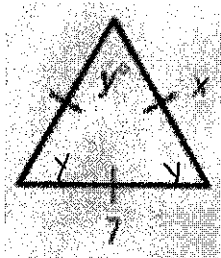
$2x = 130$

$x = 65$

$65 + y + 25 = 180$

$y = 90$

28.



$x = 7$

$y + y + y = 180$

$3y = 180$

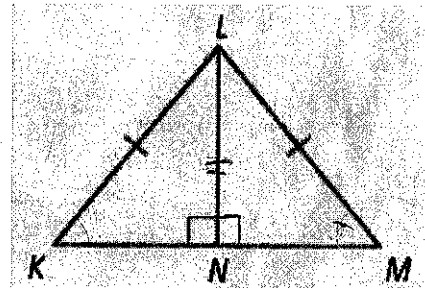
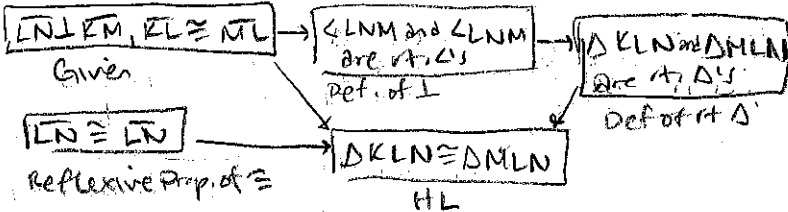
$y = 60$

LT#6: Prove right triangles congruent using the Hypotenuse-Leg Theorem.

Write a proof for each of the following.

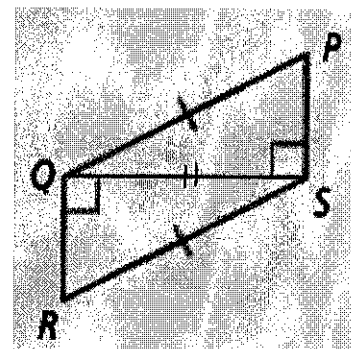
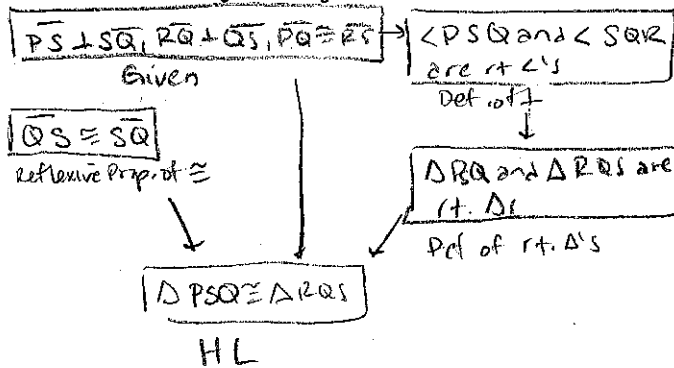
29. Given: $\overline{LN} \perp \overline{KM}, \overline{KL} \cong \overline{ML}$

Prove: $\triangle KLN \cong \triangle MLN$



30. Given: $\overline{PS} \perp \overline{SQ}, \overline{RQ} \perp \overline{QS}, \overline{PQ} \cong \overline{RS}$

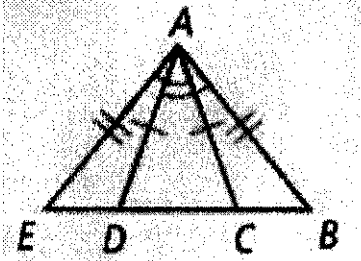
Prove: $\triangle PSQ \cong \triangle RQS$



LT#7: Identify congruent overlapping triangles.
LT#8: Prove two triangles congruent using other congruent triangles.

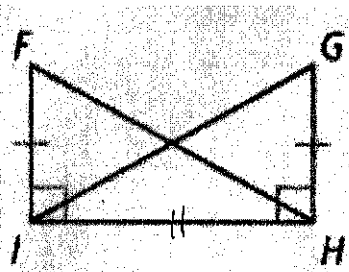
Name a pair of overlapping congruent triangles in each diagram. State whether the triangles are congruent by SSS, SAS, ASA, AAS, or HL.

31.



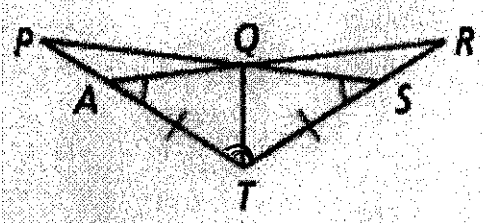
$\triangle EAC \cong \triangle BAD$
 SAS

32.



$\triangle FIH \cong \triangle GHI$
 SAS

33.



$\triangle PST \cong \triangle SAT$
 ASA