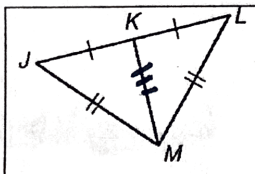
Name Key

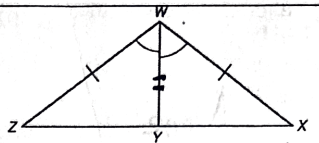
Instructions: Decide which congruence shortcut, if any, can be used to prove the triangles congruent. Explain your reasoning.

If the triangles are congruent, write the congruence statement. For example: $\Delta ABC \cong \Delta EDF$



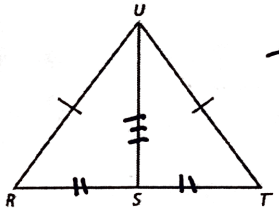
by SSS the triangles are $\cong$

$\Delta JKM \cong \Delta LKM$



by SAS the triangles are $\cong$

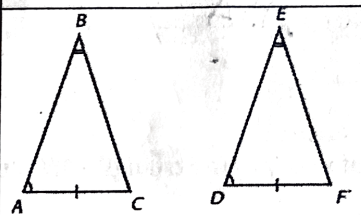
$\Delta WZY \cong \Delta WXY$



Triangles are $\cong$ by SSS

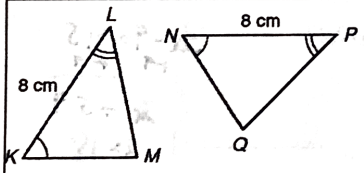
$\Delta URS \cong \Delta UTS$

S is the midpoint of $\overline{RT}$



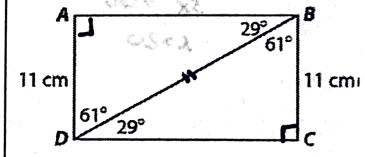
Triangles are $\cong$ by AAS

$\Delta ABC \cong \Delta DEF$



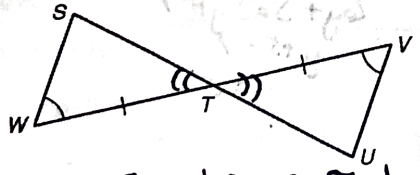
Triangles are $\cong$ by ASA

$\Delta LKM \cong \Delta PNQ$



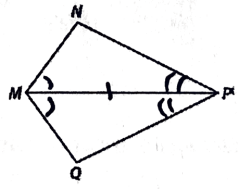
ASA, AAS, SAS and HL are all possible here

$\Delta DAB \cong \Delta BCD$



Triangles are $\cong$ by ASA

$\Delta SWT \cong \Delta UVT$

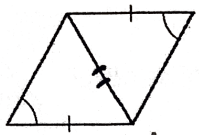


MP bisects $\angle NMQ$ and $\angle NPQ$.

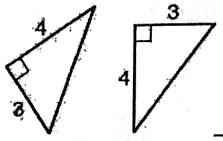
Triangles are $\cong$ by ASA

$\Delta MNP \cong \Delta MQP$

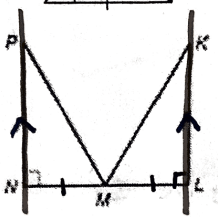
Write which of the congruence shorcuts can be used to prove the triangles congruent.
If no shortcuts can be used, write NONE.



None - SSA doesn't work

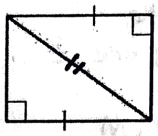


SAS

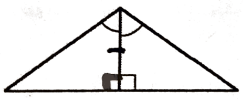


M is the midpoint of $\overline{NL}$

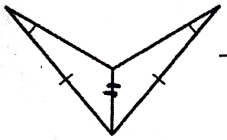
None



HL

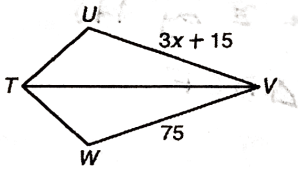


ASA



None - SSA doesn't work

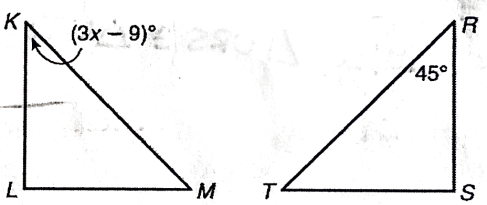
Find the value of x so that the triangles are congruent. Show all work!



Given: $\triangle TUV \cong \triangle TWV$.

$3x+15=75$
$3x=60$
$x=20$

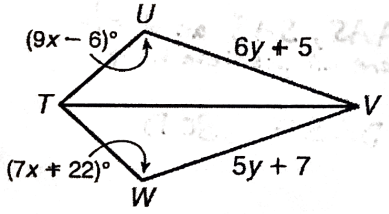
$x =$ 20



Given: $\triangle KLM \cong \triangle RST$

$3x-9=45$
$+9 \quad +9$
$3x=54$
$x=18$

$x =$ 18



Given: $\triangle TUV \cong \triangle TWV$.

$m\angle U =$ 120°

$9x-6=7x+22$
$2x=28$
$x=14$

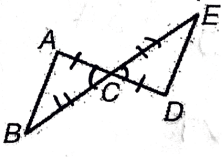
$UV =$ 17

$6y+5=5y+7$
$y+5=7$
$y=2$

Write a proof. You may write a paragraph proof, flow chart proof, or two-column proof.

Given: C is the midpoint of $\overline{AD}$ and $\overline{BE}$.

Prove: $\triangle ABC \cong \triangle DEC$



	Statements	reasons
S	C is midpoint of $\overline{AD}$ $\overline{AC} \cong \overline{CD}$	given Def of midpoint
A	$\angle ACB \cong \angle DCE$	vertical angles
S	C is midpoint of $\overline{BE}$ $\overline{BC} \cong \overline{CE}$	given Def of midpoint
	$\triangle ABC \cong \triangle DEC$	SAS