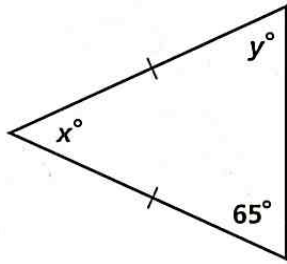
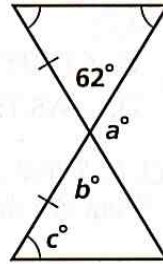


For 1 – 2, find the value measure of the variables.

1.



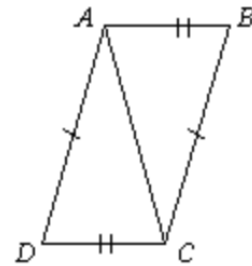
2.



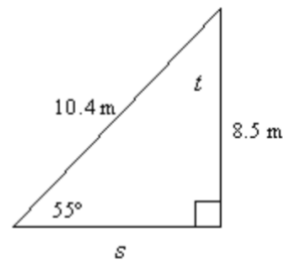
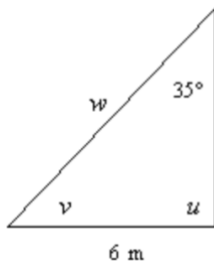
3. Use the information given in the diagram. Tell **why** each statement is true.

a. $AC \cong CA$ _____

b. $AD \cong BC$ _____



4. The two triangles are congruent. Find the missing side lengths and the missing angle measures.



$s =$ _____

$v =$ _____

$t =$ _____

$u =$ _____

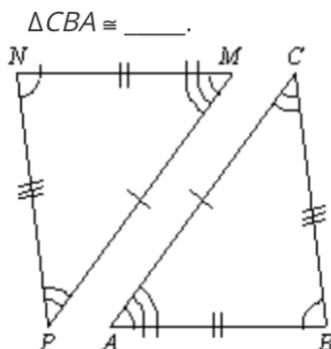
$w =$ _____

5. Given $\triangle QRS \cong \triangle TUV$, draw the two triangles, label, and find the measure of the given angles and the lengths of the given sides.

a. $QS = 3v + 1$; $TV = 5v - 9$

b. $m\angle R = 4n + 4$; $m\angle U = 5n - 4$

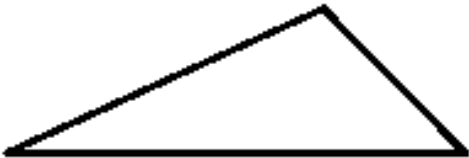
6. Fill in the following congruence statement.



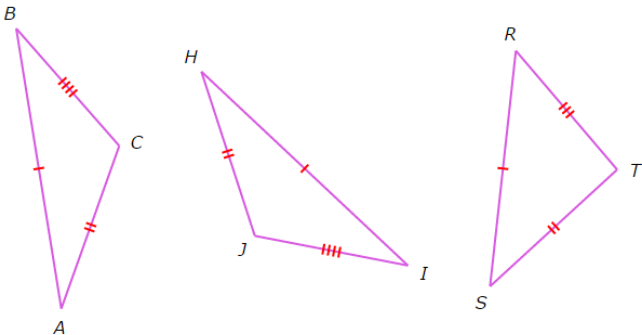
$\triangle CBA \cong$ _____.

Label the triangle below as $\triangle WVU$. Then answer questions 7 – 10.

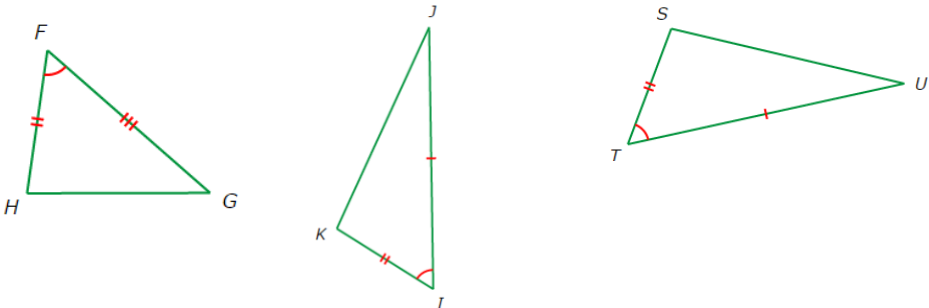
- What sides include $\angle V$?
- What angle is included between \overline{WV} and \overline{WU} ?
- What angles include \overline{UV} ?
- What side is included between $\angle W$ and $\angle U$?



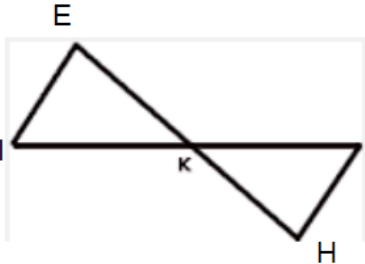
- Which two triangles are congruent by SSS? Complete the congruence statement.
 $\triangle \underline{\hspace{1cm}} \cong \triangle \underline{\hspace{1cm}}$



- Which two triangles are congruent by SAS? Complete the congruence statement.
 $\triangle \underline{\hspace{1cm}} \cong \triangle \underline{\hspace{1cm}}$

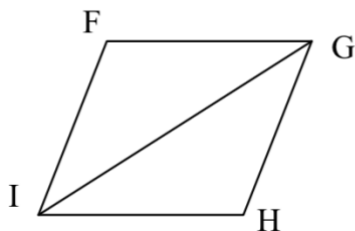


- Complete the proof.
 Given: $\overline{EI} \cong \overline{GH}$; K is the midpoint of \overline{GI} and \overline{EH}
 Prove: $\triangle EKI \cong \triangle HKG$



Statements	Justifications
$\overline{EI} \cong \overline{GH}$	
$\triangle EKI \cong \triangle HKG$	

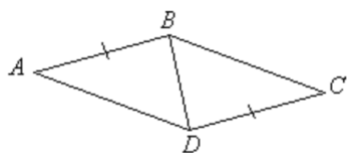
14. Given: $\overline{IF} \cong \overline{HG}$ and $\overline{FG} \cong \overline{IH}$
 Prove: $\triangle IFG \cong \triangle GHI$



Statements

Reasons

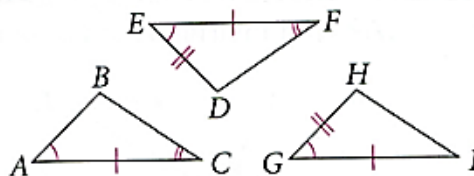
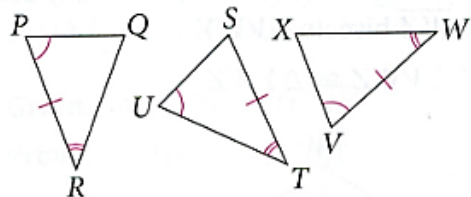
15. Determine what information you would need to know in order to use the SSS Congruence Postulate to show that the triangles are congruent.



For 16 – 17, which two triangles are congruent by ASA? Complete the congruence statement.

16. _____ \cong _____

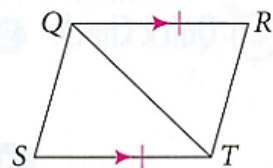
17. _____ \cong _____



18. Complete the proof.

Given: $\overline{QR} \cong \overline{TS}$, $\overline{QR} \parallel \overline{TS}$

Prove: $\triangle QRT \cong \triangle TSQ$

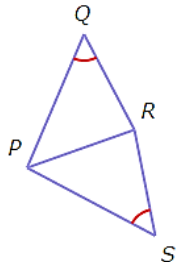


Statements	Justifications
$\overline{QR} \cong \overline{TS}$	
$\overline{QR} \parallel \overline{TS}$	
	Alternate Interior Angles
$\triangle QRT \cong \triangle TSQ$	

19. Complete the proof.

Given: $\angle Q \cong \angle S$, \overline{PR} bisects $\angle QPS$

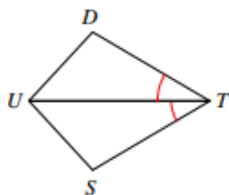
Prove: $\triangle PQR \cong \triangle PSR$



Statements	Justifications
$\angle Q \cong \angle S$	
\overline{PR} bisects $\angle QPS$	
	Definition of angle bisector
$\triangle PQR \cong \triangle PSR$	

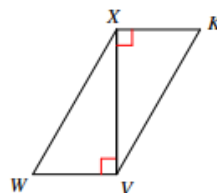
State what additional information is needed to prove the triangles congruent by the given postulate. You may mark it on the triangles, but you also need to fill out the statement below the figures.

20. ASA



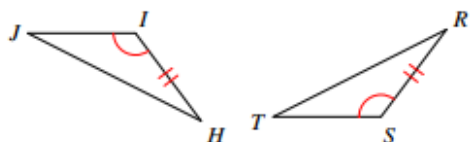
To prove the triangles congruent by ASA
we would need to know that _____ \cong _____

21. SAS



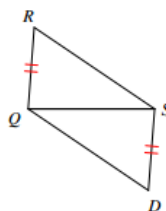
To prove the triangles congruent by SAS
we would need to know that _____ \cong _____

22. AAS



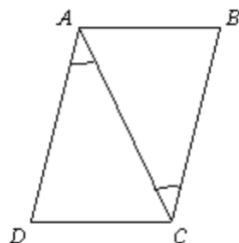
To prove the triangles congruent by AAS
we would need to know that _____ \cong _____

23. SSS



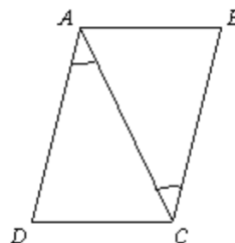
To prove the triangles congruent by SSS
we would need to know that _____ \cong _____

24. ASA



To prove the triangles congruent by ASA
we would need to know that _____ \cong _____

25. SAS



To prove the triangles congruent by SAS
we would need to know that _____ \cong _____