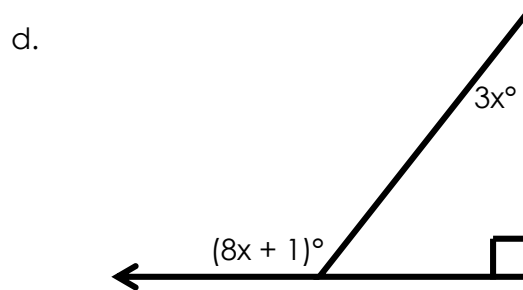
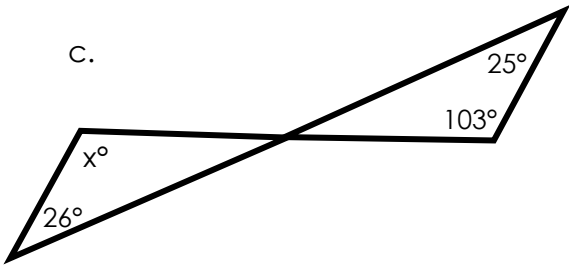
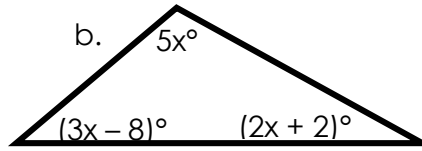
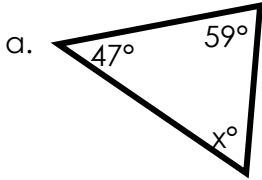


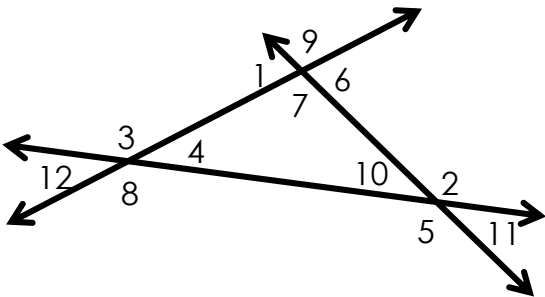
Geometry Triangle Congruence Unit Review Worksheet:

I. Interior and Exterior Angles.

2. Find the value of x . Show all work.



3. Use the figure below to complete each statement by using $<$, $>$, or $=$.

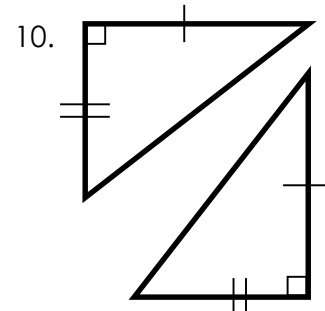
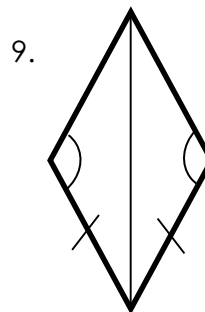
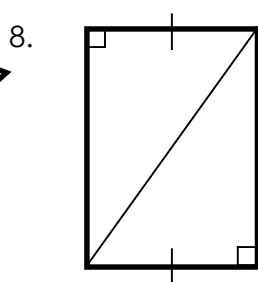
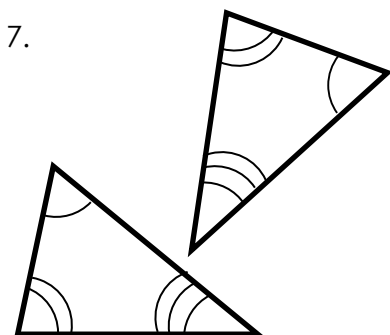


- a. $m\angle 6$ ____ $m\angle 1$ because _____
- b. $m\angle 4$ ____ $m\angle 1$ because _____
- c. $m\angle 2$ ____ $m\angle 7$ because _____
- d. $m\angle 12$ ____ $m\angle 4$ because _____

II. Name the property illustrated by the statement.

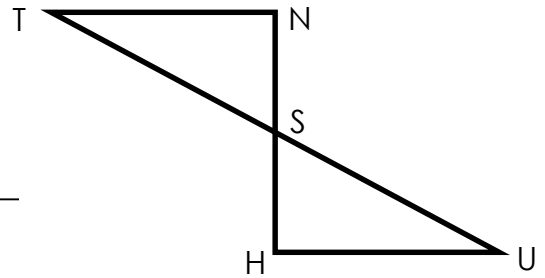
- 4. If $\angle 1 \cong \angle 2$, then $\angle 2 \cong \angle 1$. _____
- 5. If $\overline{UV} \cong \overline{WX}$ and $\overline{WX} \cong \overline{YZ}$, then $\overline{UV} \cong \overline{YZ}$. _____
- 6. $\angle QRS \cong \angle SRQ$. _____

III. Congruent Triangles: Determine if there is enough information to prove the triangles are congruent. If so, state which postulate or theorem would be used to prove they are congruent. If not, write "not enough information".



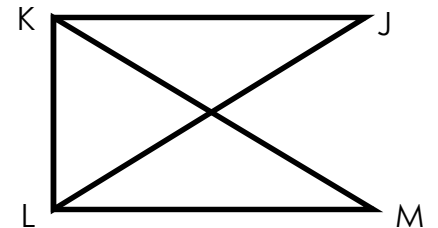
IV. Complete the following proofs.

11. Given: $\overline{NT} \parallel \overline{HU}$, $\overline{NS} \cong \overline{HS}$
 Prove: $\triangle TNS \cong \triangle UHS$



Statements	Reasons
1. $\overline{NT} \parallel \overline{HU}$	1.
2. $\angle TNS \cong \angle UHS$	2.
3. $\overline{NS} \cong \overline{HS}$	3.
4. $\angle TSN \cong \angle USH$	4.
5. $\triangle TNS \cong \triangle UHS$	5.

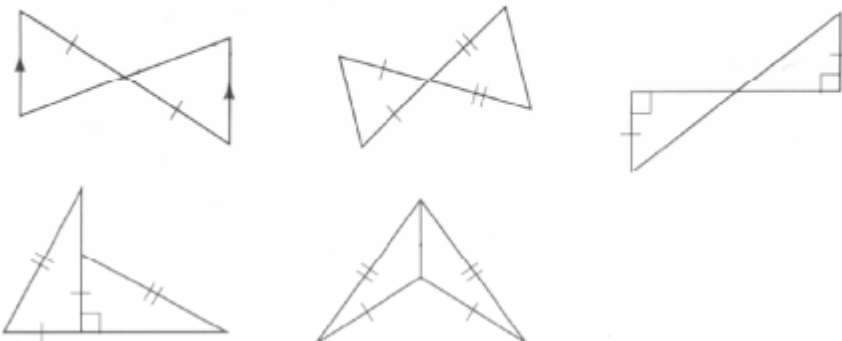
12. Given: $m\angle JKL = m\angle MLK = 90^\circ$, $\overline{JL} \cong \overline{MK}$
 Prove: $\triangle JKL \cong \triangle MLK$



Statements	Reasons
1. $\angle JKL = m\angle MLK = 90^\circ$	1. Given
2. $\triangle JKL$ and $\triangle MLK$ are Right Triangles	2. Definition of a right triangle
3. $\overline{JL} \cong \overline{MK}$	3.
4. $\overline{KL} \cong \overline{KL}$	4.
5. $\triangle JKL \cong \triangle MLK$	5.

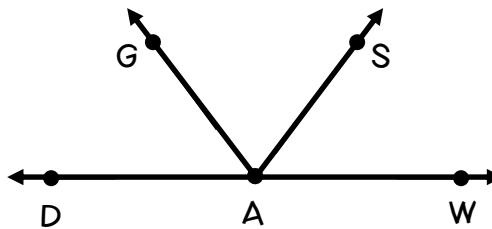
13.

Tell which theorem (SSS, SAS, ASA, AAS, HL) can be used to prove the triangles congruent. Remember to mark vertical angles and segments that are equal to themselves (reflexive property)



14.

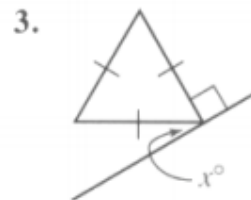
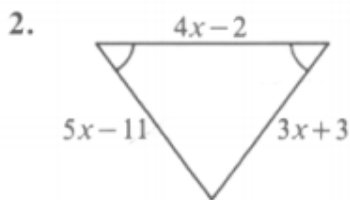
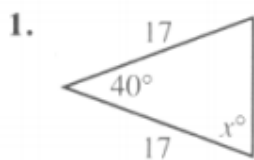
Given: $\angle DAG \cong \angle WAS$, $\angle WAS \cong \angle SAG$,
 $m\angle DAG = 2x + 8$, $m\angle WAS = 3x - 18$
 Prove: $m\angle SAG = 60^\circ$



Statements	Reasons
1. $\angle DAG \cong \angle WAS$, $m\angle DAG = 2x + 8$ $m\angle WAS = 3x - 18$	1. Given
2. $3x - 18 = 2x + 8$	2.
3. $x - 18 = 8$	3.
4. $x = 26$	4.
5. $m\angle WAS = 60^\circ$	5.
6. $\angle WAS \cong \angle SAG$	6. Given
7. $m\angle WAS = m\angle SAG$	7.
8. $m\angle SAG = 60^\circ$	8.

15.

Find the value of x .



16.

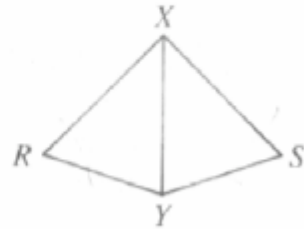
Given $\triangle ABC \cong \triangle DEF$, $AB = 15$, $BC = 20$, $AC = 25$, and $FE = 3x - 7$, find x .

Draw a diagram of the 2 triangles and label. Then find x .

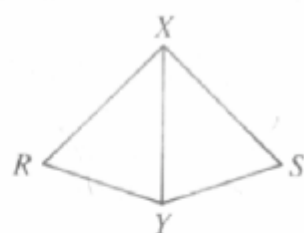
17.

In each case, mark the diagram with the information given, and decide whether you can conclude that $\triangle RXY$ is congruent to $\triangle SXY$. If you do, say why (SSS, SAS, ASA, AAS). If you don't, say so.

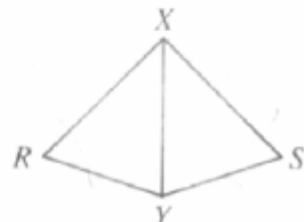
(a) Given: $\overline{RX} \cong \overline{SX}$; $\overline{RY} \cong \overline{SY}$



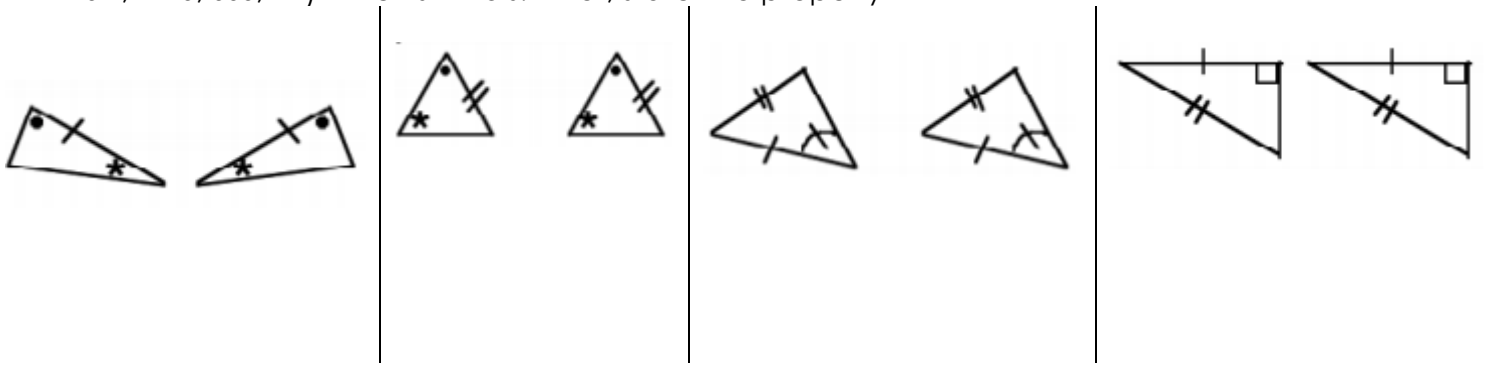
(b) Given: $\overline{RY} \cong \overline{SY}$; $\angle R \cong \angle S$



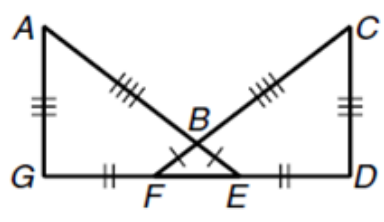
(c) Given: \overline{XY} bisects $\angle RXS$ and $\angle RYS$.



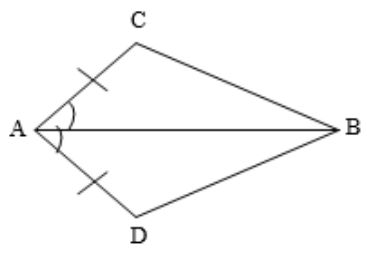
18. If the triangles below can be proved congruent by one of the five properties you have had (SAS, ASA, AAS, SSS, HL) write its initials. If not, state "no property"



$\triangle AGE \cong \triangle CDF$ _____



$\triangle ACB \cong \triangle ADB$ _____



$\triangle WYX \cong \triangle WZV$ _____

