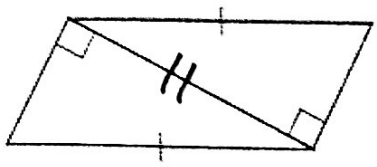
Accelerated Geom/Alg2
Congruent Triangles Review

Name _____
Date _____ **Block** _____

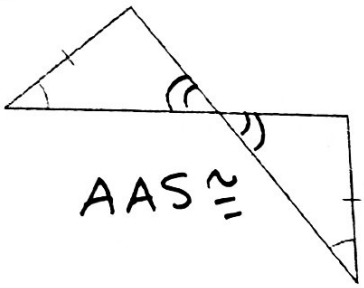
State whether each pair of triangles is congruent by SSS, SAS, ASA, AAS, or HL; if none of these methods work, write NONE.

1.



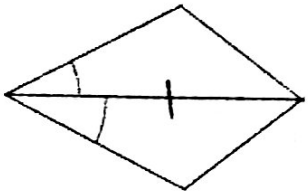
HL ≅

2.



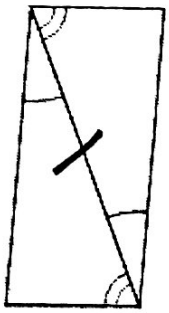
AAS ≅

3.



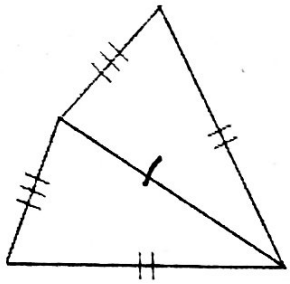
Not enough inf

4.



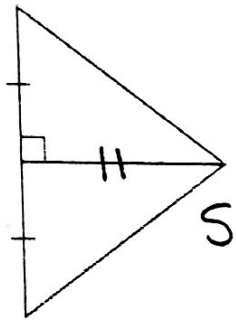
ASA ≅

5.



SSS ≅

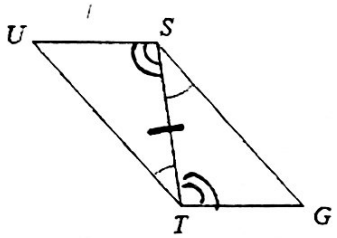
6.



SAS ≅

7. State what information is needed to prove the triangles are congruent using the given method and provide the triangle congruence statement.

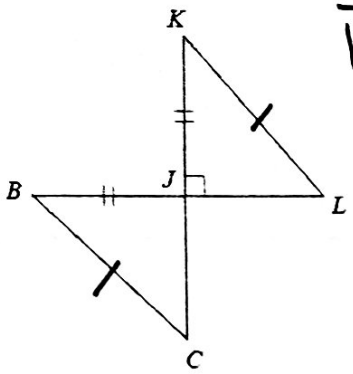
a) ASA



∠UST ≅ ∠STG

$\Delta STU \cong$ △TSG

b) HL



$\overline{KL} \cong \overline{BC}$

$\Delta JBC \cong$ △JKL

8. If $\Delta RTY \cong \Delta ASD$, complete the following statements:

a) $\measuredangle T \cong$ $\angle S$ b) $\overline{YR} \cong$ $\overline{DA}$ c) $\measuredangle SDA \cong$ $\angle TYR$

9. Given $\Delta HKP \cong \Delta STC$, KP = 2x – 8, and TC = 3x – 20. What is the measure of segment TC?

$2x-8=3x-20$

$x=12$

$TC=16$

10. Given $\Delta WSX \cong \Delta MJY$, $m\measuredangle W = 5x+3$, and $m\measuredangle M = 6x-5$. What is the measure of $\measuredangle M$?

$5x+3=6x-5$

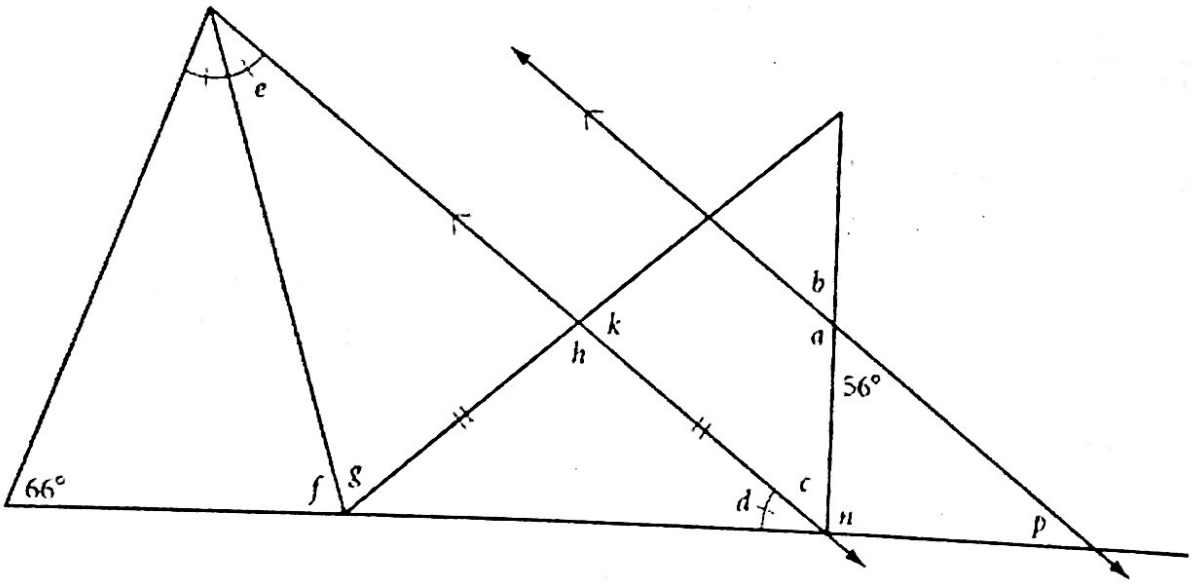
$x=8$

$m\angle M=43°$

11. Use the diagram below to solve for each missing angle. *Disclaimer: Figures may not be drawn to scale.*

a = 124° b = 56° c = 56° d = 38° e = 38° f = 76°

g = 66 h = 104 k = 76 n = 86 p = 38°



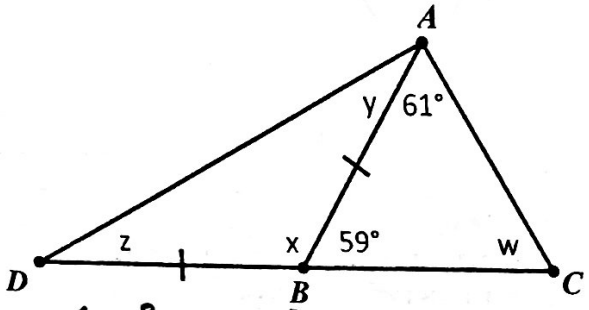
12. In ΔLMC, $\measuredangle MCL = 37°, \measuredangle MLC = 106°, \measuredangle CML = 37°$. Classify the triangle by angles and sides.

obtuse

isosceles

In each figure below, solve for the missing variable

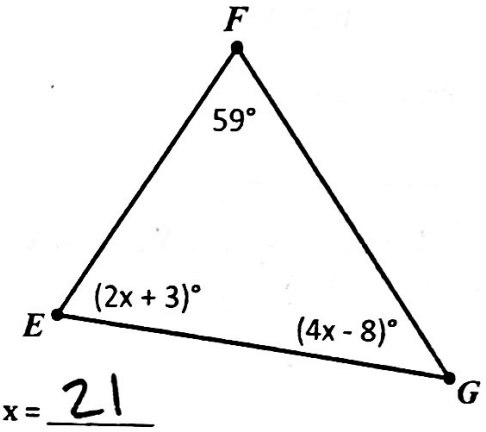
a)



w = 60° x = 121°

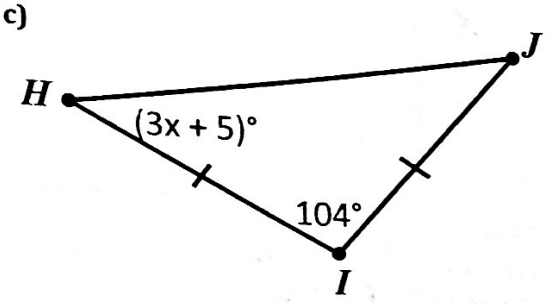
y = 29.5° z = 29.5°

b)



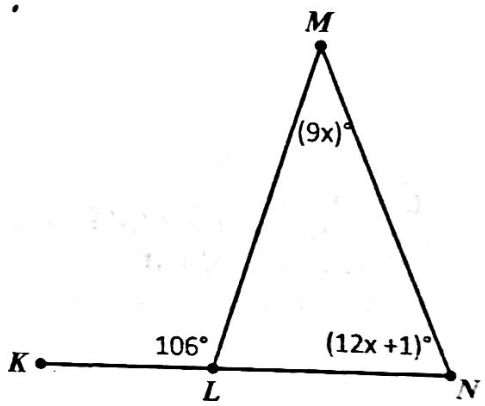
x = 21

c)



x = 11

d)

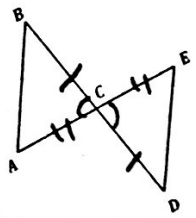


x = 5

Complete the following proofs. ***Make sure you mark your figures!!!***

14. Given: C is the midpoint of $\overline{AE}$
C is the midpoint of $\overline{BD}$

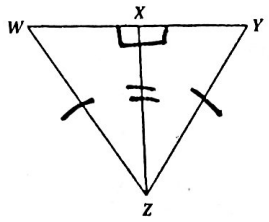
Prove: $\Delta ABC \cong \Delta EDC$



Statements	Reasons
1. C is midpoint of $\overline{AE}$	1. Given
2. C is midpoint of $\overline{BD}$	2. Given
3. $\overline{BC} \cong \overline{CD}$	3. Definition of midpoint
4. $\overline{AC} \cong \overline{CE}$	4. Def. of Midpoint
5. $\angle BCA \cong \angle ECD$	5. vertical angles are $\cong$
6. $\Delta ABC \cong \Delta EDC$	6. SAS $\cong$

15. Given: $\angle WXZ$ and $\angle YXZ$ are right angles
$\overline{WZ} \cong \overline{YZ}$

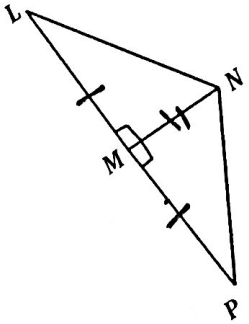
Prove: $\angle W \cong \angle Y$



Statements	Reasons
1. ∠WXZ and ∠YXZ are rt. angles	1. Given
2. $\overline{WZ} \cong \overline{YZ}$	2. Given
3. ∠WXZ ≅ ∠YXZ	3. Right angles ≅ Thm.
4. $\overline{XZ} \cong \overline{XZ}$	4. Reflexive Prop.
5. $\Delta WXZ \cong \Delta YXZ$	5. HL ≅
6. $\angle W \cong \angle Y$	6. CPCTC

16. Given: $\overline{LM} \cong \overline{MP}$
$\angle NML$ and $\angle NMP$ are right angles

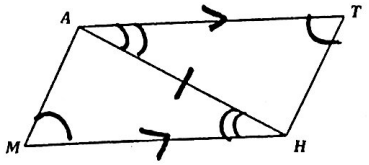
Prove: $\Delta NML \cong \Delta NMP$



Statements	Reasons
1. $\overline{LM} \cong \overline{MP}$	1. Given
2. ∠NML and ∠NMP are right ∠s	2. Given
3. ∠NML ≅ ∠NMP	3. Right ∠ ≅ Thm.
4. $\overline{NM} \cong \overline{NM}$	4. Reflexive prop
5. $\Delta NML \cong \Delta NMP$	5. SAS ≅

17. Given: $\overline{AT} \parallel \overline{MH}$
$\angle M \cong \angle T$

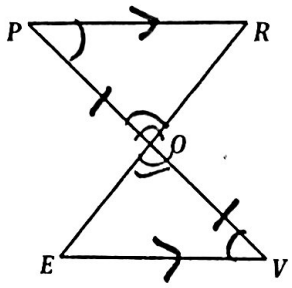
Prove: $\overline{MA} \cong \overline{TH}$



Statements	Reasons
1. $\overline{AT} \parallel \overline{MH}$	1. Given
2. ∠M ≅ ∠T	2. Given
3. ∠TAH ≅ ∠AHM	3. Alt. int. ∠s ≅ Thm
4. $\overline{AH} \cong \overline{AH}$	4. Reflexive prop.
5. $\Delta AMH \cong \Delta HTA$	5. AAS ≅
6. $\overline{MA} \cong \overline{TH}$	6. CPCTC

18. Given: O is the midpoint of $\overline{PV}$
$\overline{PR} \parallel \overline{EV}$

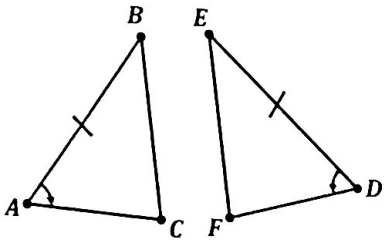
Prove: $\Delta PRO \cong \Delta VEO$



Statements	Reasons
1. O is midpoint $\overline{PV}$	1. Given
2. $\overline{PR} \parallel \overline{EV}$	2. Given
3. $\overline{PO} \cong \overline{OV}$	3. Def. of midpoint
4. $\angle P \cong \angle V$	4. Alt. int. $\angle$s $\cong$ Thm.
5. $\angle POR \cong \angle EOV$	5. vertical angles $\cong$ Thm.
6. $\Delta PRO \cong \Delta VEO$	6. ASA $\cong$

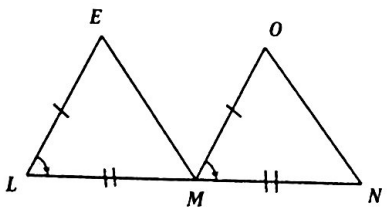
19. If $\Delta ABC \cong \Delta DEF$ by AAS, what additional piece of information needs to be marked?

$\angle C \cong \angle F$



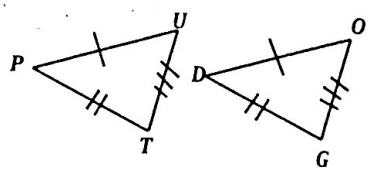
20. Given the following triangles, determine how they are congruent and complete the triangle congruence statement.

a)



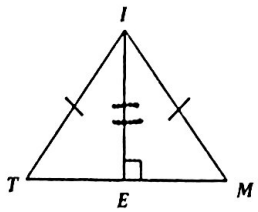
$\Delta LEM \cong$ MON by SAS $\cong$

b)



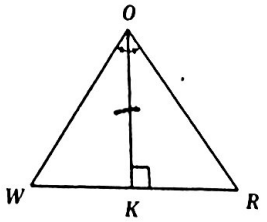
$\Delta PUT \cong$ DOG by SSS $\cong$

c)



$\Delta TIE \cong$ MIE by HL $\cong$

d)



$\Delta KOW \cong$ KOR by ASA $\cong$