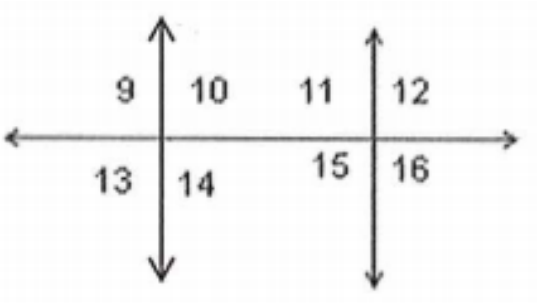
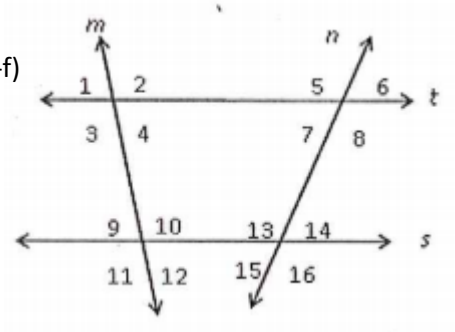
Unit 4-Review- (parallel lines and transversals, congruent triangles, midsegents)

1. Identify each set of angles below as corresponding, vertical, alternate interior, alternate exterior, consecutive or linear pair. (use the figure to the right to answer a-h)



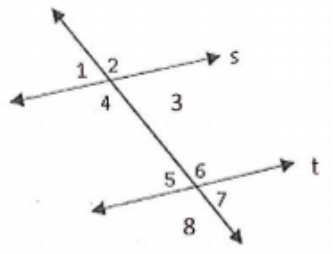
   a. $\angle 9 \text{ and } \angle 16$ _____
   b. $\angle 9 \text{ and } \angle 11$ _____
   c. $\angle 15 \text{ and } \angle 11$ _____
   d. $\angle 14 \text{ and } \angle 15$ _____
   e. $\angle 10 \text{ and } \angle 15$ _____
   f. $\angle 13 \text{ and } \angle 14$ _____
   g. $\angle 12 \text{ and } \angle 15$ _____
   h. $\angle 14 \text{ and } \angle 11$ _____

2. Solve for the missing angle value given: $m\angle 2 = 98° \text{ and } m\angle 6 = 83°$
(use the figure to the right o answer a-f)



   a. $m\angle 3 =$ _____
   b. $m\angle 5 =$ _____
   c. $m\angle 10 =$ _____
   d. $m\angle 7 =$ _____
   e. $m\angle 9 =$ _____
   f. $m\angle 16 =$ _____

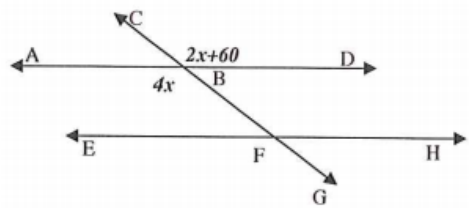
3. Find the value of x, given that $s \parallel t$ (use the figure to the right to solve a-c)



   a. $m\angle 4 = 77°, m\angle 8 = 4x + 57$ x=_____
   b. $m\angle 3 = 5x + 13, m\angle °5 = 53°$ x=_____
   c. $m\angle 1 = 6x - 5, m\angle 7 = 115°$ x=_____

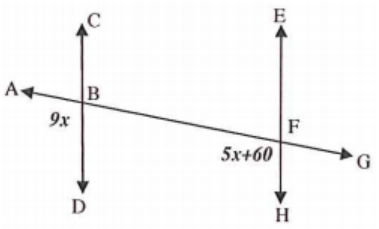
Solve for the missing variable and the missing angle values that are indicated (#4-7)

4.



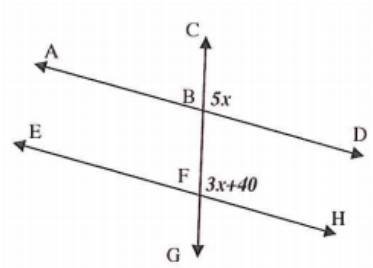
Equation:_____
X=_____ $m\angle CBD =$ _____ $m\angle ABF =$ _____

5.



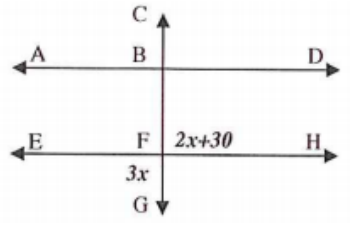
Equation:_____
X=_____ $m\angle HFB =$ _____ $m\angle ABD$_____

6.



Equation:_____
X=_____ $m\angle CBD =$ _____ $m\angle ABF =$ _____

7.

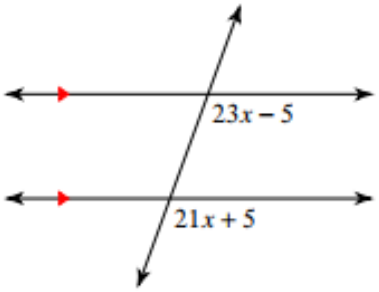


Equation:_____
X=_____ $m\angle HFB =$ _____ $m\angle EFG$_____

Fill in the following proof (#8-9)

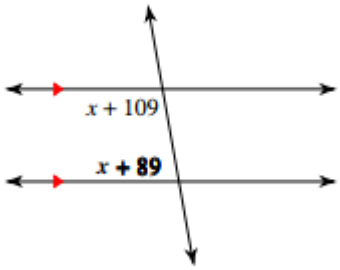
8. Given the diagram below, prove that x=5

Statement	Reason
1. 23x-5=21x+5	
2.	Subtraction Property
3. 2x-5=5	
4.	Addition Property
5. 2x=10	
6.	
7. x=5	



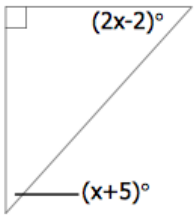
9. Give the diagram below, prove that the bold angle is 80°

Statement	Reason
1. x+109+x+89=180	
2.	
3. 2x+198-198=180-198	
4.	Substitution
5.	Division Property
6. x=-9	
7. (-9)+89=80°	



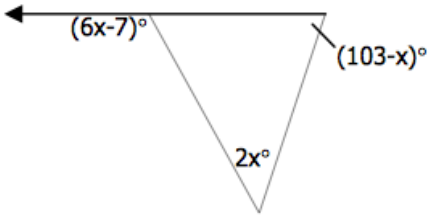
Solve for the indicated values (#10-14)

10.



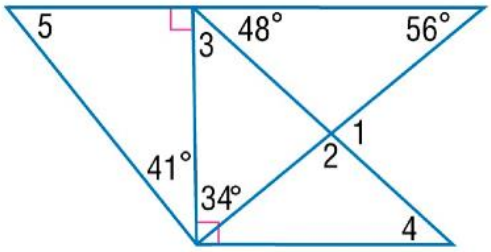
x=_____

11.



x=_____

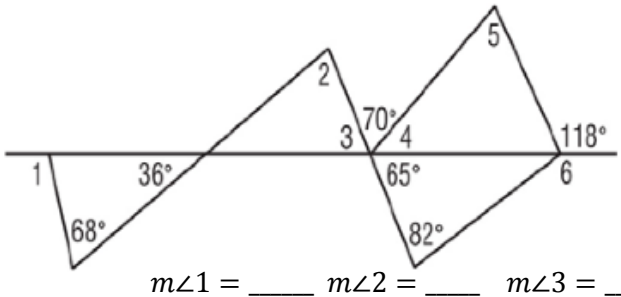
12.



$m\angle 1 =$ ____ $m\angle 2 =$ ____ $m\angle 3 =$ ____

$m\angle 4 =$ ____ $m\angle 5 =$ ____

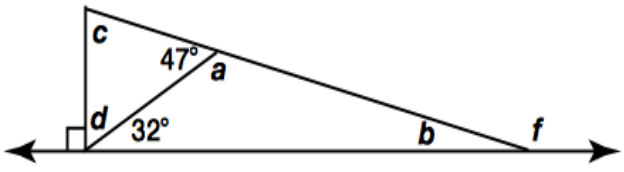
13.



$m\angle 1 =$ ____ $m\angle 2 =$ ____ $m\angle 3 =$ ____

$m\angle 4 =$ ____ $m\angle 5 =$ ____ $m\angle 6 =$ ____

14.



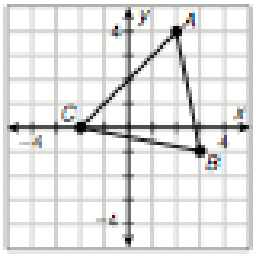
a=_____ b=_____ c=_____

d=_____ f=_____

Determine the distance or midpoint of the following line segments (#15-17)

15. (4, 6) (1,5) Distance:_____ Midpoint:_____

16. (7, -5) (9, -1) Distance:_____ Midpoint:_____

17. 

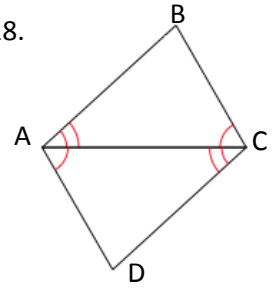
AB=_____

BC=_____

AC=_____

Perimeter of ΔABC=_____

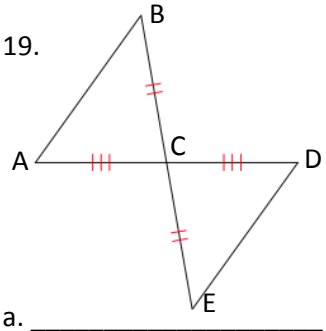
Determine if the following figures are congruent, if they are give a congruence statement and why the two shapes are congruent. a. Are the triangles congruent b. Give a congruence statement c. Why are the triangles congruent

18. 

a. _____

b. _____

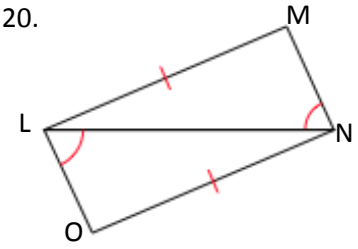
c. _____

19. 

a. _____

b. _____

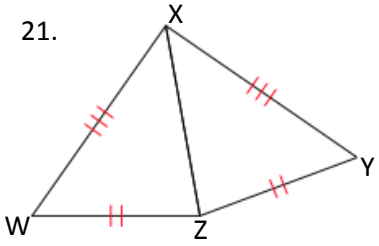
c. _____

20. 

a. _____

b. _____

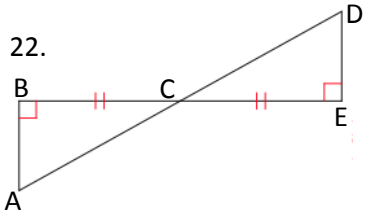
c. _____

21. 

a. _____

b. _____

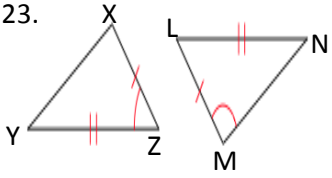
c. _____

22. 

a. _____

b. _____

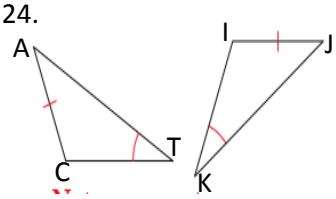
c. _____

23. 

a. _____

b. _____

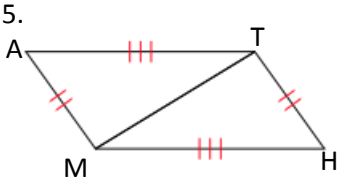
c. _____

24. 

a. _____

b. _____

c. _____

25. 

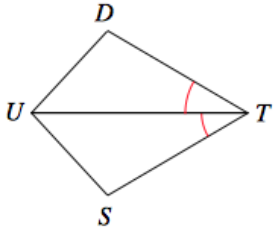
a. _____

b. _____

c. _____

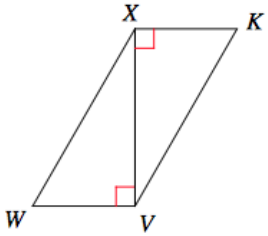
What additional information is needed in order to prove that the triangles are congruent by the Theorems stated:

26. ASA



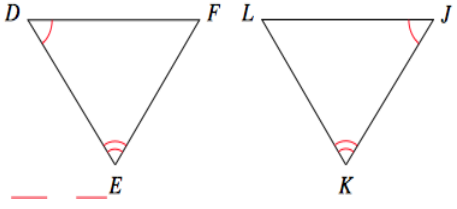
_____

27. SAS



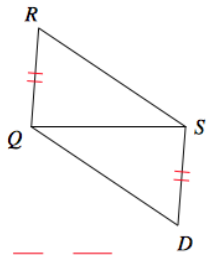
_____

28. ASA

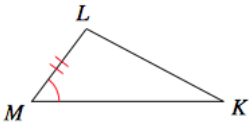


_____

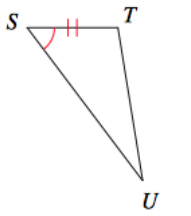
29. SSS

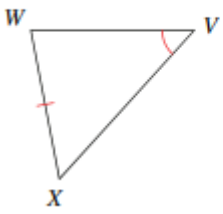


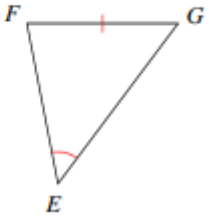
30. ASA



31. AAS

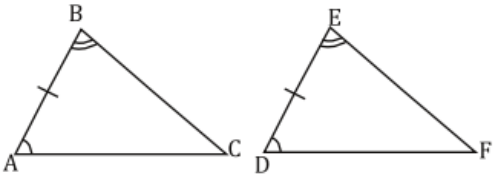






Prove that the triangles are congruent by: SSS, SAS, AAS, or ASA

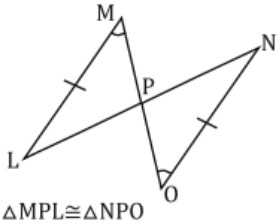
32. Given: $\overline{AB} \cong \overline{DE}$, $\angle B \cong \angle E$, and $\angle A \cong \angle D$



Prove: $\triangle ABC \cong \triangle DBC$

Statement	Reason
1. $\overline{AB} \cong \overline{DE}$	1. Given
2.	2. Given
3. $\angle A \cong \angle D$	3.
4.	4.

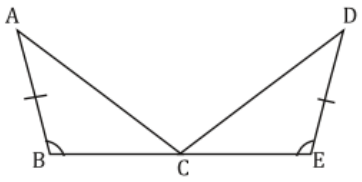
33. Given: $\overline{LM} \cong \overline{NO}$, and $\angle M \cong \angle O$



Prove: $\triangle MPL \cong \triangle NPO$

Statement	Reason
1. $\overline{LM} \cong \overline{NO}$	1.
2.	2. Given
3.	3.
4.	4. AAS

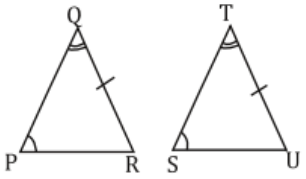
34. Given: C is the midpoint of $\overline{BE}$, $\angle B \cong \angle E$, and $\overline{AB} \cong \overline{DE}$



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

Statement	Reason
1. $\angle B \cong \angle E$	1.
2. $\overline{AB} \cong \overline{DE}$	2.
3.	3.Given
4.	4. Midpoint
5. $\Delta ABC \cong \Delta DEC$	5.

35. Given: $\angle P \cong \angle S$, $\angle Q \cong \angle T$, and $\overline{QR} \cong \overline{TU}$

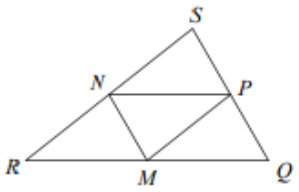


Prove: $\triangle PQR \cong \triangle STU$

Statement	Reason
1.	1.
2.	2.
3.	3.
4.	4.

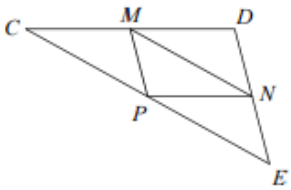
In each triangle, M, N, and P are midpoints of the sides. Name a segment parallel to the one given.

35.



_____ $\| \overline{QS}$

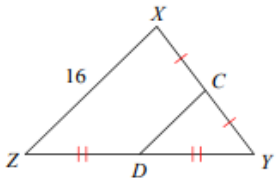
36.



_____ $\| \overline{CD}$

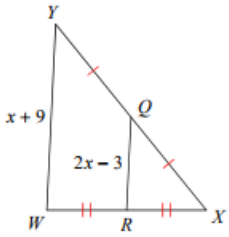
Find the given length indicated.

37.



CD=_____

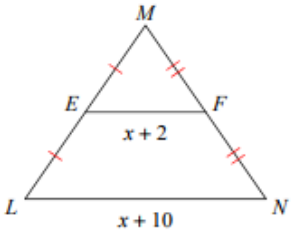
38.



x=_____

QR=_____

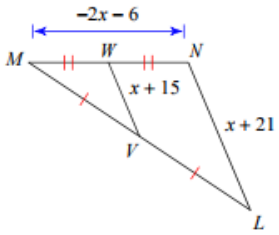
39.



x=_____

LN=_____

40.



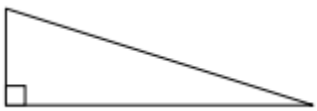
x=_____

NL=_____

MN=_____

Identify the triangle by its side and angle.

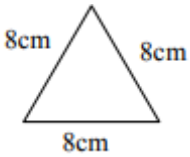
41.



_____

_____

42.



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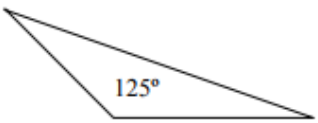
43.



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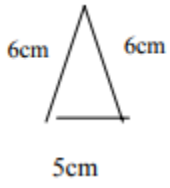
44.



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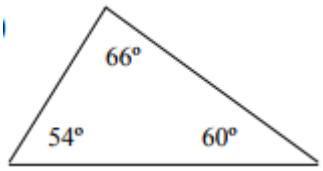
45.



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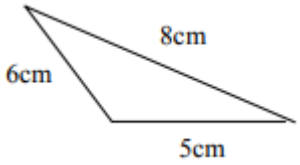
_____

46.

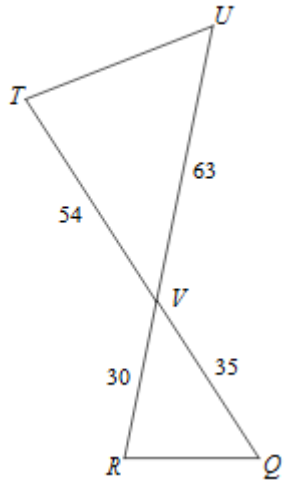


_____

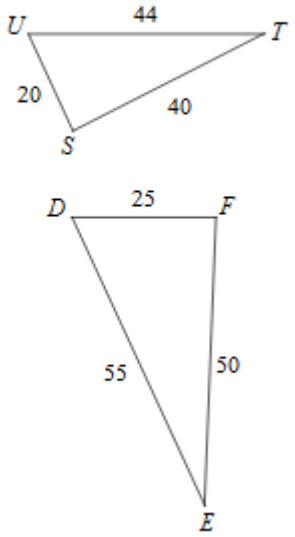
_____

Determine whether or not each pair of triangles are similar. If they are similar, state why. (SSS~, SAS~, AA~).

48. $\triangle VUT \sim \triangle VQR$



49. $\triangle DEF \sim \triangle UTS$



50.

Similar: YES or NO

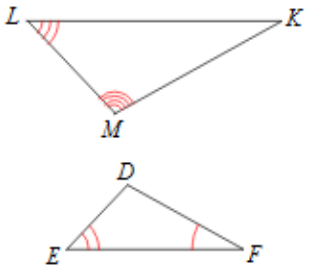
Similar: YES or NO

Similar: YES or NO

_____

_____

22) $\triangle KLM \sim \triangle FED$



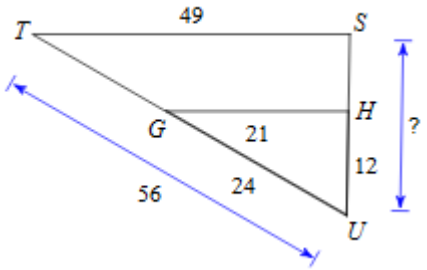
Similar: YES or NO

_____

_____

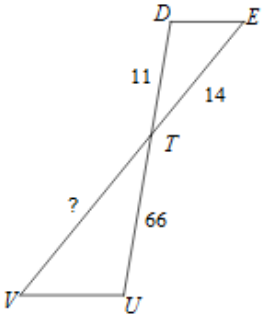
Each triangle below is similar. Find the length of the missing side.

23)



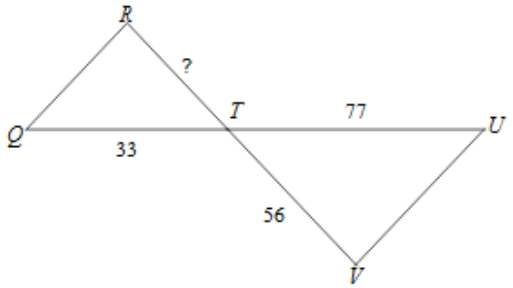
?=_____

52. $\triangle TUV \sim \triangle TDE$



?=_____

53. $\triangle TUV \sim \triangle TQR$



?=_____