FBM#1 – REVIEW

Using a property from algebra, justify the following statements.

1. **LM = LM**
2. **If $m < A = m < B$ and $m < B = m < C$, then $m < A = m < C$.**
3. $2(x + 5) = 2x + 10$
4. **If x = 10 and 3x = y, then 30 = y.**
5. **If x = 9, then 9 = x.**
6. **If 8x = 80, then x = 10.**
7. **If $x = y$, then $x - 3 = y - 3$.**
8. $\angle CAT \cong \angle TAC$
9. **If x = 10, then x + 5 = 10 + 5**
10. **If 6x = 8, then 12x = 16**

11. **Given: ΔGEO ≅ ΔMTR. You can conclude that:**
    a. $\angle O \cong \angle T$ **b.** $\overline{EG} \cong \overline{TM}$ **c.** $\angle OGE \cong \angle MRT$ **d.** $\overline{RM} \cong \overline{OG}$ **e.** $\overline{GE} \cong \overline{MT}$

12. **Given: Δ RGA and ΔPMC with $\overline{RG} \cong \overline{PC}$, $\angle A \cong \angle M$, and $\angle G \cong \angle P$. Which method could be used to prove that Δ RGA ≅ ΔPMC?**
    b. SSS b. SAS c. AAS d. ASA e. Not enough information for a proof.

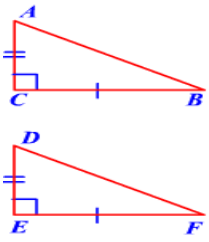
13. **The measures of the angles of a triangle are 2x + 10, 3x and 8x – 25. Solve for x.**

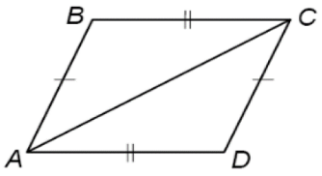
14. **If ΔTAR ≅ ΔDEW, the $\angle A \cong$ _____, $\overline{RT} \cong$ _____, and ΔART ≅ _____.**

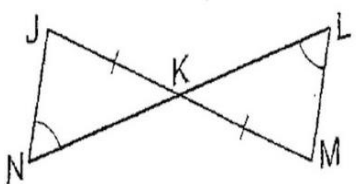
15. **Give the image points of the line segment ΔABC, which of the following would result in similar figures?**
    A(-3, 7) B(4, 2) C(0, 5)

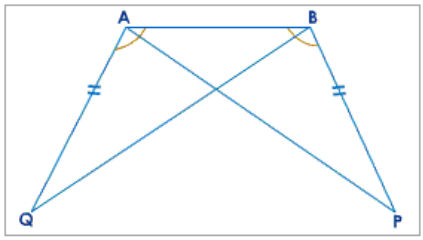
    a. A' (-3, -7) B'(4, -2) C'(0, -5)
    b. A' (7, -3) B'(2, 4) C'(5, 0)
    c. A' (-1, 6) B'(6, 1) C'(2, 4)
    d. A' (-6, 14) B'(8, 4) C'(0, 10)

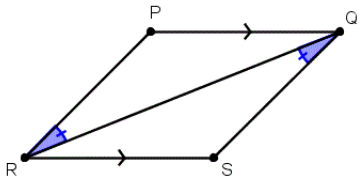
For problems 16 – 21: Determine if the triangles are congruent. MARK your diagrams! If so, write a congruency statement AND state the method of proving them congruent. If not, write "no congruence".

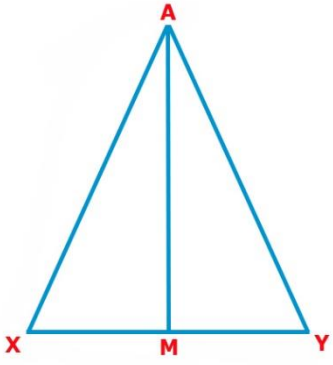
16. 

17. 

18. 

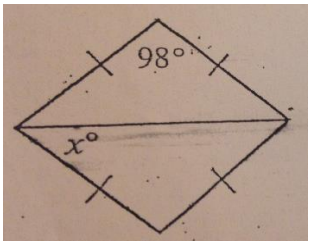
19. 

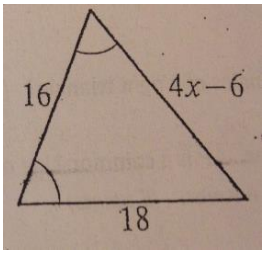
20. 

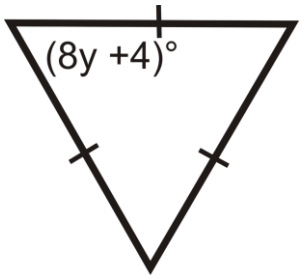
21. 

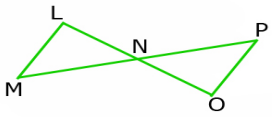
Given: $AM \perp XY$, AX=AY

For problems 22-24, find the value of x or y.

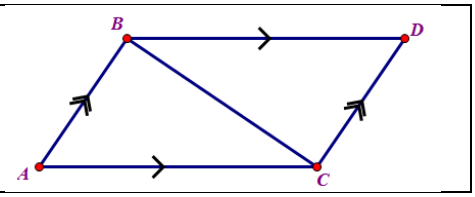
22. 

23. 

24. 

25. Given: N is the midpoint of $\overline{MP}$, $\overline{LM} \parallel \overline{OP}$ Prove: $\Delta LNM \cong \Delta ONP$	

26. Given: $\boldsymbol{AB \parallel CD, AC \parallel BD}$
Prove: $\boldsymbol{\overline{AB} \cong \overline{CD}}$

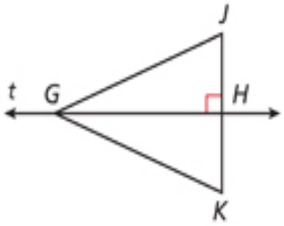


27. Given that line t is the perpendicular bisector of $\boldsymbol{\overline{JK}}$ and GK = 9.73, find GJ

28. Given that line t is the perpendicular bisector of $\boldsymbol{\overline{JK}}$, JG = 2x + 7 and KG = 5x – 17, find KG

29. Given that GJ = 70.2, HK = 17.5, and GK = 70.2, find JK.

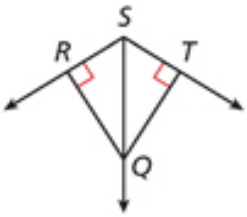
30. Given that line t is the perpendicular bisector of $\boldsymbol{\overline{JK}}$, If JH = 2x-1 , GJ = 4x-2 and GK = 2x+10, find JH



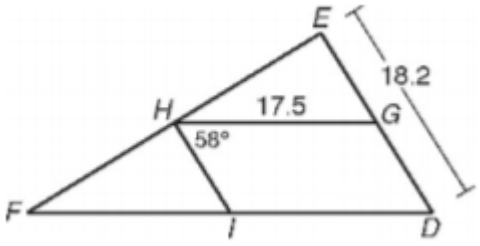
31. Given that $\boldsymbol{m\angle RSQ = m\angle TSQ}$ and TQ = 1.3, find QR

32. Given that $\boldsymbol{m\angle RSQ = 58^\circ}$, RQ = 49 and TQ = 49, find $\boldsymbol{m\angle RST}$

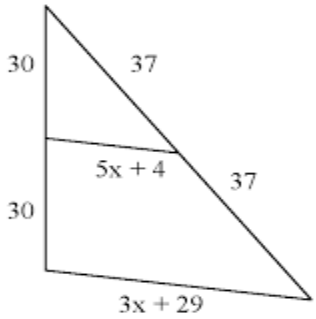
33. Given that RQ = TQ, $\boldsymbol{m\angle QSR = (2a + 48)^\circ}$ and $\boldsymbol{m\angle QST = (6a + 40)^\circ}$, find $\boldsymbol{m\angle RST}$



34. HI = ?	**37) DF = ?**
35. GE = ?	**38) m < HIF = ?**
36. m < HGD = ?	**39) m < D = ?**

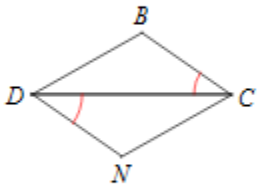


40) Solve for x

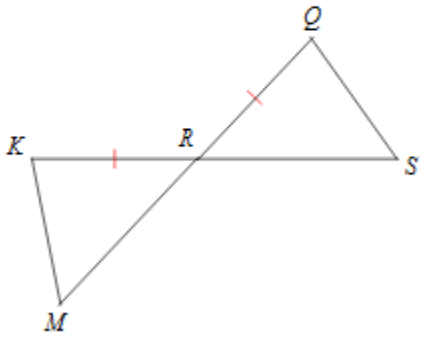


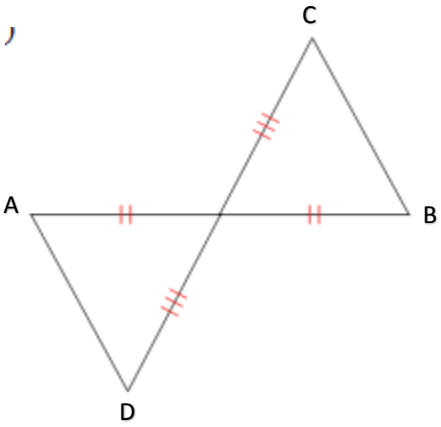
State what additional information is required in order to know that the triangles are congruent for the reason given.

1) SAS



2) AAS

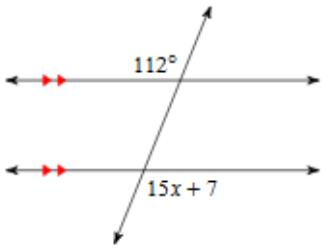




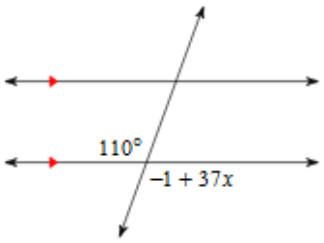
If m∠A = 2x + 4, m∠B = 7x – 1 and m∠C = 2x + 9, find measure of angles A, B, C, and D

Solve for x.

3)



4)



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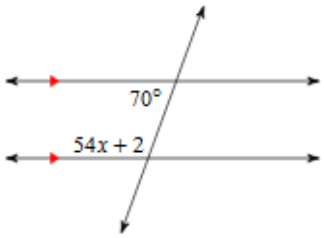

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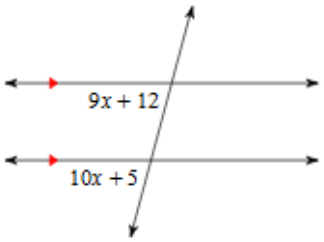
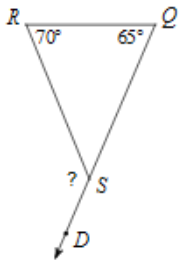


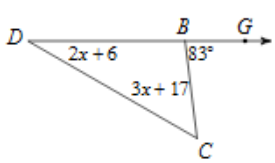
Find the measure of each angle indicated.

1)

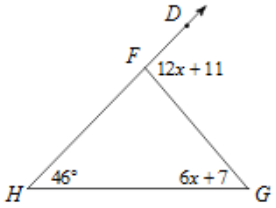


Solve for x.

2)

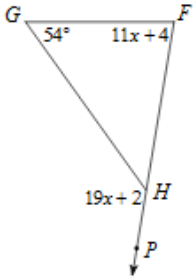


3)



Find the measure of the angle indicated.

4) Find $m\angle PHG$.



Solve each proportion.

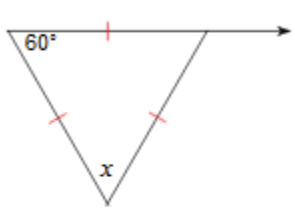
1) $\dfrac{m+5}{3m-10} = -\dfrac{2}{8}$

2) $\dfrac{9}{x+5} = \dfrac{2}{3x-4}$

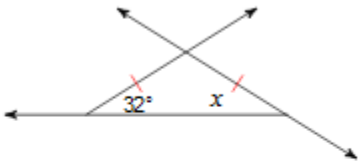
Draw and label an isosceles triangle

Find the value of x.

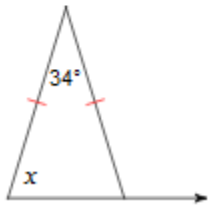
4)



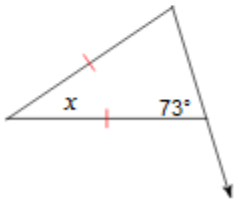
5)



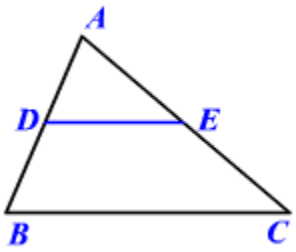
6)



7)



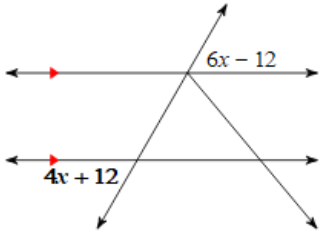
If a triangle is equilateral, it is also _____. This means that each angle is _____ degrees.



IF DE is the midsegment of Triangle ABC, list everything you know about the above diagram.

Find the measure of the angle indicated in bold.

13)



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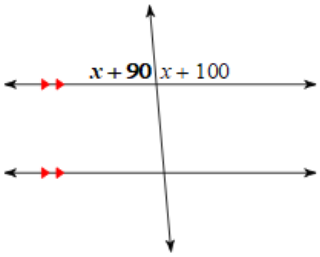
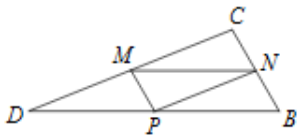


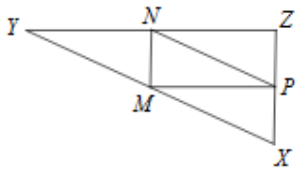
In each triangle, M, N, and P are the midpoints of the sides. Name a segment parallel to the one given.

8)



___ $\| \overline{CB}$

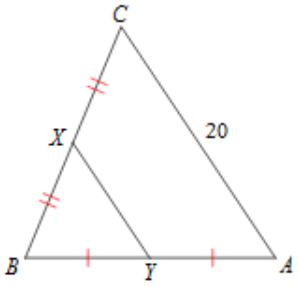
9)



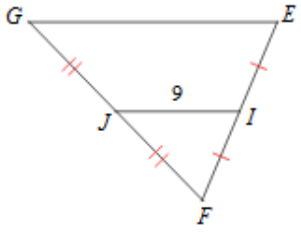
$\overline{XZ} \|$ ___

Find the missing length indicated.

10) Find YX

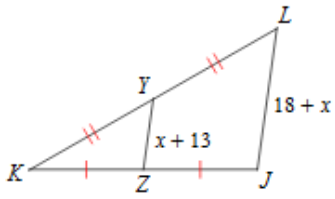


11) Find EG



Solve for x.

12)



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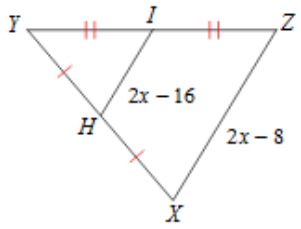
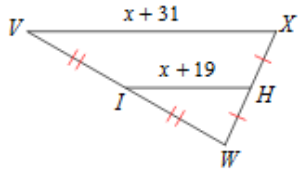
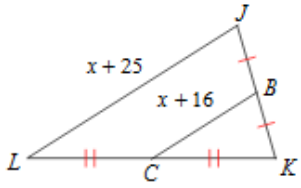


Find the missing length indicated.

14) Find XV

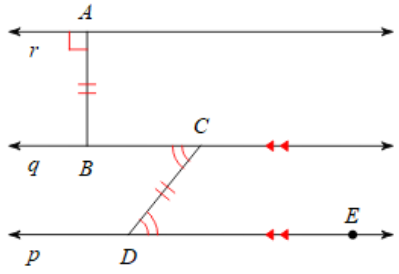


15) Find JL



List all information given by the marks on the diagram.

3)



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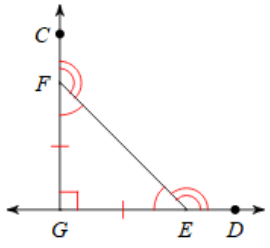
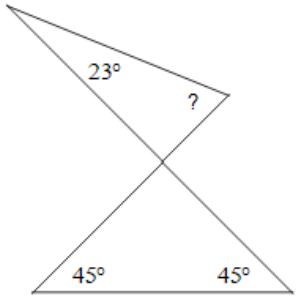


Find the measure of each angle indicated.

5)



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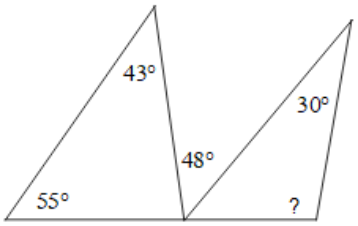
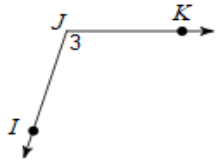


Name each angle in four ways.

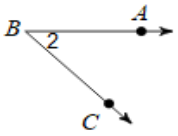
7)



Choose the wrong name for this angle:

A) $\angle 3$ B) $\angle J$
C) $\angle K$ D) $\angle KJI$

8)

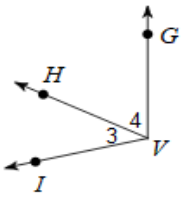


Choose the wrong name for this angle:

A) $\angle BCA$ B) $\angle ABC$
C) $\angle B$ D) $\angle 2$

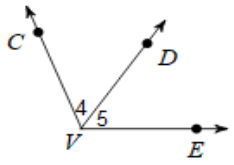
Name all the angles that have *V* as a vertex.

9)



A) $\angle 3, \angle 4, \angle IVG$
B) $\angle 3, \angle 4, \angle HIV$
C) $\angle 3, \angle 4, \angle VGH$
D) $\angle 3, \angle 4, \angle GHI$

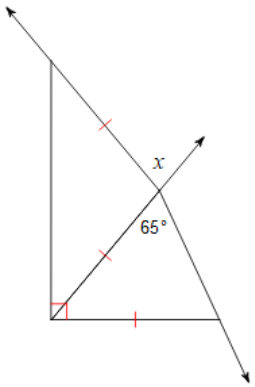
10)



A) $\angle 4, \angle 5, \angle CVE$
B) $\angle 4, \angle 5, \angle DCV$
C) $\angle 4, \angle 5, \angle EDC$
D) $\angle 4, \angle 5, \angle VED$

Find the value of *x*.

11)



12) $m\angle 2 = 18x + 2$