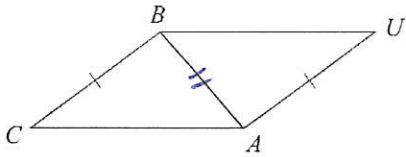
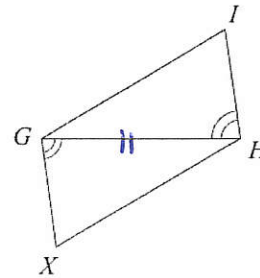


1-2. State what additional information is required in order to prove that the triangles are congruent by the given theorem.

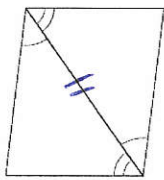
1) SAS $\angle UAB \cong \angle CBA$

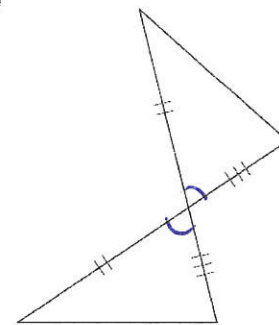


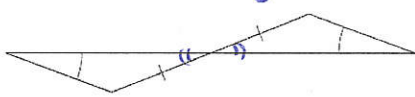
2) AAS $\angle I \cong \angle X$

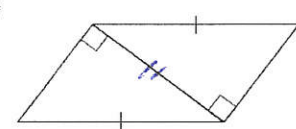


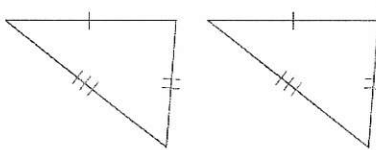
3-10. State if the two triangles are congruent. If they are, state how you know.

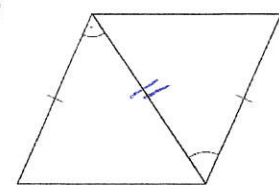
3)  Yes by ASA

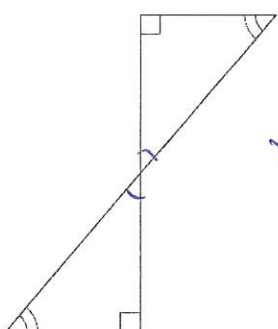
4)  Yes by SAS

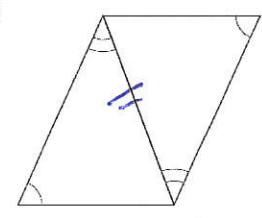
5)  Yes by AAS

6)  Yes, by HL

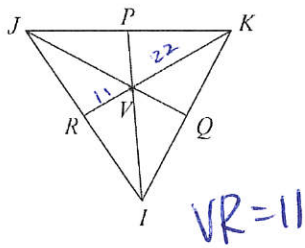
7)  Yes, by SSS

8)  Yes, by SAS

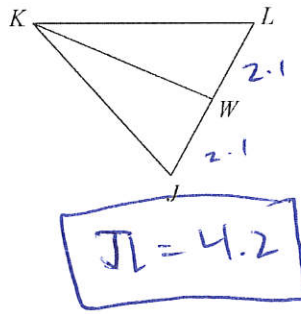
9)  ~~Yes~~ Not enough info

10)  Yes, by AAS

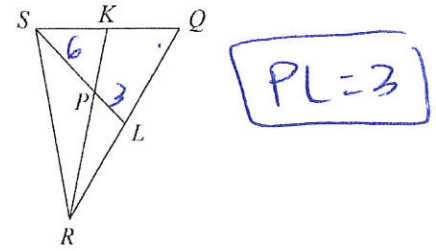
11. V is the Centroid.
Find VR if $KR = 33$



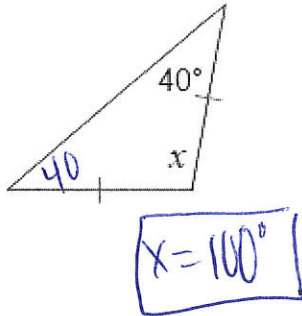
12. W is the midpoint of JL .
Find JL if $WL = 2.1$



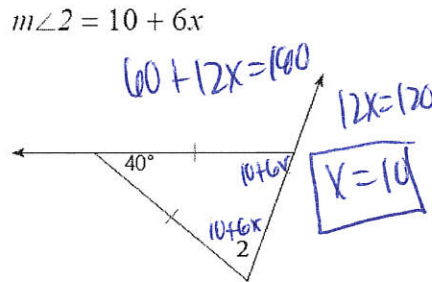
13. L is the midpoint of RQ .
Find PL if $SP = 6$



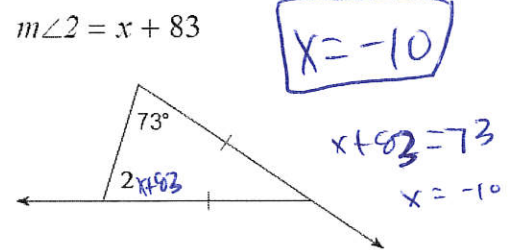
14. Find the value of x .



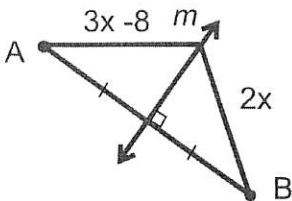
15. Find the value of x .



16. Find the value of x .

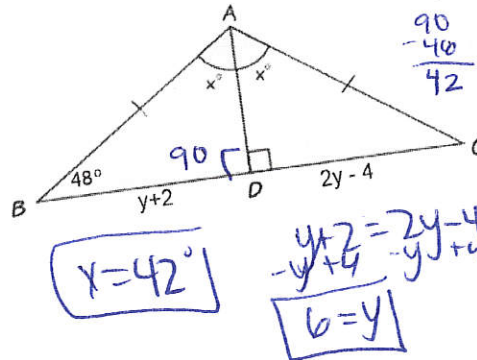


17. Find the value of x .



$$\begin{aligned} 2x &= 3x - 8 \\ -3x &-3x \\ -x &= -8 \\ x &= 8 \end{aligned}$$

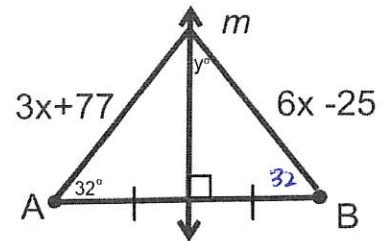
18. Find the value of x and y .



$$\begin{aligned} 48 + x + x &= 180 \\ 48 + 2x &= 180 \\ 2x &= 132 \\ x &= 66 \end{aligned}$$

$$\begin{aligned} y + 2 &= 2y - 4 \\ -y + 4 &= -y + 4 \\ 6 &= y \end{aligned}$$

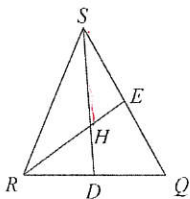
19. Find the value of x and y .



$$\begin{aligned} 3x + 77 &= 6x - 25 \\ 102 &= 3x \\ \frac{102}{3} &= \frac{3x}{3} \\ x &= 34 \end{aligned}$$

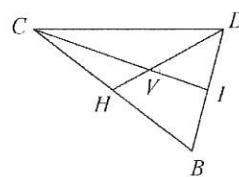
$$\begin{aligned} 32 + y + 32 &= 180 \\ y &= 116 \end{aligned}$$

20. Find x if $SH = x - 7$ and $SD = x - 5$



$$\begin{aligned} x - 7 &= \frac{2}{3}(x - 5) \\ x - 7 &= \frac{2}{3}x - \frac{10}{3} + 7 \\ +7 &- \frac{2}{3}x \\ \frac{1}{3}x &= \frac{11}{3} \\ x &= 11 \end{aligned}$$

21. Find x if $CI = 5x + 11$ and $VI = 5x - 9$

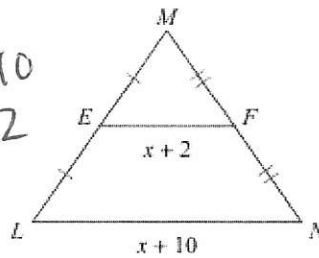


$$\begin{aligned} 3(5x - 9) &= 5x + 11 \\ 15x - 27 &= 5x + 11 \\ 10x &= 38 \\ x &= 3.8 \end{aligned}$$

Add

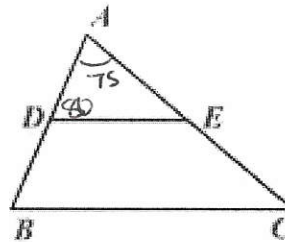
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22. Given: \overline{EF} is a midsegment of $\triangle MLN$, $\overline{LN} = x+10$
 $\overline{EF} = x+2$
 Prove: $x = 6$



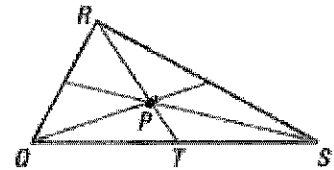
Statement	Reason
1. \overline{EF} is a midsegment of $\triangle MLN$	1. Given
2. $\overline{EF} = \frac{1}{2} \overline{LN}$	2. Midsegment = $\frac{1}{2}$ the third side
3. $\overline{LN} = x+10$; $\overline{EF} = x+2$	3. Given
4. $x+2 = \frac{1}{2}(x+10)$	4. Substitution
5. $2x+4 = x+10$	5. Mult / Division
6. $x+4 = 10$	6. Subtraction
7. $x = 6$	7. Subtraction

23. Given: $\angle A = 75^\circ$
 $\angle ADE = 80^\circ$
 \overline{DE} is a midsegment in $\triangle ABC$
 Prove: $\angle C = 25^\circ$



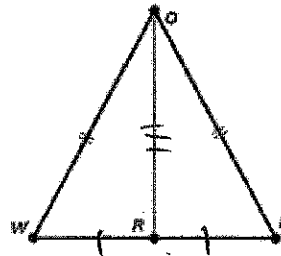
Statement	Reason
1. $\angle A = 75^\circ$; $\angle ADE = 80^\circ$	1. Given
2. $\angle A + \angle ADE + \angle AED = 180^\circ$	2. Angles in \triangle sum to 180°
3. $75^\circ + 80^\circ + \angle AED = 180^\circ$	3. Substitution
4. $155^\circ + \angle AED = 180^\circ$	4. Substitution
5. $\angle AED = 25^\circ$	5. Subtraction
6. \overline{DE} is a midsegment in $\triangle ABC$	6. Given
7. $\overline{DE} \parallel \overline{BC}$	7. Midsegment is \parallel to third side
8. $\angle AED \cong \angle C$	8. Corresponding \angle s are \cong
9. $\angle C = 25^\circ$	9. Transitive Prop

24. Given: P is the centroid of $\triangle QRS$
 $PR = 26$
 Prove: $PT = 13$



Statement	Reason
1. P is the centroid of $\triangle QRS$	1. Given
2. $PR = \frac{2}{3} RT$	2.
3. $PR = 26$	3. Given
4. $26 = \frac{2}{3} RT$	4. Substitution
5. $39 = RT$	5. Mult ($\frac{3}{2}$) or Divide ($\frac{2}{3}$)
6. $PR + PT = RT$	6. Segment Add. Postulate
7. $26 + PT = 39$	7. Substitution
8. $PT = 13$	8. Subtraction

25. Given: $\triangle WOK$ is isosceles
 R is the midpoint of \overline{WK}
 Prove: $\angle OWR \cong \angle OKR$



Statement	Reason
1. $\triangle WOK$ is isosceles	1. Given
2. $\overline{WO} \cong \overline{KO}$	2. Def'n of Isosceles
3. R is the midpoint of \overline{WK}	3. Given
4. $\overline{WR} \cong \overline{KR}$	4. Def'n of Midpt
5. $\overline{OR} \cong \overline{OR}$	5. Reflexive
6. $\triangle WRO \cong \triangle KRO$	6. SSS
7. $\angle OWR \cong \angle OKR$	7. CPCTC

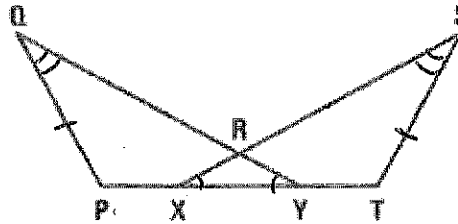
or!
 \hookrightarrow Isos Δ Thm

26. Given: $\triangle XRY$ is isosceles

$$\overline{PQ} \cong \overline{TS}$$

$$\angle Q \cong \angle S$$

Prove: $\overline{QY} \cong \overline{SX}$



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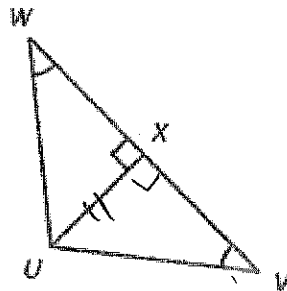
Statement	Reason
1. $\triangle XRY$ is isosceles	1. Given
2. $\angle x \cong \angle y$	2. Given ISOS. Δ Thm. IF ISOS, base \angle s \cong
3. $\overline{PQ} \cong \overline{TS}$	3. Given
4. $\angle Q \cong \angle S$	4. Given
5. $\triangle YQP \cong \triangle XST$	5. AAS
6. $\overline{QY} \cong \overline{SX}$	6. CPCTC

*

27. Given: $\overline{VW} \perp \overline{UX}$

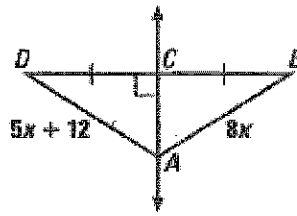
$$\angle V \cong \angle W$$

Prove: $\overline{WX} \cong \overline{VX}$



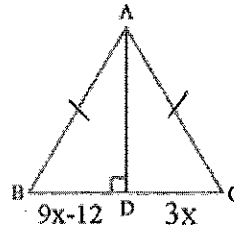
Statement	Reason
1. $\overline{VW} \perp \overline{UX}$	1. Given
2. $\angle UXV$ and $\angle UXW$ are right angles	2. Def'n of \perp
3. $\angle UXV \cong \angle UXW$	3. All right \angle s are \cong
4. $\angle V \cong \angle W$	4. Given
5. $\overline{UX} \cong \overline{UX}$	5. Reflexive Prop
6. $\triangle UVX \cong \triangle UWX$	6. AAS
7. $\overline{WX} \cong \overline{VX}$	7. CPCTC

* 28. Given: \overline{AC} is the \perp bisector of \overline{DB} $AD = 5x + 12$
 Prove: $AB = 32$ $AB = 8x$



Statement	Reason
1. \overline{AC} is the \perp bisector of \overline{DB}	1. Given
2. $\overline{AB} \cong \overline{AD}$	2. Perp. Bisector Thm
3. $AD = 5x + 12$; $AB = 8x$	3. Given
4. $8x = 5x + 12$	4. Substitution
5. $3x = 12$	5. Subtraction
6. $x = 4$	6. Division
7. $AB = 8(4)$	7. Substitution
8. $AB = 32$	8. Substitution

* 29. Given: $AB = AC$ $DC = 3x$, $BD = 9x - 12$
 $\angle ADB = 90^\circ$
 Prove: $BD = 6$



Statement	Reason
1. $AB = AC$, $\angle ADB = 90^\circ$	1. Given
2. $\overline{AD} \perp \overline{BC}$	2. Def'n of right \angle
3. $\overline{BD} = \overline{DC}$	3. Converse of \perp bisector Thm
4. $DC = 3x$ $BD = 9x - 12$	4. Given
5. $9x - 12 = 3x$	5. Substitution
6. $6x - 12 = 0$	6. Subtraction
7. $6x = 12$	7. Addition
8. $x = 2$	8. Division
9. $BD = 9(2) - 12$	9. Substitution
10. $BD = 6$	10. Substitution