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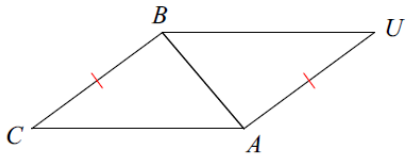
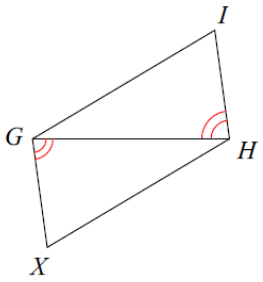
1-2. State what additional information is required in order to prove that the triangles are congruent by the given theorem.

1) SAS

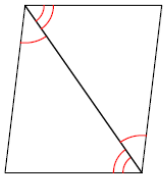


2) AAS



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

3)



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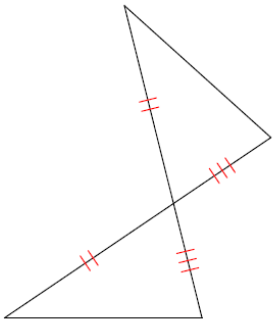

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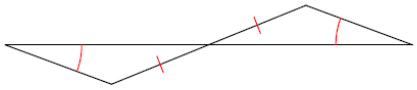

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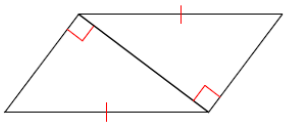

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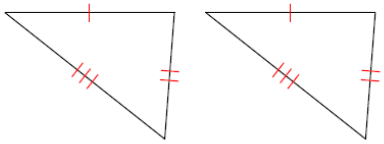

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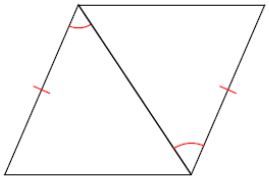

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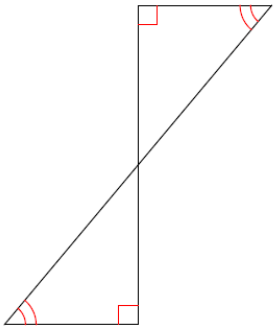

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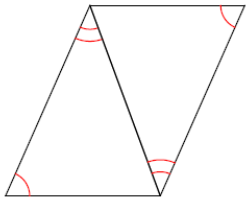

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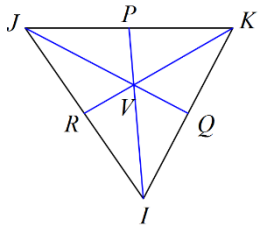
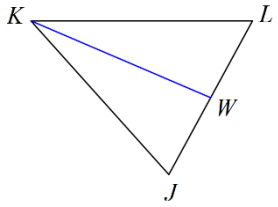
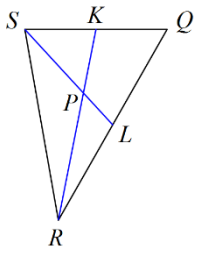
11. *V is the Centroid.*
Find VR if KR = 33



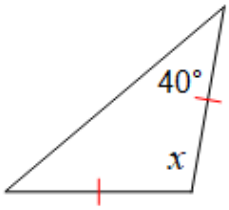
12. *W is the midpoint of JL.*
Find JL if WL = 2.1



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

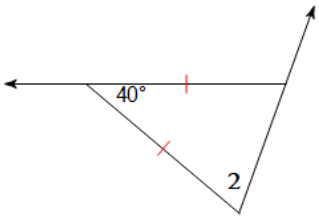


14. Find the value of x.



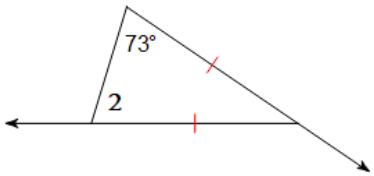
15. Find the value of x.

$m\angle 2 = 10 + 6x$

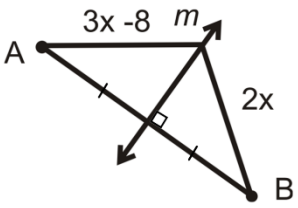


16. Find the value of x.

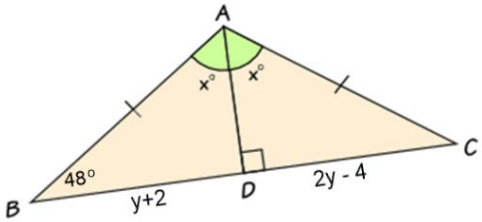
$m\angle 2 = x + 83$



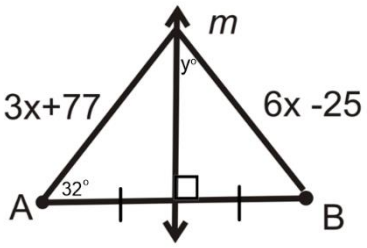
17. Find the value of x.



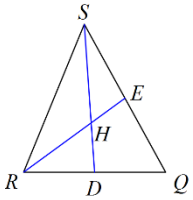
18. Find the value of x and y.



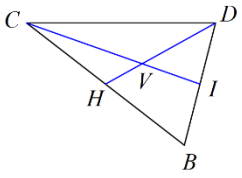
19. Find the value of x and y.



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



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



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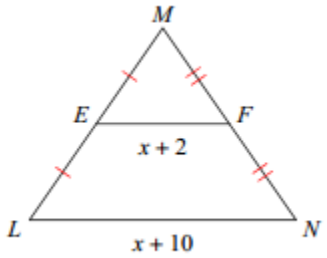
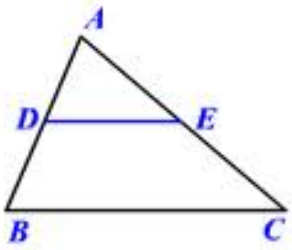
22. Given: $\overline{EF}$ is a midsegment of $\triangle MLN$
$\overline{LN} = x+10$; $\overline{EF} = x+2$
Prove: $x = 6$



Statement	Reason
1. $\overline{EF}$ is a midsegment of $\triangle MLN$	1.
2. $\overline{EF} = \frac{1}{2}\overline{LN}$	2.
3. $\overline{LN} = x+10$; $\overline{EF} = x+2$	3.
4. $x+2 = \frac{1}{2}(x+10)$	4.
5. $2x+4 = x+10$	5.
6. $x+4 = 10$	6.
7. $x = 6$	7.

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.
2. $\angle A + \angle ADE + \angle AED = 180^\circ$	2.
3. $75^\circ + 80^\circ + \angle AED = 180^\circ$	3.
4. $155^\circ + \angle AED = 180^\circ$	4.
5. $\angle AED = 25^\circ$	5.
6. $\overline{DE}$ is a midsegment in $\triangle ABC$	6.
7. $\overline{DE} \parallel \overline{BC}$	7.
8. $\angle AED \cong \angle C$	8.
9. $\angle C = 25^\circ$	9.

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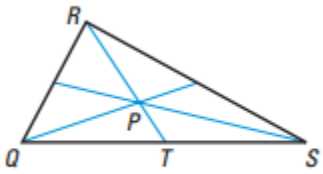
24. Given: P is the centroid of $\triangle QRS$

$PR = 26$

Prove: $PT = 13$

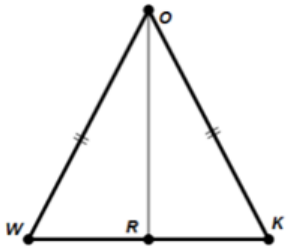


Statement	Reason
1. P is the centroid of $\triangle QRS$	1.
2. $PR = \frac{2}{3}RT$	2.
3. $PR = 26$	3.
4. $26 = \frac{2}{3}RT$	4.
5. $39 = RT$	5.
6. $PR + PT = RT$	6.
7. $26 + PT = 39$	7.
8. $PT = 13$	8.

25. Given: ΔWOK is isosceles

R is the midpoint of $\overline{WK}$

Prove: $\angle OWR \cong \angle OKR$



Statement	Reason
1. ΔWOK is isosceles	1.
2. $\overline{WO} \cong \overline{KO}$	2.
3. R is the midpoint of $\overline{WK}$	3.
4. $\overline{WR} \cong \overline{KR}$	4.
5. $\overline{OR} \cong \overline{OR}$	5.
6. $\Delta WRO \cong \Delta KRO$	6.
7. $\angle OWR \cong \angle OKR$	7.

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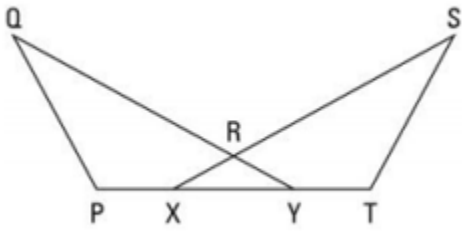
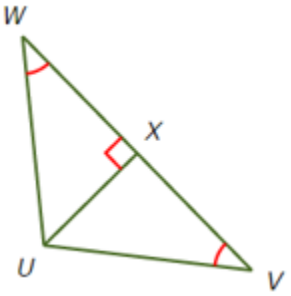
26. Given: ΔXRY is isosceles
$\overline{PQ} \cong \overline{TS}$
$\angle Q \cong \angle S$
Prove: $\overline{QY} \cong \overline{SX}$



Statement	Reason
1. ΔXRY is isosceles	1.
2. $\angle x \cong \angle y$	2.
3. $\overline{PQ} \cong \overline{TS}$	3.
4. $\angle Q \cong \angle S$	4.
5. $\Delta YQP \cong \Delta XST$	5.
6. $\overline{QY} \cong \overline{SX}$	6.

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.
2. $\angle UXV$ and $\angle UXW$ are right angles	2.
3. $\angle UXV \cong \angle UXW$	3.
4. $\angle V \cong \angle W$	4.
5. $\overline{UX} \cong \overline{UX}$	5.
6. $\triangle UVX \cong \triangle UWX$	6.
7. $\overline{WX} \cong \overline{VX}$	7.

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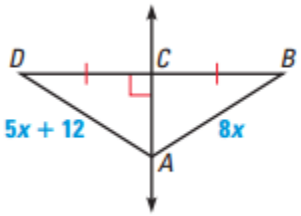
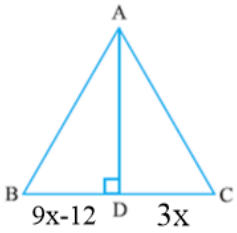
28. Given: $\overleftrightarrow{AC}$ is the $\perp$ bisector of $\overline{DB}$
$AD = 5x + 12$, $AB = 8x$
Prove: $AB = 32$



Statement	Reason
1. $\overleftrightarrow{AC}$ is the $\perp$ bisector of $\overline{DB}$	1.
2. $AD = AB$	2.
3. $AD = 5x + 12$; $AB = 8x$	3.
4. $8x = 5x + 12$	4.
5. $3x = 12$	5.
6. $x = 4$	6.
7. $AB = 8(4)$	7.
8. $AB = 32$	8.

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



Statement	Reason
1. $AB = AC$	1.
2. $\overline{AD} \perp \overline{BC}$	2.
3. $\overline{BD} = \overline{DC}$	3.
4. $DC = 3x$ $BD = 9x - 12$	4.
5. $9x - 12 = 3x$	5.
6. $6x - 12 = 0$	6.
7. $6x = 12$	7.
8. $x = 2$	8.
9. $BD = 9(2) - 12$	9.
10. $BD = 6$	10.