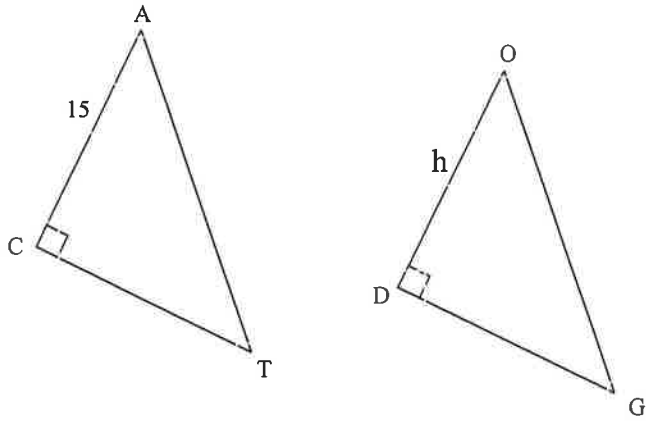
Name _____ Period ____

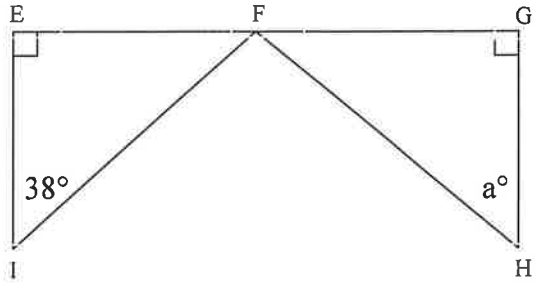
CPCTC Worksheet

I. Solve for the variable.

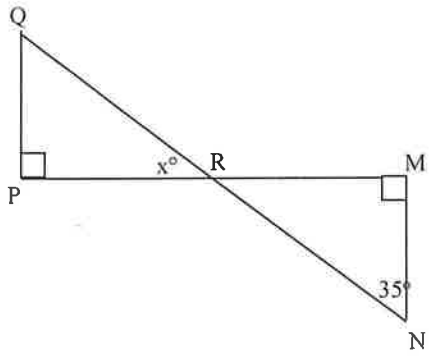
1. $\triangle CAT \cong \triangle DOG$. Find h.



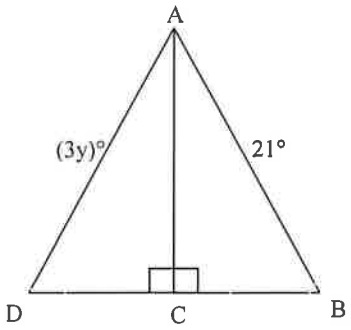
2. $\triangle IEF \cong \triangle HGF$. Find a.



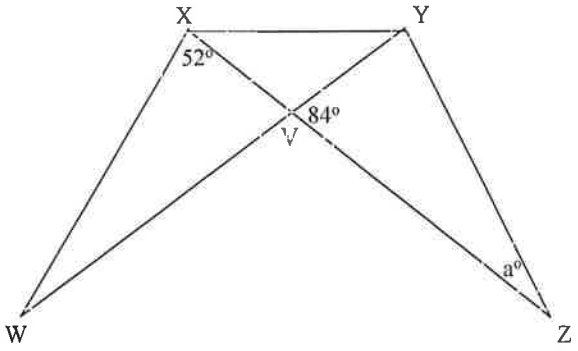
3. $\triangle PQR \cong \triangle MNR$. Find x.



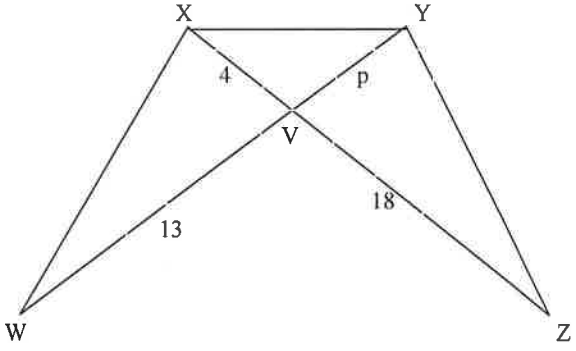
4. $\triangle ABC \cong \triangle ADC$. Find y.



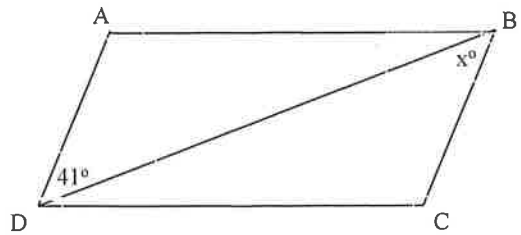
5. $\triangle WXV \cong \triangle ZYV$. Find a.



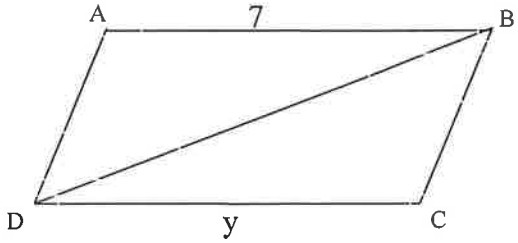
6. $\triangle WXY \cong \triangle ZYX$. Find p.



7. $\triangle ABD \cong \triangle CDB$. Find x.

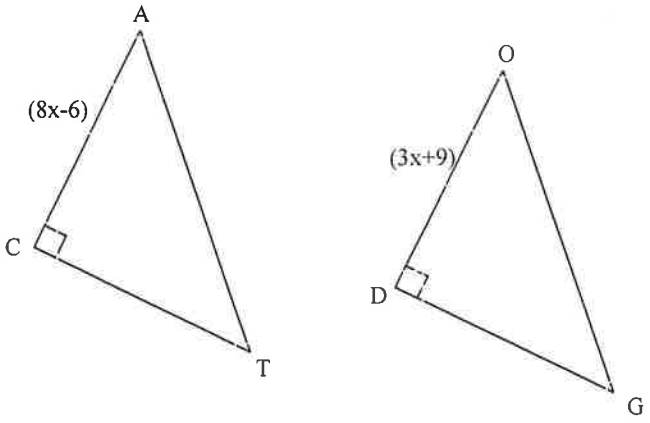


8. $\triangle ABD \cong \triangle CDB$. Find y.

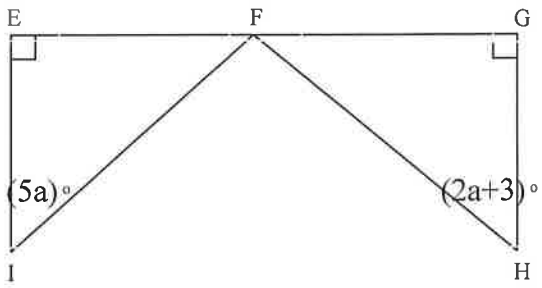


II. Set up an equation and then solve for the variable.

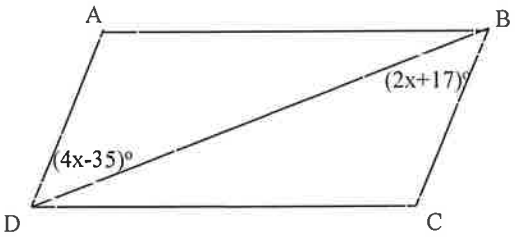
9. $\triangle CAT \cong \triangle DOG$. Find x.



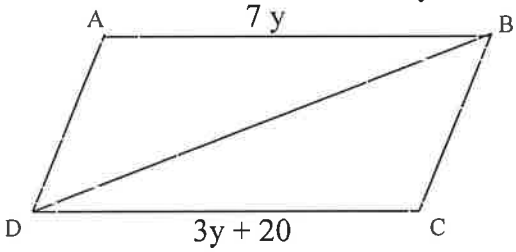
10. $\triangle IEF \cong \triangle HGF$. Find a.



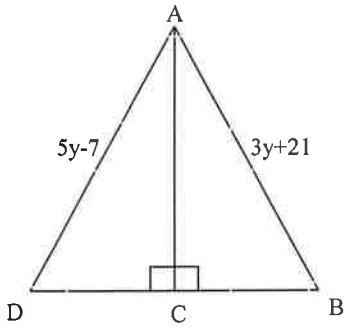
11. $\triangle ABD \cong \triangle CDB$. Find x.



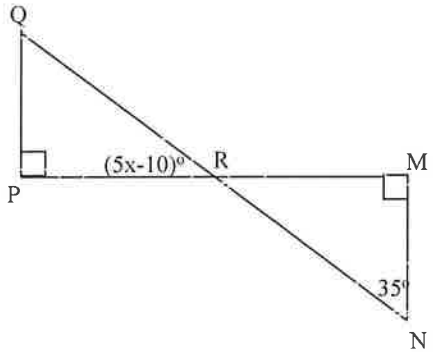
12. $\triangle ABD \cong \triangle CDB$. Find y.



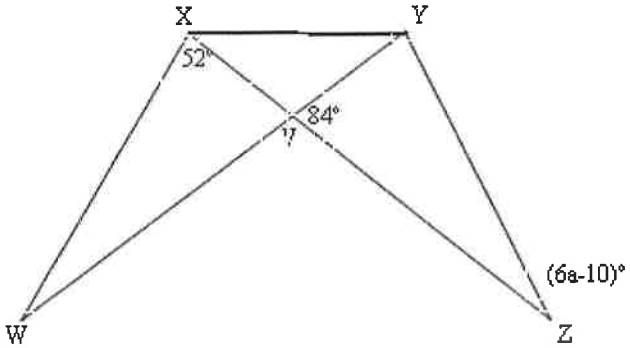
13. $\triangle ABC \cong \triangle ADC$. Find y.



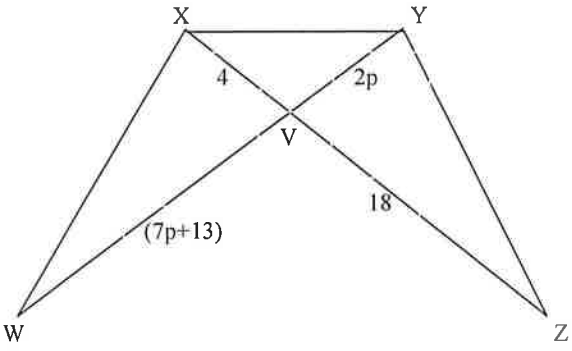
14. $\triangle PQR \cong \triangle MNR$ Find x.



15. $\triangle WXV \cong \triangle ZYV$. Find a.

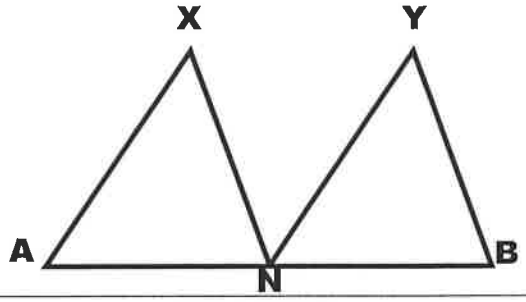


16. $\triangle WXY \cong \triangle ZYX$. Find p.



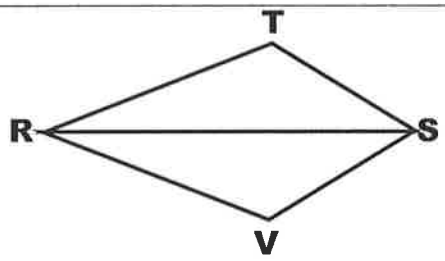
Proofs

1. GIVEN: N is the midpoint of $\overline{AB}$
   $\overline{AX} \cong \overline{NY}$ $\overline{NX} \cong \overline{BY}$
   PROVE: $\angle X \cong \angle Y$



STATEMENTS	REASONS
1. N is the midpoint of $\overline{AB}$	
2.	Definition of a midpoint
3. $\overline{AX} \cong \overline{NY}$	
4.	Given
5. $\triangle AXN \cong \triangle NYB$	
6.	Corr parts of $\cong$ $\triangle$'s $\cong$

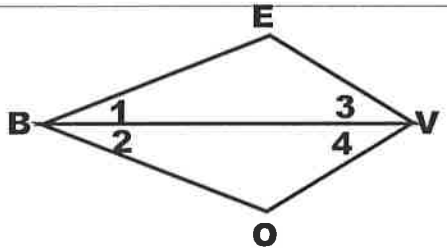
2. GIVEN: $\overline{RT} \cong \overline{RV}$ $\overline{TS} \cong \overline{VS}$
   PROVE: $\angle RST \cong \angle RSV$



STATEMENTS	REASONS
1.	Given
2.	
3.	Reflexive
4.	SSS
5. $\angle RST \cong \angle RSV$	

3. GIVEN: $\overline{VB}$ bisects $\angle EVO$ & $\angle EBO$

   PROVE: $\angle E \cong \angle O$

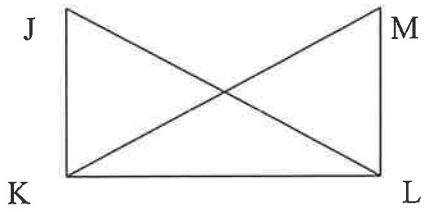


STATEMENTS	REASONS
1. $\overline{VB}$ bisects $\angle EVO$	
2.	Definition of Angle Bisector
3.	Given
4. $\angle 1 \cong \angle 2$	
5. $\overline{BV} \cong \overline{BV}$	
6.	ASA
7. $\angle E \cong \angle O$	

Proofs

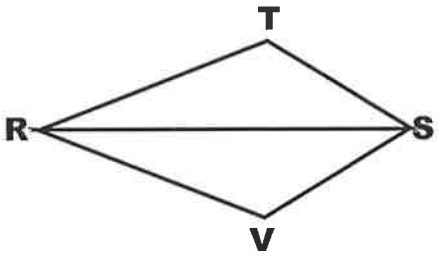
4. GIVEN: $\overline{JK} \cong \overline{ML}$ $\angle JKL \cong \angle MLK$

PROVE: $\overline{JL} \cong \overline{MK}$



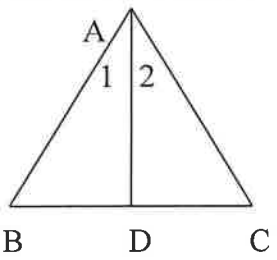
STATEMENTS	REASONS
1. $\overline{JK} \cong \overline{ML}$	
2.	Given
3. $\overline{KL} \cong \overline{KL}$	
4. $\triangle JKL \cong \triangle MLK$	
5.	Corr parts of $\cong$ $\triangle$'s $\cong$

5. GIVEN: $\overline{RT} \cong \overline{RV}$ $m\angle TRS = m\angle VRS$
PROVE: $\angle RST \cong \angle RSV$



STATEMENTS	REASONS
1.	Given
2.	Given
3. $\angle TRS \cong \angle VRS$	
4. $\overline{RS} \cong \overline{RS}$	
5.	
6. $\angle RST \cong \angle RSV$	

6. GIVEN: $\overline{AD}$ is angle bisector of $\angle BAC$
$\overline{AB} \cong \overline{AC}$
PROVE: $\overline{BD} \cong \overline{DC}$



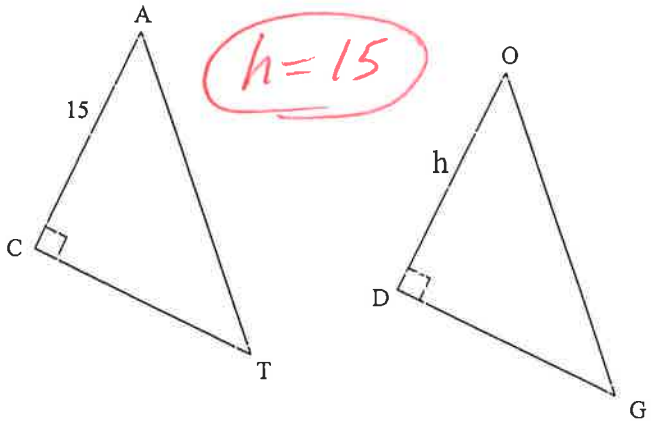
STATEMENTS	REASONS
1.	
2.	Definition of Angle Bisector
3.	Given
4.	Reflexive
5. $\triangle BAD \cong \triangle CAD$	
6. $\overline{BD} \cong \overline{DC}$	

Name Answer Key Period ____

CPCTC Worksheet

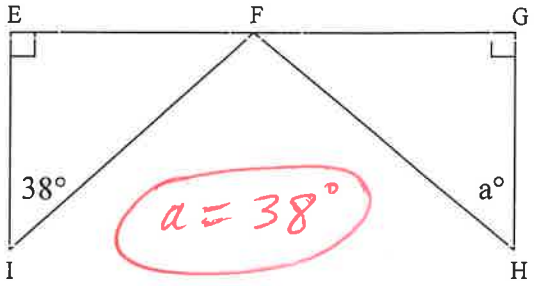
I. Solve for the variable.

1. $\triangle CAT \cong \triangle DOG$. Find h.



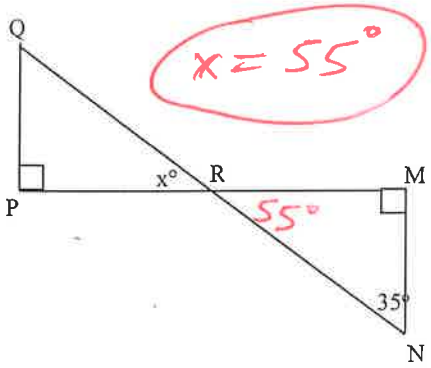
h = 15

2. $\triangle IEF \cong \triangle HGF$. Find a.



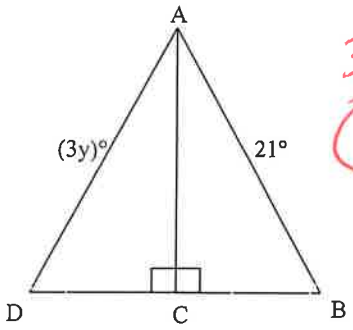
a = 38°

3. $\triangle PQR \cong \triangle MNR$. Find x.



x = 55°

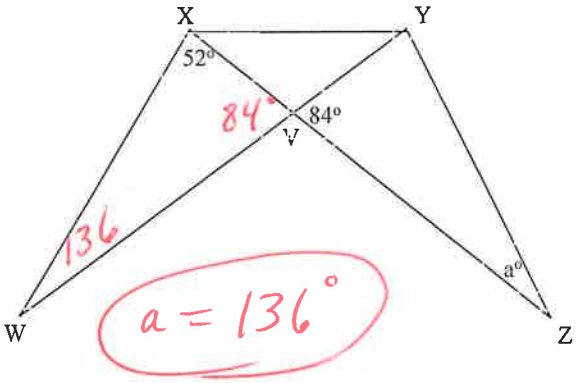
4. $\triangle ABC \cong \triangle ADC$. Find y.



3y = 21

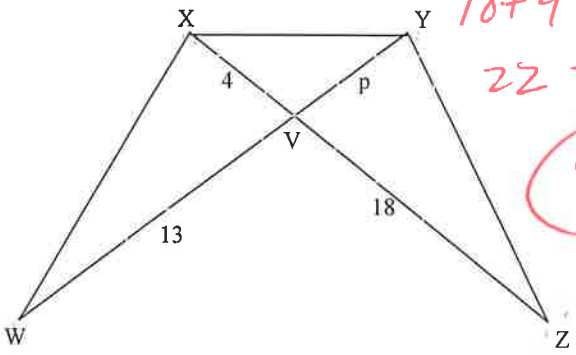
y = 7

5. $\triangle WXV \cong \triangle ZYV$. Find a.



a = 136°

6. $\triangle WXY \cong \triangle ZYX$. Find p.

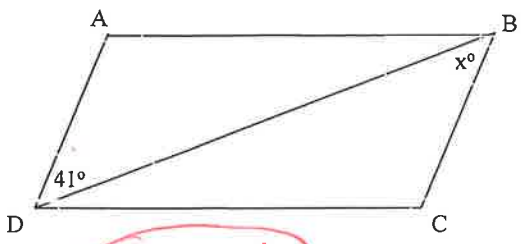


18 + 4 = 13 + p

22 = 13 + p

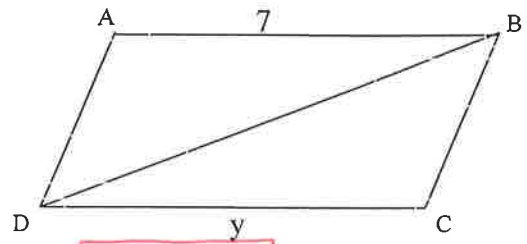
9 = p

7. $\triangle ABD \cong \triangle CDB$. Find x.



x = 41°

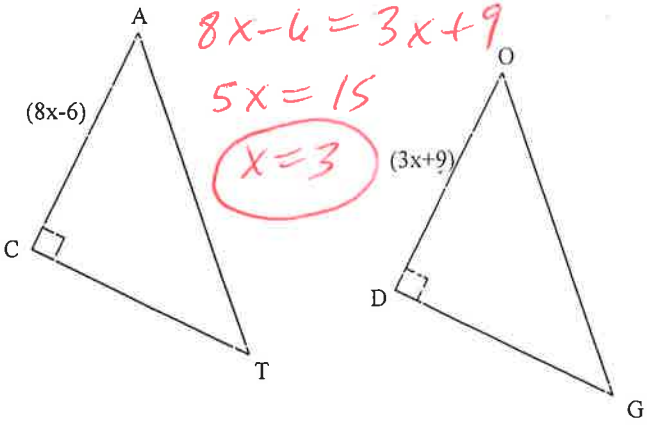
8. $\triangle ABD \cong \triangle CDB$. Find y.



y = 7

II. Set up an equation and then solve for the variable.

9. $\triangle CAT \cong \triangle DOG$. Find x.

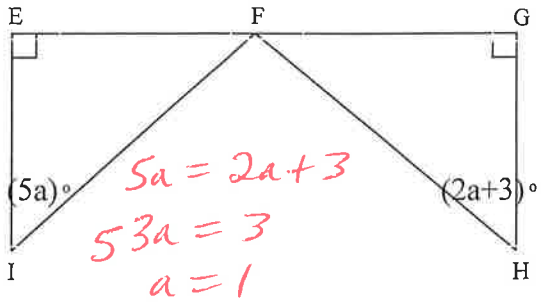


$8x-6=3x+9$

$5x=15$

$x=3$

10. $\triangle IEF \cong \triangle HGF$. Find a.

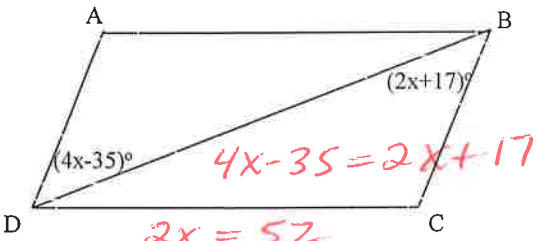


$5a=2a+3$

$3a=3$

$a=1$

11. $\triangle ABD \cong \triangle CDB$. Find x.

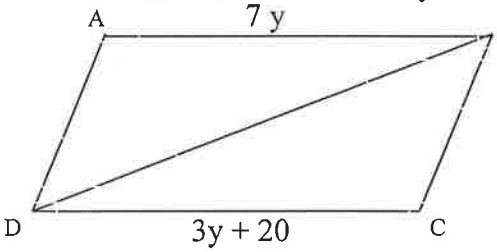


$4x-35=2x+17$

$2x=52$

$x=26$

12. $\triangle ABD \cong \triangle CDB$. Find y.

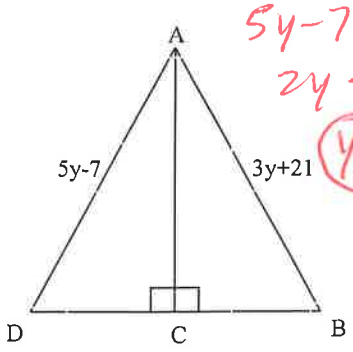


$7y=3y+20$

$4y=20$

$y=5$

13. $\triangle ABC \cong \triangle ADC$. Find y.

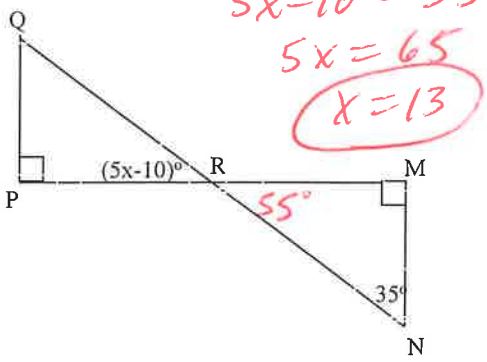


$5y-7=3y+21$

$2y=28$

$y=14$

14. $\triangle PQR \cong \triangle MNR$ Find x.

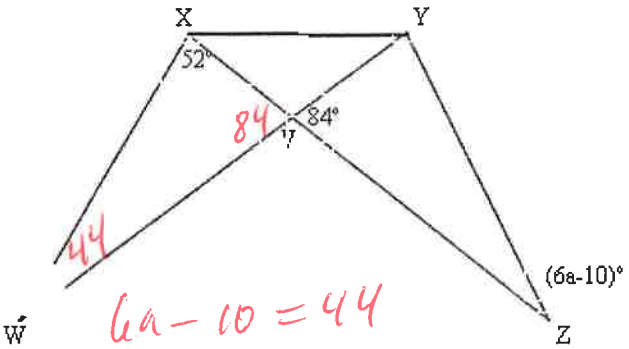


$5x-10=55$

$5x=65$

$x=13$

15. $\triangle WXV \cong \triangle ZYV$. Find a.

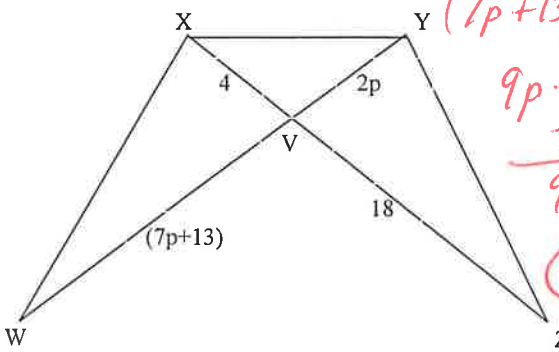


$6a-10=44$

$6a=54$

$a=9$

16. $\triangle WXY \cong \triangle ZYX$. Find p.



$(7p+13)+2p=4+18$

$9p+13=22$

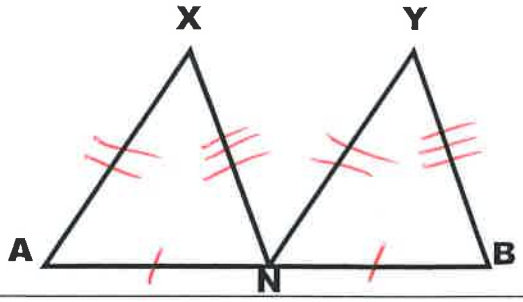
$-13 \quad -13$

$9p=9$

$p=1$

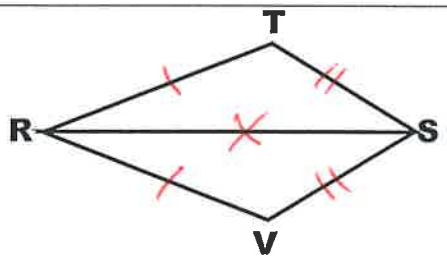
Proofs

1. GIVEN: N is the midpoint of $\overline{AB}$
$\overline{AX} \cong \overline{NY}$ $\overline{NX} \cong \overline{BY}$
PROVE: $\angle X \cong \angle Y$



STATEMENTS		REASONS
1. N is the midpoint of $\overline{AB}$	1.	Given
2. $\overline{AN} \cong \overline{NB}$	2.	Definition of a midpoint: A midpoint divides a segment into two congruent halves.
3. $\overline{AX} \cong \overline{NY}$	3.	Given
4. $\overline{NX} \cong \overline{BY}$	4.	Given
5. $\triangle AXN \cong \triangle NYB$	5.	SSS $\cong$ SSS
6. $\angle X \cong \angle Y$		Corr parts of $\cong$ $\triangle$'s $\cong$

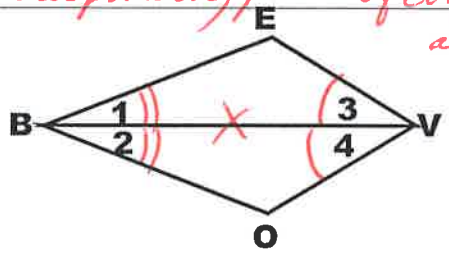
2. GIVEN: $\overline{RT} \cong \overline{RV}$ $\overline{TS} \cong \overline{VS}$
PROVE: $\angle RST \cong \angle RSV$



STATEMENTS		REASONS
1. $\overline{RT} \cong \overline{RV}$	1.	Given
2. $\overline{TS} \cong \overline{VS}$	2.	Given
3. $\overline{RS} \cong \overline{RS}$	3.	Reflexive
4. $\triangle RTS \cong \triangle RVS$	4.	SSS $\cong$ SSS
5. $\angle RST \cong \angle RSV$	5.	corresponding parts of congruent triangles are congruent.

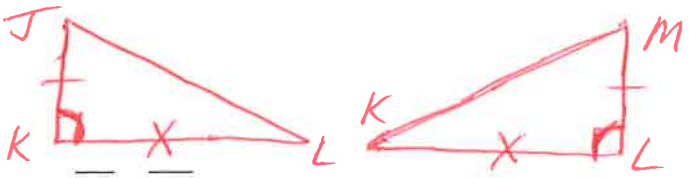
3. GIVEN: $\overline{VB}$ bisects $\angle EVO$ & $\angle EBO$

PROVE: $\angle E \cong \angle O$



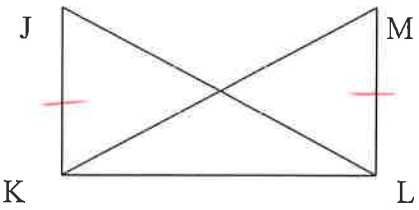
STATEMENTS		REASONS
1. $\overline{VB}$ bisects $\angle EVO$	1.	Given
2. $\angle 3 \cong \angle 4$	2.	Definition of Angle Bisector: A bisector divides an angle into two congruent angles
3. $\overline{VB}$ bisects $\angle EBO$	3.	Given
4. $\angle 1 \cong \angle 2$	4.	A bisector divides an angle into two congruent angles.
5. $\overline{BV} \cong \overline{BV}$	5.	Reflexive Property
6. $\triangle BEV \cong \triangle BOV$	6.	ASA $\cong$ ASA
7. $\angle E \cong \angle O$	7.	Corresponding parts of congruent triangles are congruent.

Proofs



4. GIVEN: $\overline{JK} \cong \overline{ML}$ $\angle JKL \cong \angle MLK$

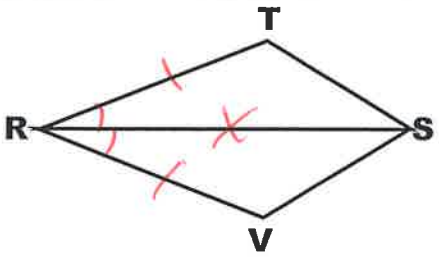
PROVE: $\overline{JL} \cong \overline{MK}$



STATEMENTS	REASONS
1. $\overline{JK} \cong \overline{ML}$	1. Given
2. $\angle JKL \cong \angle MLK$	2. Given
3. $\overline{KL} \cong \overline{KL}$	3. Reflexive Property
4. $\triangle JKL \cong \triangle MLK$	4. SAS $\cong$ SAS
5. $\overline{JL} \cong \overline{MK}$	Corr parts of $\cong$ $\triangle$'s $\cong$

5. GIVEN: $\overline{RT} \cong \overline{RV}$ $m\angle TRS = m\angle VRS$

PROVE: $\angle RST \cong \angle RSV$

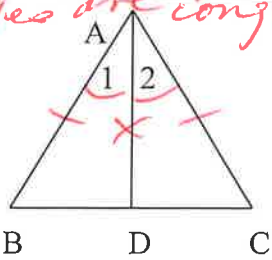


STATEMENTS	REASONS
1. $\overline{RT} \cong \overline{RV}$	1. Given
2. $m\angle TRS \cong m\angle VRS$	2. Given
3. $\angle TRS \cong \angle VRS$	3. Two angles that are equal in measure are congruent.
4. $\overline{RS} \cong \overline{RS}$	4. Reflexive Property
5. $\triangle RTS \cong \triangle RVS$	5. SAS $\cong$ SAS
6. $\angle RST \cong \angle RSV$	6. Corresponding parts of congruent triangles are congruent.

6. GIVEN: $\overline{AD}$ is angle bisector of $\angle BAC$

$\overline{AB} \cong \overline{AC}$

PROVE: $\overline{BD} \cong \overline{DC}$



STATEMENTS	REASONS
1. $\overline{AD}$ is angle bisector of $\angle BAC$	1. Given
2. $\angle 1 \cong \angle 2$	2. Definition of Angle Bisector = A bisector divides an angle into two congruent halves.
3. $\overline{AB} \cong \overline{AC}$	3. Given
4. $\overline{AD} \cong \overline{AD}$	4. Reflexive Property
5. $\triangle BAD \cong \triangle CAD$	5. SAS $\cong$ SAS
6. $\overline{BD} \cong \overline{DC}$	6. Corresponding parts of congruent triangles are congruent.