Ch. 4 Review

Name: _____

Date: _____ Period: _____

Directions: Complete each statement using vocabulary from the chapter.

1. The two congruent sides of an isosceles triangle are the legs.
2. The two congruent sides of an isosceles triangle form the vertex angle
3. If you know the two triangles are congruent, then the corresponding sides and angles of the triangles are congruent because CPCTC.
4. The side opposite the right angle of a right triangle is the hypotenuse.
5. The angles of an isosceles triangle that are not the vertex angle are called the base angles.
6. The legs are the two sides of a right triangle that are not the hypotenuse.
7. Congruent Polygons have congruent corresponding parts.
8. The side of an isosceles triangle that is not a leg is called the base.

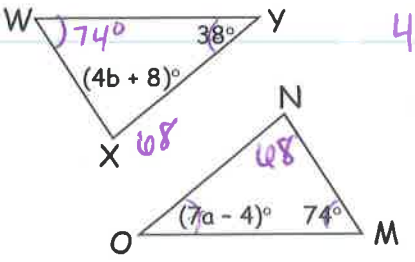
Directions: $\triangle DOG \cong \triangle CAT$. Complete the congruence statements.

9. $\angle O \cong$ $\angle A$
10. $\overline{DG} \cong$ $\overline{CT}$
11. $\triangle GDO \cong \triangle$ TCA

Directions: Use the given information to find the indicated values.

12. Given: $\triangle WXY \cong \triangle MNO$

Find the values of a and b.



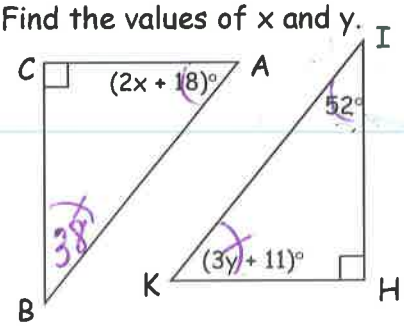
$4b+8=68$
$4b=60$
$b=15$

$7a-4=38$
$7a=42$
$a=6$

a = 6 b = 15

13. Given: $\triangle CBA \cong \triangle HKI$

Find the values of x and y.



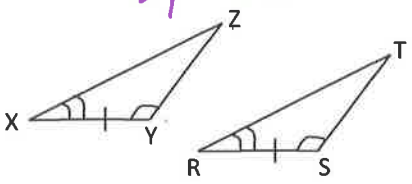
$2x+18=52$
$2x=34$
$x=17$

$3y+11=38$
$3y=27$
$y=9$

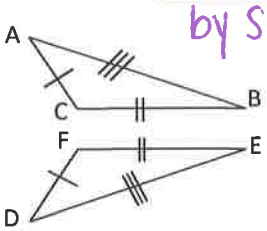
x = 17 y = 9

Directions: Fill in the second triangle and state the theorem to prove the triangles congruent. If the triangles cannot be proven congruent, write not possible.

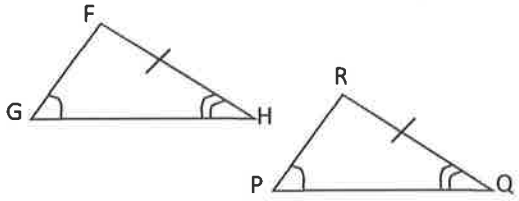
14. $\triangle ZYX \cong$ $\triangle TSR$ by ASA



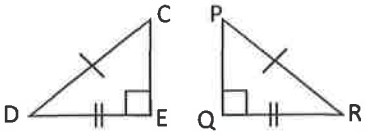
15. $\triangle ACB \cong$ $\triangle DFE$ by SSS



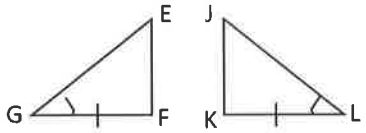
16. $\triangle HFG \cong$ $\triangle QRP$ by AAS



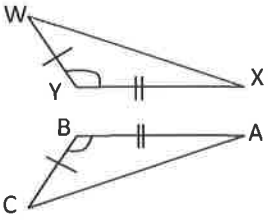
17. $\triangle PQR \cong$ $\triangle CED$ by HL



18. $\triangle KLJ \cong$ Not Possible

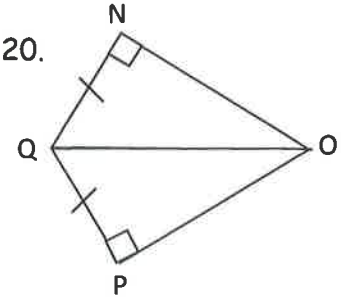


19. $\triangle YWX \cong$ $\triangle BCA$ by SAS



Directions: Determine which side or angle is needed to prove the following triangles congruent.

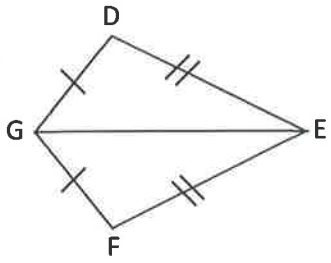
20.



A. HL $\overline{QO} \cong \overline{QO}$

B. SAS $\overline{NO} \cong \overline{PO}$

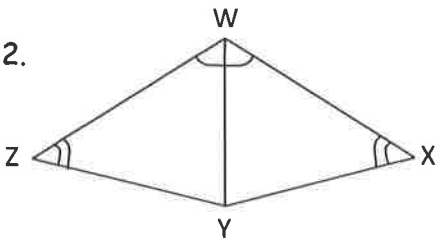
21.



A. SSS $\overline{GE} \cong \overline{GE}$

B. SAS $\angle F \cong \angle D$

22.

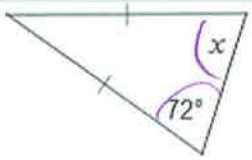


A. AAS $\overline{ZY} \cong \overline{YX}$ or $\overline{WY} \cong \overline{WY}$

B. ASA $\overline{WZ} \cong \overline{WX}$

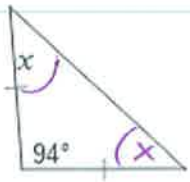
Directions: Find the missing value.

23.



$x = 72°$

24.

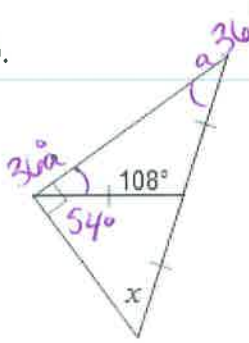


$x + x + 94 = 180$

$2x = 86$

$x = 43$

25.



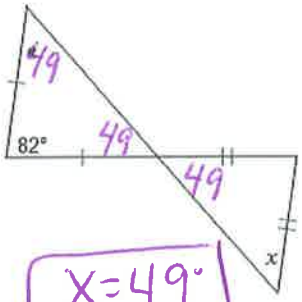
$a + a + 108 = 180$

$2a = 72$

$a = 36$

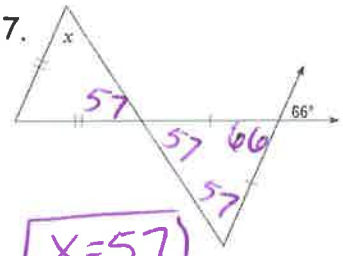
$x = 54°$

26.



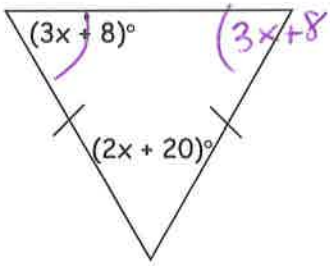
X=49°

27.



X=57

28.



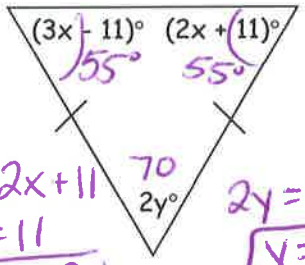
3x+8+3x+8+2x+20 = 180

8x + 36 = 180

8x = 144

X=18

29.



3x-11 = 2x+11

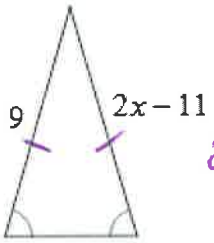
x-11 = 11

X=22

2y = 70

Y=35

30.



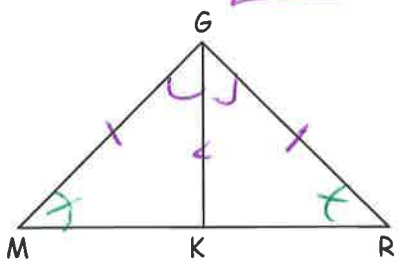
2x-11=9

2x=20

X=10

31. Given: $\overline{GK}$ bisects ∠MGR, $\overline{GM} \cong \overline{GR}$

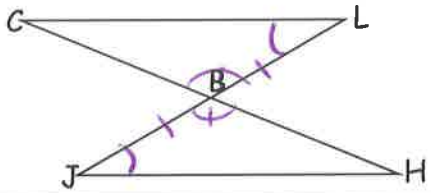
Prove: ΔMGK ≅ ΔRGK



Statements	Reasons
1. $\overline{GK}$ bisects ∠MGR	1. Given
2. $\overline{GM} \cong \overline{GR}$	2. Given
3. ∠MGK ≅ ∠RGK	3. If bisected, then 2 ≅ ∠s.
4. $\overline{GK} \cong \overline{GK}$ OR ∠M ≅ ∠R	4. Reflexive OR if △, then △
5. ΔMGK ≅ ΔRGK	5. SAS (2,3,4) OR ASA (3,2,4)

32. Given: $\angle J \cong \angle L$, B is the midpoint of $\overline{JL}$

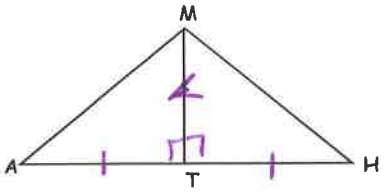
Prove: $\Delta JHB \cong \Delta LCB$



Statements	Reasons
1. $\angle J \cong \angle L$	1. Given
2. B is midpoint of $\overline{JL}$	2. Given
3. $\overline{JB} \cong \overline{BL}$	3. If midpoint, then 2 $\cong$ segments.
4. $\angle CBL \cong \angle JBH$	4. Vertical $\angle$s are $\cong$.
5. $\Delta JHB \cong \Delta LCB$	5. ASA (1, 3, 4)

33. Given: $\overline{MT} \perp \overline{AH}$, $\overline{AT} \cong \overline{TH}$

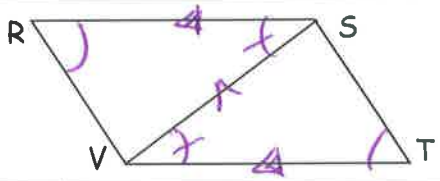
Prove: $\angle A \cong \angle H$



Statements	Reasons
1. $\overline{MT} \perp \overline{AH}$	1. Given
2. $\overline{AT} \cong \overline{TH}$	2. Given
3. $\angle MTA$ & $\angle MTH$ are right $\angle$s	3. If $\perp$, then right $\angle$s.
4. $\angle MTA \cong \angle MTH$	4. If right $\angle$s, then $\cong$.
5. $\overline{MT} \cong \overline{MT}$	5. Reflexive
6. $\Delta MTA \cong \Delta MTH$	6. SAS (2, 4, 5)
7. $\angle A \cong \angle H$	7. CPCTC

34. Given: $\angle R \cong \angle T$, $\overline{RS} \parallel \overline{VT}$

Prove: $\overline{RS} \cong \overline{VT}$



Statements	Reasons
1. $\angle R \cong \angle T$	1. Given
2. $\overline{RS} \parallel \overline{VT}$	2. Given
3. $\angle RSV \cong \angle SVT$	3. If $\parallel$, then alt. int. $\angle$s are $\cong$.
4. $\overline{VS} \cong \overline{VS}$	4. Reflexive
5. $\Delta RSV \cong \Delta TVS$	5. AAS (1, 3, 4)
6. $\overline{RS} \cong \overline{VT}$	6. CPCTC