10 Given: $\overline{AZ} \cong \overline{ZB}$;
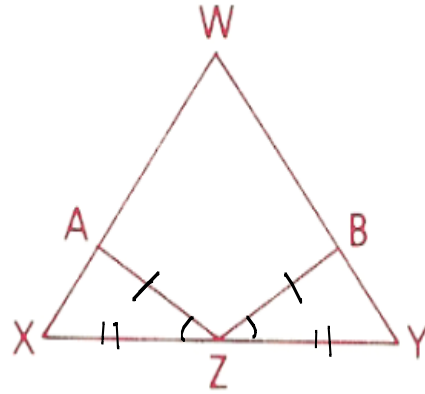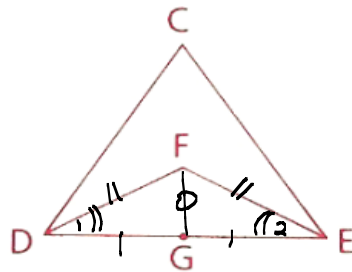
Z is the midpt. of $\overline{XY}$.

$\angle AZX \cong \angle BZY$,

$\overline{XW} \cong \overline{YW}$

Prove: $\overline{AW} \cong \overline{BW}$

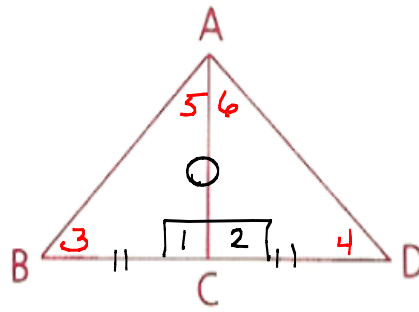| S	R
1. $\overline{AZ} \cong \overline{ZB}$	1. GIVEN
2. $\angle AZX \cong \angle BZY$	2. GIVEN
3. Z mdpt $\overline{XY}$	3. Given
4. $\overline{XZ} \cong \overline{ZY}$	4. mdpt $\Rightarrow \cong$ seg (3)
5. $\triangle AZX \cong \triangle BZY$	5. SAS (1 2 4)
6. $\overline{XW} \cong \overline{YW}$	6 Given
7. $\overline{AX} \cong \overline{BY}$	7. Given
8. $\overline{WA} \cong \overline{WB}$	8. subtract (6,7)

11 Given: $\overrightarrow{DF}$ bisects $\angle CDE$.

$\overrightarrow{EF}$ bisects $\angle CED$.

G is the midpt. of $\overline{DE}$.

$\overline{DF} \cong \overline{EF}$

Prove: $\angle CDE \cong \angle CED$

S	R
1. G mdpt $\overline{DE}$	1. GIVEN
2. $\overline{DG} \cong \overline{GE}$	2. mdpt $\Rightarrow \cong$ SEGS (1)
3. DRAW $\overline{FG}$	3. 2 pts $\Rightarrow$ SEG
4. $\overline{FG} \cong \overline{FG}$	4. REF
5. $\overline{DF} \cong \overline{EF}$	5. GIVEN
6. $\triangle DFG \cong \triangle EFG$	6. SSS (2 45)
7. $\angle 1 \cong \angle 2$	7. CPCTC
8. $\overrightarrow{DF}$ bis $\angle CDE$ & $\overrightarrow{EF}$ bis $\angle CED$	8. Given
9. $\angle CDE \cong \angle CED$	9. MULTIPLY

12 Given: $\overline{AC}$ is the altitude to $\overline{BD}$.

$\overline{AC}$ is a median.

$\angle BAC$ is comp. to $\angle D$.

Conclusion: $\angle DAC$ is comp. to $\angle B$.

S

1. $\overline{AC}$ med
S 2. $\overline{BC} \cong \overline{CD}$
3. $\overline{AC}$ alt
4. $\angle 1$ & $\angle 2$ rt $\angle$s
A 5. $\angle 1 \cong \angle 2$
S 6. $\overline{AC} \cong \overline{AC}$
7. $\triangle BAC \cong \triangle DAC$
8. $\angle 3 \cong \angle 4$, $\angle 5 \cong \angle 6$
9. $\angle 5$ comp $\angle 4$
10. $\angle 6$ comp $\angle 3$

R

1. Given
2. med $\Rightarrow \cong$ segs
3. Given
4. alt $\Rightarrow$ rt $\angle$
5. rt $\angle \Rightarrow \cong \angle$
6. Ref
7. SAS (256)
8. CPCTC
9. Given
10. Substitute