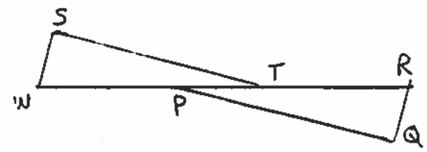
A#37 [P+I] Chpt Review p. 160-161 #1-8, 11-20

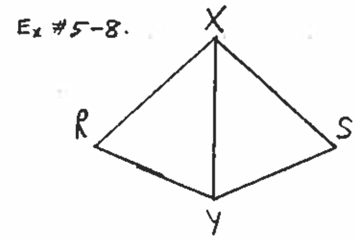
[P+II] Chpt Test p. 162-163 #1-19

Key

[P+I] p. 160-161 CR #1-8, 11-20

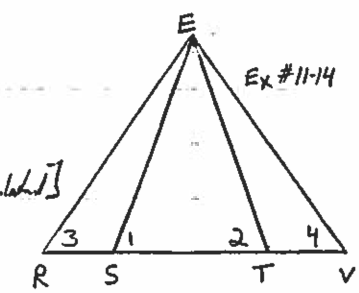


1. $\triangle STW \cong \underline{\triangle QPR}$ 2. $\triangle PQR \cong \underline{\triangle TSW}$
3. $\angle R \cong \underline{\angle W}$ 4. $\underline{WT} = RP$
5. ① $\overline{RX} \cong \overline{SX}$; $\overline{RY} \cong \overline{SY}$ [Given]
② $\overline{XY} \cong \overline{XY}$ [Refl. Prop. of $\cong$]
③ $\triangle RXY \cong \triangle SXY$ [SSS $\cong$ Post]

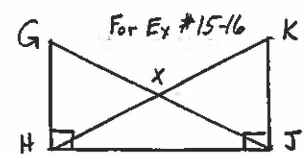


6. ① $\overline{RY} \cong \overline{SY}$; $\angle R \cong \angle S$ [Given]
② $\overline{XY} \cong \overline{XY}$ [Refl. Prop. of $\cong$]
[Not enough Info] → ∠ Not included
7. ① $\overline{XY}$ bisects $\angle RXS$ and $\angle RYS$ [Given]
② $\angle RXY \cong \angle SXY$; $\angle RYX \cong \angle SYX$ [Def. of ∠ bisector]
③ $\overline{XY} \cong \overline{XY}$ [Refl. Prop. of $\cong$]
④ $\triangle RXY \cong \triangle SXY$ [ASA $\cong$ Post]

8. ① $\angle RXY \cong \angle SXY$; $\overline{RX} \cong \overline{SX}$ [Given]
② $\overline{XY} \cong \overline{XY}$ [Refl. Prop. of $\cong$]
③ $\triangle RXY \cong \triangle SXY$ [SAS $\cong$ Post]



11. $\angle 3 \cong \angle 4 \rightarrow \overline{ER} \cong \overline{EV}$ [Base ∠s Thm]
12. $\triangle REV$ is equiangular → $\triangle REV$ is equilateral [Equiangular → Equilateral]
13. ① $\overline{ES} \cong \overline{ET}$, $m\angle 1 = 75^\circ$, $m\angle 2 = 3x$ [Given]
② $\angle 1 \cong \angle 2$ [Base ∠s Thm]
③ $75 = 3x$ [Def. of $\cong$ ∠s]
$\boxed{x = 25}$
14. ① $\angle 1 \cong \angle 2$, $ES = 3y + 5$, $ET = 25 - y$ [Given]
② $\overline{ES} \cong \overline{ET}$ [Base ∠s Thm]
③ $3y + 5 = 25 - y$ [Def. of $\cong$ seg.]
④ $4y = 20$
$\boxed{y = 5}$



15. Given: $\overline{GH} \perp \overline{HJ}$; $\overline{KJ} \perp \overline{HJ}$; $\angle G \cong \angle K$

Prove: $\triangle GHJ \cong \triangle KJH$

Statements	Reasons
① $\overline{GH} \perp \overline{HJ}$; $\overline{KJ} \perp \overline{HJ}$; $\angle G \cong \angle K$	① Given
② $\angle GHJ$ and $\angle KJH$ are Rt ∠s	② Def. of ⊥
③ $\angle GHJ \cong \angle KJH$	③ Rt ∠s Thm
④ $\overline{HJ} \cong \overline{HJ}$	④ Refl. Prop. of $\cong$
⑤ $\triangle GHJ \cong \triangle KJH$	⑤ AAS $\cong$ Thm

16. Given: $\overline{GH} \perp \overline{HJ}$; $\overline{KJ} \perp \overline{HJ}$; $\overline{GJ} \cong \overline{KH}$

Prove: $\overline{GH} \cong \overline{KJ}$

Statements	Reasons
① $\overline{GH} \perp \overline{HJ}$; $\overline{KJ} \perp \overline{HJ}$; $\overline{GJ} \cong \overline{KH}$	① Given
② $\overline{HJ} \cong \overline{HJ}$	② Refl. Prop. of $\cong$
③ $\triangle HGJ \cong \triangle JKH$	③ HL $\cong$ Thm
④ $\overline{GH} \cong \overline{KJ}$	④ CPCTC

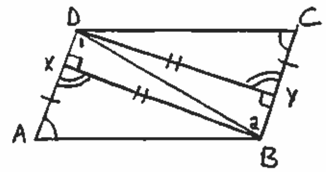
A#37 continued

Key

Pt I p. 161 CR #17-20

17. Given: $\overline{AX} \cong \overline{CY}$; $\angle A \cong \angle C$; $\overline{BX} \perp \overline{AD}$; $\overline{DY} \perp \overline{BC}$

Prove: $\overline{AD} \parallel \overline{BC}$



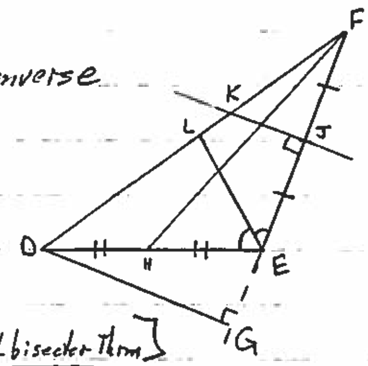
Statements	Reasons
① $\overline{AX} \cong \overline{CY}$; $\angle A \cong \angle C$; $\overline{BX} \perp \overline{AD}$; $\overline{DY} \perp \overline{BC}$	① Given
② $\angle AXB$ and $\angle CYD$ are Rt $\angle$s	② Def. of $\perp$
③ $\angle AXB \cong \angle CYD$	③ Rt. $\angle$s Thm
④ $\triangle ABX \cong \triangle CDY$	④ ASA $\cong$ Post
⑤ $\overline{BX} \cong \overline{DY}$	⑤ CPCTC
⑥ $\overline{BD} \cong \overline{BD}$	⑥ Refl. Prop. of $\cong$
⑦ $\triangle BDX \cong \triangle DBY$	⑦ HL $\cong$ Thm
⑧ $\angle 1 \cong \angle 2$	⑧ CPCTC
⑨ $\overline{AD} \parallel \overline{BC}$	⑨ Alt. Int. $\angle$s Converse

18. Name the following in $\triangle DEF$.

a. Altitude $\rightarrow \overline{DG}$

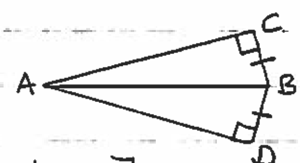
b. Median $\rightarrow \overline{HF}$

c. $\perp$ Bisector $\rightarrow \overline{KJ}$



19. G lies on the $\perp$ bisector of $\overline{EF} \rightarrow GE = GF$ [$\perp$ bisector Thm]

20. ① $\triangle ABC \cong \triangle ABD$ [Given] and diagram



② $\overline{CB} \cong \overline{DB}$ [CPCTC]

③ $CB = DB$ [Def. of $\cong$ seg]

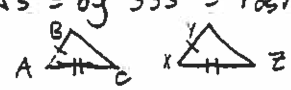
④ B lies on the $\angle$ bisector of $\angle DAC$ [$\angle$ bisector Thm #2]

Pt II p. 162-163 CT #1-19

1. If $\triangle BAD \cong \triangle TOP$, then $\overline{DB} \cong \overline{PT}$ and $\triangle PTO \cong \triangle DBA$. [CPCTC]

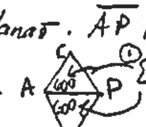
2. $\triangle EFG$ is isosceles, with $m\angle G = 94°$. The legs are sides $\overline{GE}$ and $\overline{GF}$. $m\angle E = 43°$ [Base $\angle$s Thm / $\triangle$ sum Thm]

3. You want to prove $\triangle ABC \cong \triangle XYZ$. You have shown $\overline{AB} \cong \overline{XY}$ and $\overline{AC} \cong \overline{XZ}$. To prove the $\triangle$s $\cong$ by SAS $\cong$ Post you must show that $\angle A \cong \angle X$. To prove the $\triangle$s $\cong$ by SSS $\cong$ Post you must show that $\overline{BC} \cong \overline{YZ}$.



4. A method that can be used to prove rt $\triangle$s $\cong$, but cannot be used with other types of $\triangle$s, is the HL $\cong$ Thm method.

5. $\triangle CAP$ and $\triangle TAP$ are equilateral and coplanar. $\overline{AP}$ is a common side of the 2 $\triangle$s. $m\angle CAT = 120°$. ② [$\angle$ Add Post]



① [Equiangular $\rightarrow$ 3 60° $\angle$s]

A#37 continued

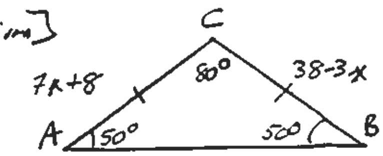
Key

Pt II p.162-163 CT #6-19

6. A segment from a vertex of a Δ to the midpoint of the opposite side is called a <u>median</u> of the Δ.

7. A point lies on the bisector of an angle if and only if it is equidistant from <u>the sides of the angle</u>. [$\angle$ bisector thm #2]

8. ① $m\angle A = 50°$, $m\angle C = 80°$; $AC = 7x+8$, $BC = 38-3x$ [Given]



② $m\angle B = 50°$ [Δ Sum Thm]

③ $\angle A \cong \angle B$ [Def. of $\cong \angle$s]

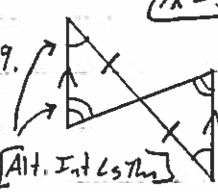
④ $\overline{AC} \cong \overline{BC}$ [Base $\angle$s Thm]

⑤ $7x+8 = 38-3x$ [Def. of $\cong$ seg.]

$10x = 30$

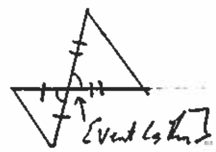
$\boxed{x=3}$

9.



Δs $\cong$ by <u>AAS $\cong$ Thm</u>

10.



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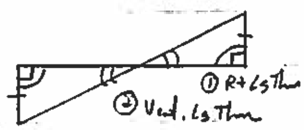
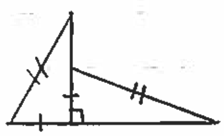
11.



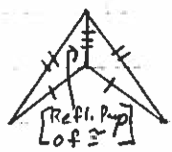
Δs $\cong$ by <u>AAS $\cong$ Thm</u>

12.



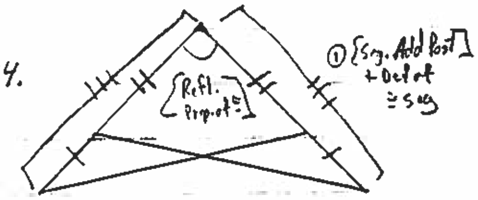
Δs $\cong$ by <u>HL $\cong$ Thm</u>

13.



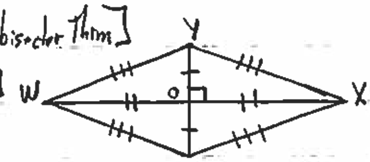
Δs $\cong$ by <u>SSS $\cong$ Post</u>

14.



Δs $\cong$ by <u>SAS $\cong$ Post</u>

15. W is equidistant from <u>Y</u> and <u>Z</u>. [$\overline{WX}$ is a $\perp$ of $\overline{YZ}$ by def] [$\perp$ bisector Thm]

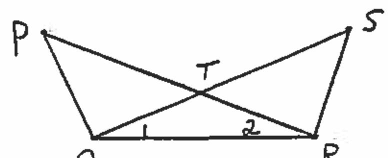


16. Z is equidistant from <u>W</u> and <u>X</u>. [$\overline{YZ}$ is a $\perp$ of $\overline{WX}$ by def] ["]

17. 4 Isosceles Δs $\rightarrow$ <u>ΔWYX</u>, <u>ΔYXZ</u>, <u>ΔXZW</u>, <u>ΔZWY</u>

18. # of pairs of $\cong \Delta$s $\rightarrow$ <u>8 pairs</u> ① $\Delta WYX \cong \Delta WZX$ and ② $\Delta YWZ \cong \Delta YXZ$ [SSS $\cong$ Post] [HL $\cong$ Thm]
③ $\Delta WOY \cong \Delta XOY$ ④ $\Delta WOY \cong \Delta WOZ$ ⑤ $\Delta WOY \cong \Delta XOZ$ ⑥ $\Delta XOY \cong \Delta XOZ$ ⑦ $\Delta XOY \cong \Delta WOZ$ ⑧ $\Delta WOZ \cong \Delta WOZ$

19. Given: $\angle 1 \cong \angle 2$; $\angle PQR \cong \angle SRQ$
Prove: $\overline{PR} \cong \overline{SQ}$



Statements	Reasons
① $\angle 1 \cong \angle 2$; $\angle PQR \cong \angle SRQ$	① Given
② $\overline{QR} \cong \overline{QR}$	② Refl. Prop of $\cong$
③ $\Delta PQR \cong \Delta SRQ$	③ ASA $\cong$ Post
④ $\overline{PR} \cong \overline{SQ}$	④ CPCTC