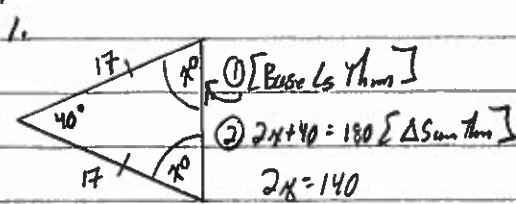


A#35 [P+I] p. 146 Self-Test 2 #1-5/p. 148-149 WE #1-4 [2 column Proofs] Key

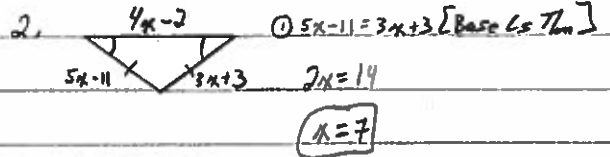
[P+II] p. 149-150 WE #7-12 [2 column Proofs]

[P+I] p. 146 Self-Test 2 #1-5 and p. 148-149 WE #1-4



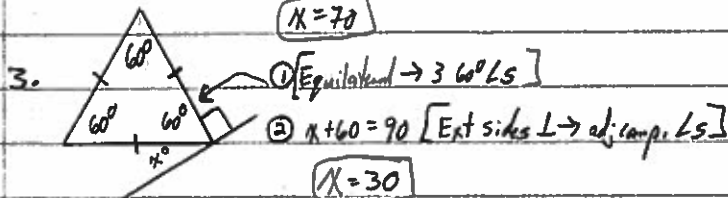
$2x = 140$

$x = 70$



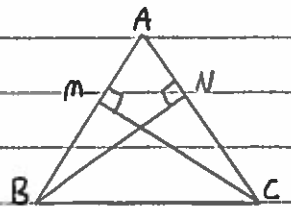
$2x = 14$

$x = 7$



$x = 30$

For #4, 5



4. Given: $\overline{AB} \cong \overline{AC}$; $\overline{BN} \perp \overline{AC}$; $\overline{CM} \perp \overline{AB}$

Prove: $\triangle ABN \cong \triangle ACM$

Statements [Reasons]

- ① $\overline{AB} \cong \overline{AC}$; $\overline{BN} \perp \overline{AC}$; $\overline{CM} \perp \overline{AB}$ [Given]
- ② $\angle A \cong \angle A$ [Ref. Prop. of \cong]
- ③ $\angle AMC$ and $\angle ANB$ are rt Ls [Def. of \perp]
- ④ $\angle AMC \cong \angle ANB$ [Rt Ls Thm]
- ⑤ $\triangle ABN \cong \triangle ACM$ [AAS \cong Thm]

5. Given: $\overline{MB} \cong \overline{NC}$; $\overline{BN} \perp \overline{AC}$; $\overline{CM} \perp \overline{AB}$

Prove: $\overline{CM} \cong \overline{BN}$

Statements [Reasons]

- ① $\overline{MB} \cong \overline{NC}$; $\overline{BN} \perp \overline{AC}$; $\overline{CM} \perp \overline{AB}$ [Given]
- ② $\overline{BC} \cong \overline{CB}$ [Ref. Prop. of \cong]
- ③ $\triangle BMC \cong \triangle CNB$ [HL \cong Thm]
- ④ $\overline{CM} \cong \overline{BN}$ [CPCTC]

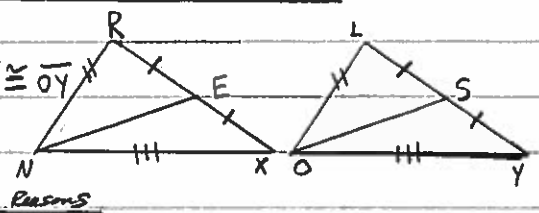
p. 148-150 WE #1-4, 7-12

1. Given: $\overline{RE} \cong \overline{EX} \cong \overline{LS} \cong \overline{SY}$; $\overline{NR} \cong \overline{OL}$; $\overline{NX} \cong \overline{OY}$

Prove: $\overline{NE} \cong \overline{OS}$

Statements

- ① $\overline{RE} \cong \overline{EX} \cong \overline{LS} \cong \overline{SY}$; $\overline{NR} \cong \overline{OL}$; $\overline{NX} \cong \overline{OY}$
- ② $RE = LS$ and $EX = SY$
- ③ $RE + EX = LS + SY$
- ④ $RX = RE + EX$, $LY = LS + SY$
- ⑤ $RX = LY$ / $\overline{RX} \cong \overline{LY}$
- ⑥ $\triangle RNX \cong \triangle LOY$
- ⑦ $\angle X \cong \angle Y$
- ⑧ $\triangle NEX \cong \triangle OSY$
- ⑨ $\overline{NE} \cong \overline{OS}$



Reasons

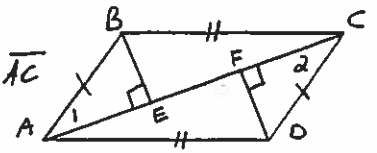
- ① Given
- ② Def. of \cong seg.
- ③ Add. Prop. of $=$ ($2+2$)
- ④ Seg. Add. Post.
- ⑤ Trans. Prop. of $=$ / Def. of \cong seg.
- ⑥ SSS \cong Post.
- ⑦ CPCTC
- ⑧ SAS \cong Post.
- ⑨ CPCTC

A#35 continued

Key

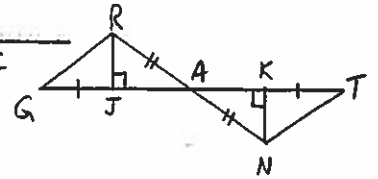
P. 148-150 WE #2-4

2. Given: $\overline{AB} \cong \overline{CD}$; $\overline{BC} \cong \overline{AD}$; $\overline{BE} \perp \overline{AC}$; $\overline{DF} \perp \overline{AC}$
 Prove: $\overline{BE} \cong \overline{DF}$



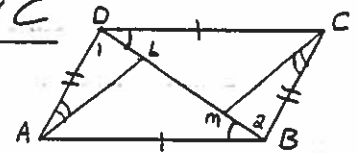
- | <u>Statements</u> | <u>Reasons</u> |
|---|--------------------------|
| ① $\overline{AB} \cong \overline{CD}$; $\overline{BC} \cong \overline{AD}$; $\overline{BE} \perp \overline{AC}$; $\overline{DF} \perp \overline{AC}$ | ① Given |
| ② $\overline{AC} \cong \overline{AC}$ | ② Refl. Prop. of \cong |
| ③ $\triangle ABC \cong \triangle CDA$ | ③ SSS \cong Post. |
| ④ $\angle 1 \cong \angle 2$ | ④ CPCTC |
| ⑤ $\angle AEB$ and $\angle CFD$ are Rt. \angle s | ⑤ Def. of \perp |
| ⑥ $\angle AEB \cong \angle CFD$ | ⑥ Rt. \angle s Thm |
| ⑦ $\triangle ABE \cong \triangle CDF$ | ⑦ AAS \cong Thm |
| ⑧ $\overline{BE} \cong \overline{DF}$ | ⑧ CPCTC |

3. Given: $\overline{GJ} \cong \overline{TK}$; $\overline{AR} \cong \overline{AN}$; $\overline{RJ} \perp \overline{GT}$; $\overline{NK} \perp \overline{GT}$
 Prove: $\angle G \cong \angle T$



- | <u>Statements</u> | <u>Reasons</u> |
|---|------------------------|
| ① $\overline{GJ} \cong \overline{TK}$; $\overline{AR} \cong \overline{AN}$; $\overline{RJ} \perp \overline{GT}$; $\overline{NK} \perp \overline{GT}$ | ① Given |
| ② $\angle GJR$, $\angle AJR$, $\angle AKN$, $\angle TKN$ are Rt. \angle s | ② Def. of \perp |
| ③ $\angle AJR \cong \angle AKN$, $\angle GJR \cong \angle TKN$ | ③ Rt. \angle s Thm |
| ④ $\angle RAJ \cong \angle NAK$ | ④ Vert. \angle s Thm |
| ⑤ $\triangle RAJ \cong \triangle NAK$ | ⑤ AAS \cong Thm |
| ⑥ $\overline{RJ} \cong \overline{NK}$ | ⑥ CPCTC |
| ⑦ $\triangle GRJ \cong \triangle TNK$ | ⑦ SAS \cong Post |
| ⑧ $\angle G \cong \angle T$ | ⑧ CPCTC |

4. Given: $\angle COM \cong \angle ABL$; $\angle LAO \cong \angle MCB$; $\overline{AB} \cong \overline{CD}$
 Prove: $\overline{AL} \cong \overline{CM}$



- | <u>Statements</u> | <u>Reasons</u> |
|---|--------------------------|
| ① $\angle COM \cong \angle ABL$; $\angle LAO \cong \angle MCB$; $\overline{AB} \cong \overline{CD}$ | ① Given |
| ② $\overline{BO} \cong \overline{BO}$ | ② Refl. Prop. of \cong |
| ③ $\triangle ABO \cong \triangle CDO$ | ③ SAS \cong Post |
| ④ $\overline{AO} \cong \overline{CO}$; $\angle 1 \cong \angle 2$ | ④ CPCTC |
| ⑤ $\triangle ALO \cong \triangle CMO$ | ⑤ HL \cong Thm |
| ⑥ $\overline{AL} \cong \overline{CM}$ | ⑥ CPCTC |

A#35 Continued

Key

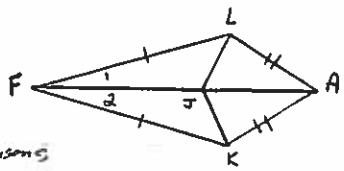
P4II p. 149-150 WE # 7-12

7. Given: $\overline{LF} \cong \overline{KF}$; $\overline{LA} \cong \overline{KA}$

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

- statements
- ① $\overline{LF} \cong \overline{KF}$; $\overline{LA} \cong \overline{KA}$
 - ② $\overline{FA} \cong \overline{FA}$, $\overline{FJ} \cong \overline{FJ}$
 - ③ $\triangle FLA \cong \triangle FKA$
 - ④ $\angle 1 \cong \angle 2$
 - ⑤ $\triangle FLJ \cong \triangle FKJ$
 - ⑥ $\overline{LJ} \cong \overline{KJ}$

- Reasons
- ① Given
 - ② Refl. Prop. of \cong
 - ③ SSS \cong Post
 - ④ CPCTC
 - ⑤ SAS \cong Post
 - ⑥ CPCTC

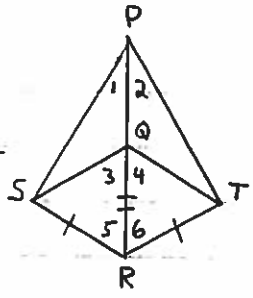


8. Given: \overline{PR} bisects $\angle SPT$ and $\angle SRT$

Prove: \overline{PR} bisects $\angle SQT$

- statements
- ① \overline{PR} bisects $\angle SPT$ and $\angle SRT$
 - ② $\angle 1 \cong \angle 2$; $\angle 5 \cong \angle 6$
 - ③ $\overline{PR} \cong \overline{PR}$; $\overline{QR} \cong \overline{QR}$
 - ④ $\triangle SPR \cong \triangle TPR$
 - ⑤ $\overline{SR} \cong \overline{TR}$
 - ⑥ $\triangle SRQ \cong \triangle TRQ$
 - ⑦ $\angle 3 \cong \angle 4$
 - ⑧ \overline{PR} bisects $\angle SQT$

- Reasons
- ① Given
 - ② Def. of \angle bisector
 - ③ Refl. Prop. of \cong
 - ④ ASA \cong Post
 - ⑤ CPCTC
 - ⑥ SAS \cong Thm
 - ⑦ CPCTC
 - ⑧ Def. of \angle bisector

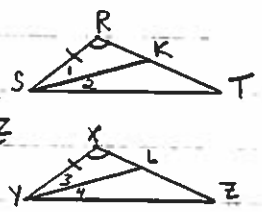


9. Given: $\triangle RST \cong \triangle XYZ$; \overline{SR} bisects $\angle RST$; \overline{YL} bisects $\angle XYZ$

Prove: $\overline{SK} \cong \overline{YL}$

- statements
- ① $\triangle RST \cong \triangle XYZ$; \overline{SR} bisects $\angle RST$; \overline{YL} bisects $\angle XYZ$
 - ② $\angle R \cong \angle X$; $\overline{SR} \cong \overline{YL}$; $\angle RST \cong \angle XYZ$
 - ③ $m\angle 1 = \frac{1}{2} m\angle RST$; $m\angle 3 = \frac{1}{2} m\angle XYZ$
 - ④ $m\angle RST = m\angle XYZ$
 - ⑤ $m\angle 1 = \frac{1}{2} m\angle XYZ$
 - ⑥ $\angle 1 \cong \angle 3$
 - ⑦ $\triangle SRK \cong \triangle YXL$
 - ⑧ $\overline{SK} \cong \overline{YL}$

- Reasons
- ① Given
 - ② CPCTC
 - ③ \angle bisector Thm #1
 - ④ Def. of $\cong \angle$ s
 - ⑤ Subst. Prop. of \cong (4 \rightarrow 3)
 - ⑥ Def. of $\cong \angle$ s
 - ⑦ ASA \cong Post.
 - ⑧ CPCTC



Key

10. Given: $\overline{AB} \cong \overline{AF}$; $\overline{BC} \cong \overline{FE}$; $\overline{CD} \cong \overline{ED}$; $\angle 1 \cong \angle 2$

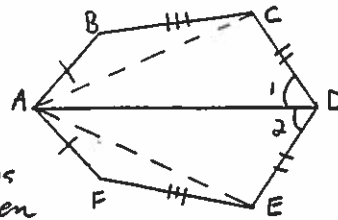
Prove: $\angle B \cong \angle F$

statements

- ① $\overline{AB} \cong \overline{AF}$; $\overline{BC} \cong \overline{FE}$; $\overline{CD} \cong \overline{ED}$; $\angle 1 \cong \angle 2$
- ② Draw \overline{AC} and \overline{AE}
- ③ $\overline{AD} \cong \overline{AD}$
- ④ $\triangle ADE \cong \triangle ADC$
- ⑤ $\overline{AC} \cong \overline{AE}$
- ⑥ $\triangle ABC \cong \triangle AFE$
- ⑦ $\angle B \cong \angle F$

Reasons

- ① Given
- ② Through any 2 points \exists exactly 1 line.
- ③ Refl. Prop. of \cong
- ④ SAS \cong Post
- ⑤ CPCTC
- ⑥ SSS \cong Post
- ⑦ CPCTC



11. Given: $\overline{DE} \cong \overline{FG}$; $\overline{GD} \cong \overline{EF}$; $\angle HDE$ and $\angle KFG$ are R \angle s.

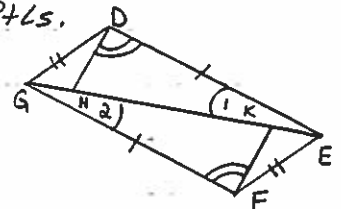
Prove: $\overline{DH} \cong \overline{FK}$

statements

- ① $\overline{DE} \cong \overline{FG}$; $\overline{GD} \cong \overline{EF}$; $\angle HDE$ and $\angle KFG$ are R \angle s
- ② $\overline{GE} \cong \overline{GE}$
- ③ $\triangle GDE \cong \triangle EFG$
- ④ $\angle 1 \cong \angle 2$
- ⑤ $\angle HDE \cong \angle KFG$
- ⑥ $\triangle HDE \cong \triangle KFG$
- ⑦ $\overline{DH} \cong \overline{FK}$

Reasons

- ① Given
- ② Refl. Prop. of \cong
- ③ SSS \cong Post
- ④ CPCTC
- ⑤ Rt. \angle s Thm
- ⑥ ASA \cong Post
- ⑦ CPCTC



12. Given: $\overline{PQ} \perp \overline{QR}$; $\overline{PS} \perp \overline{SR}$; $\overline{PQ} \cong \overline{PS}$

Prove: O is the midpoint of \overline{QS}

statements

- ① $\overline{PQ} \perp \overline{QR}$; $\overline{PS} \perp \overline{SR}$; $\overline{PQ} \cong \overline{PS}$
- ② $\overline{PR} \cong \overline{PR}$, $\overline{PO} \cong \overline{PO}$
- ③ $\triangle PQR \cong \triangle PSR$
- ④ $\angle QPO \cong \angle SPR$
- ⑤ $\triangle POQ \cong \triangle POS$
- ⑥ $\overline{OQ} \cong \overline{OS}$
- ⑦ O is the midpoint of \overline{QS}

Reasons

- ① Given
- ② Refl. Prop. of \cong
- ③ HL \cong Thm
- ④ CPCTC
- ⑤ SAS \cong Post
- ⑥ CPCTC
- ⑦ Def. of midpoint

