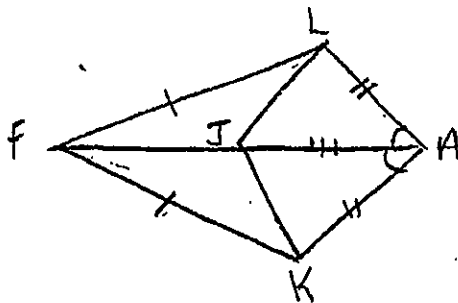


4.6

7

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

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



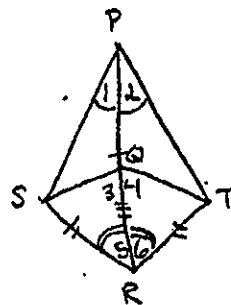
1. $\overline{LF} \cong \overline{KF}$; $\overline{LA} \cong \overline{KA}$
2. $\overline{FA} \cong \overline{FA}$
3. $\Delta LAF \cong \Delta KAF$
4. $\angle LAF \cong \angle KAF$
5. $\overline{JA} \cong \overline{JA}$
6. $\Delta LAJ \cong \Delta KAJ$
7. $\overline{LJ} \cong \overline{KJ}$

1. Given
2. Reflexive
3. SSS
4. CPCTC
5. Reflexive
6. SAS
7. CPCTC

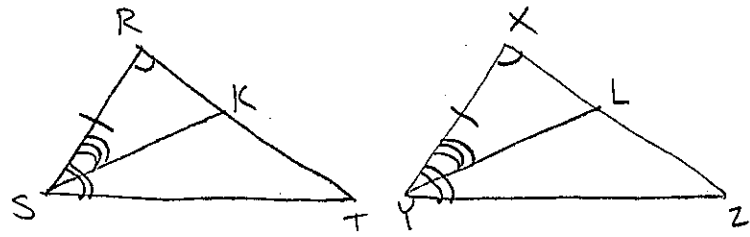
8 Given: \overline{PR} bisects $\angle SPT + \angle SRT$
 Prove: \overline{PR} bisects $\angle SQT$

1. \overline{PR} bisects $\angle SPT + \angle SRT$
2. $\angle 1 \cong \angle 2$; $\angle 5 \cong \angle 6$
3. $\overline{PR} \cong \overline{PR}$
4. $\Delta PRS \cong \Delta PRT$
5. $\overline{SR} \cong \overline{TR}$
6. $\overline{QR} \cong \overline{QR}$
7. $\Delta SRQ \cong \Delta TRQ$
8. $\angle 3 \cong \angle 4$
9. \overline{PR} bisects $\angle SQT$

1. Given
2. def. \angle bisector
3. Reflexive
4. ASA
5. CPCTC
6. Reflexive
7. SAS
8. CPCTC
9. def. \angle bisector



- 9 Given: $\triangle RST \cong \triangle XYZ$
 \overrightarrow{SK} bisects $\angle RST$
 \overrightarrow{YL} bisects $\angle XYZ$

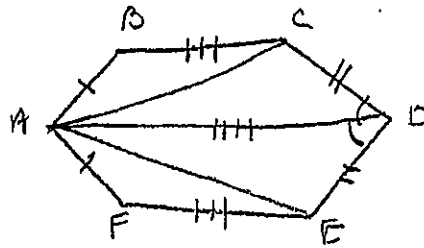


Prove: $\overline{SK} \cong \overline{YL}$

1. $\triangle RST \cong \triangle XYZ$
2. $\overline{RS} \cong \overline{XY}$; $\angle R \cong \angle X$
3. $\angle RST \cong \angle XYZ$
3. $m\angle RST = m\angle XYZ$
4. \overrightarrow{SK} bisects $\angle RST$
 \overrightarrow{YL} bisects $\angle XYZ$
5. $m\angle RSK = \frac{1}{2} m\angle RST$
 $m\angle XYL = \frac{1}{2} m\angle XYZ$
6. $m\angle RSK = \frac{1}{2} m\angle XYZ$
7. $m\angle XYL = m\angle RSK$
8. $\angle XYL \cong \angle RSK$
9. $\triangle RSK \cong \triangle XYL$
10. $\overline{SK} \cong \overline{YL}$

1. Given
2. CPCTC
3. def. \cong
4. Given
5. \angle bis. Thm.
6. Subst.
7. subst.
8. def. \cong
9. ASA
10. CPCTC

10. Prove $\angle B \cong \angle F$



1. Draw \overline{AC} + \overline{AE}
2. $\overline{AD} \cong \overline{AD}$
3. $\triangle CDA \cong \triangle EDA$
4. $\overline{AC} \cong \overline{AE}$
5. $\triangle ABC \cong \triangle AFE$
6. $\angle B \cong \angle F$

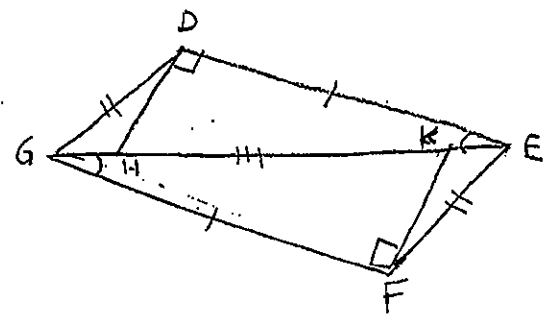
1. Through 2 pts. there is 1 line
2. Reflexive
3. SAS
4. CPCTC
5. SSS
6. CPCTC

(4.6)

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

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



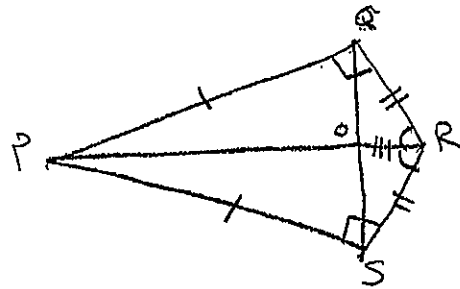
1. $\overline{DE} \cong \overline{FG}$; $\overline{GD} \cong \overline{EF}$
2. $\overline{GE} \cong \overline{GE}$
3. $\triangle GDE \cong \triangle EFG$
4. $\angle DEG \cong \angle FGE$
5. $\angle HDE + \angle KFG$ are rt. \angle s
6. $m\angle HDE = 90$; $m\angle KFG = 90$
7. $m\angle HDE = m\angle KFG$
8. $\angle HDE \cong \angle KFG$
9. $\triangle FGK \cong \triangle DEH$
10. $\overline{DH} \cong \overline{FK}$

*Can be skipped

1. Given
2. Reflexive
3. SSS
4. CPCTC
5. Given
6. def. rt. \angle
7. Subst.
- *8. def. \cong \angle s * All rt. \angle s \cong
9. ASA
10. CPCTC

12

Given: $\overline{PA} \perp \overline{QR}$
 $\overline{PS} \perp \overline{QR}$
 $\overline{PA} \cong \overline{PS}$



Prove: O is the mdpt. of \overline{QS}

1. $\overline{PA} \perp \overline{QR}$; $\overline{PS} \perp \overline{QR}$; $\overline{PA} \cong \overline{PS}$
2. $\angle PAR + \angle PSR$ rt. \angle
3. $\triangle PAR + \triangle PSR$ rt. \triangle
4. $\overline{PR} \cong \overline{PR}$
5. $\triangle PAR \cong \triangle PSR$
6. $\angle QRP \cong \angle SRP$; $\overline{QR} \cong \overline{SR}$
7. $\overline{RO} \cong \overline{RO}$
8. $\triangle QRO \cong \triangle SRO$
9. $\overline{QO} \cong \overline{SO}$
10. O is the mdpt. of \overline{QS}

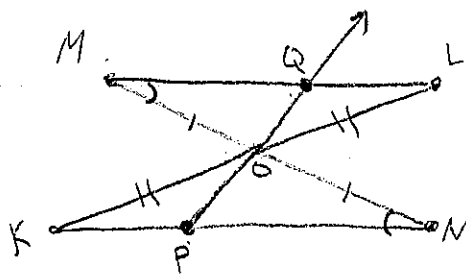
1. Given
2. def. \perp
3. def. rt. \triangle
4. Reflexive
5. HL
6. CPCTC
7. Reflexive
8. SAS
9. CPCTC
10. def. mdpt.

OR

Show $\triangle PQO \cong \triangle PSO$ by SAS
(Steps #5 - 8)

Given:

- (13) • \overline{KL} & \overline{MN} bisect each other at O



Prove:

O is mdpt. of \overline{PQ}

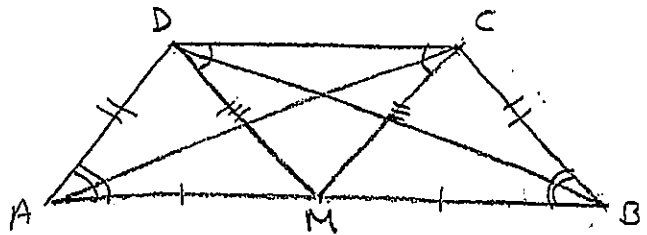
- | | |
|--|------------------------------|
| 1. \overline{KL} & \overline{MN} bisect each other at O | 1. Given |
| 2. O is mdpt. of \overline{KL} & \overline{MN} | 2. def. segm. bisector |
| 3. $\overline{KO} \cong \overline{LO}$; $\overline{MO} \cong \overline{NO}$ | 3. def. mdpt. |
| 4. $\angle MOL \cong \angle KON$ | 4. Vert. \angle 's \cong |
| 5. $\triangle MOL \cong \triangle NOK$ | 5. SAS |
| 6. $\angle M \cong \angle N$ | 6. CPCTC |
| 7. $\angle MOQ \cong \angle NOP$ | 7. Vert. \angle 's \cong |
| 8. $\triangle MOQ \cong \triangle NOP$ | 8. ASA |
| 9. $\overline{OQ} \cong \overline{OP}$ | 9. CPCTC |
| 10. O is mdpt. of \overline{PQ} | 10. def. mdpt. |

4.6

Pg 151 # 15

Given: $\overline{AM} \cong \overline{MB}$; $\overline{AD} \cong \overline{BC}$
 $\angle MDC \cong \angle MCD$

Prove: $\overline{AC} \cong \overline{BD}$



1. $\overline{AM} \cong \overline{MB}$; $\overline{AD} \cong \overline{BC}$
 $\angle MDC \cong \angle MCD$

2. $\overline{DM} \cong \overline{CM}$

3. $\triangle ADM \cong \triangle BCM$

4. $\angle DAM \cong \angle CBM$

5. $\overline{AB} \cong \overline{AB}$

6. $\triangle ADB \cong \triangle BCA$

7. $\overline{AC} \cong \overline{BD}$

1. Given

2. 2 \angle 's $\triangle \cong \rightarrow$ sides opp. \cong

3. SSS

4. CPCTC

5. Reflexive

6. SAS

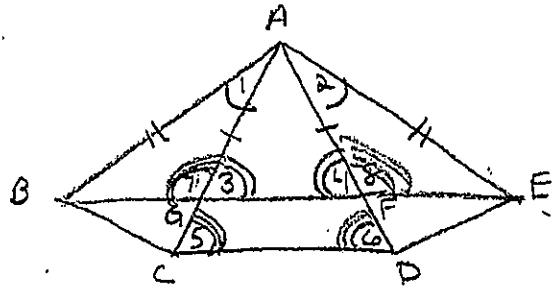
7. CPCTC

Pg 151 # 16

(16)

Given: $\angle 1 \cong \angle 2$
 $\angle 3 \cong \angle 4$
 $\angle 5 \cong \angle 6$

Prove: $\overline{BC} \cong \overline{ED}$



1. $\angle 1 \cong \angle 2$; $\angle 3 \cong \angle 4$; $\angle 5 \cong \angle 6$
2. $m\angle 7 + m\angle 3 = 180$; $m\angle 4 + m\angle 8 = 180$
3. $\angle 7 + \angle 3$ are supp.; $\angle 4 + \angle 8$ are supp.
4. $\angle 7 \cong \angle 8$
5. $\overline{AG} \cong \overline{AF}$; $\overline{AC} \cong \overline{AD}$
6. $\triangle ABG \cong \triangle AEF$
7. $\overline{AB} \cong \overline{AE}$
8. $\triangle ABC \cong \triangle AED$
9. $\overline{BC} \cong \overline{ED}$

1. Given
2. \angle Addn Post.
3. def. supp.
4. 2 \angle s supp. $\cong \angle$ s $\rightarrow \cong$
5. 2 \angle s $\Delta \cong \rightarrow$ sides opp. \cong
6. ASA
7. CPCTC
8. SAS
9. CPCTC