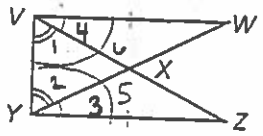
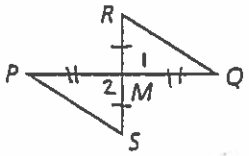
. Given: (1) $\angle ZVY \cong \angle WYV$, (2)
(4) $\angle ZVW \cong \angle WYZ$, (3)
$\overline{VW} \cong \overline{YZ}$
Prove: $\triangle ZVY \cong \triangle WYV$



① $\angle 1 \cong \angle 2$	① given
② $m\angle 1 = m\angle 2$	② def of $\cong$
③ $\angle 3 \cong \angle 4$	③ given
④ $m\angle 3 = m\angle 4$	④ def of $\cong$
⑤ $m\angle 1 + m\angle 4 = m\angle 6$	⑤ angle add. post.
⑥ $m\angle 2 + m\angle 3 = m\angle 5$	⑥ angle add. post
⑦ $m\angle 1 + m\angle 4 = m\angle 5$	⑦ subst. prop of =
⑧ $m\angle 6 = m\angle 5$ (st. 5 & 7)	⑧ subst prop of =
⑨ $\angle 6 \cong \angle 5$	⑨ def of $\cong$
⑩ $\overline{VY} \cong \overline{VY}$	⑩ reflex prop of $\cong$
⑪ $\overline{VW} \cong \overline{YZ}$	⑪ given
⑫ $\triangle ZVY \cong \triangle WYX$	⑫ SAS

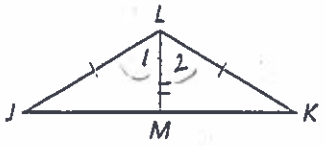
* note:
could also be done with AAS leaving out step 10

Given: M is the midpoint of $\overline{PQ}$ and $\overline{RS}$.
Prove: $\overline{QR} \cong \overline{PS}$



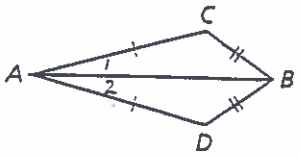
① M is the m.p. of $\overline{PQ}$ & $\overline{RS}$	① given
② $\overline{RM} \cong \overline{MS}$	② def of m.p.
③ $\overline{PM} \cong \overline{MQ}$	③ def of m.p.
④ $\angle 1 + \angle 2$ vert. $\angle$'s	④ def of vert. $\angle$'s
⑤ $\angle 1 \cong \angle 2$	⑤ vert $\angle$ thm
⑥ $\triangle SMP \cong \triangle RMQ$	⑥ SAS
⑦ $\overline{QR} \cong \overline{PS}$	⑦ cpctc

Given: $\overline{LM}$ bisects $\angle JLK$. $\overline{JL} \cong \overline{KL}$
Prove: M is the midpoint of $\overline{JK}$.



(1) $\overline{LM}$ bisects $\angle JLK$	(1) given
(2) $\angle 1 \cong \angle 2$	(2) def of $\angle$ bisector
(3) $\overline{JL} \cong \overline{KL}$	(3) given
(4) $\overline{LM} \cong \overline{LM}$	(4) reflexive prop $\cong$
(5) $\triangle JML \cong \triangle KML$	(5) SAS
(6) $\overline{JM} \cong \overline{MK}$	(6) cpctc
(7) M is the m.p of $\overline{JK}$	(7) def of m p

Given: $\overline{AC} \cong \overline{AD}$, $\overline{CB} \cong \overline{DB}$
Prove: $\overline{AB}$ bisects $\angle CAD$.



(1) $\overline{AC} \cong \overline{AD}$	(1) given
(2) $\overline{CB} \cong \overline{DB}$	(2) given
(3) $\overline{AB} \cong \overline{AB}$	(3) reflex prop $\cong$
(4) $\triangle CAB \cong \triangle DAB$	(4) SSS
(5) $\angle 1 \cong \angle 2$	(5) cpctc
(6) $\overline{AB}$ bisects $\angle CAD$	(6) def of $\angle$ bisector