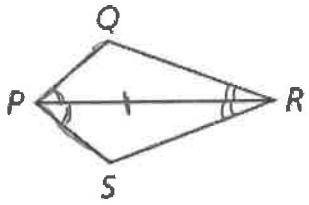
4.6 Proofs

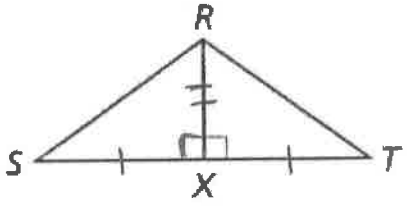
Name: KEY Blk:_____

Given: $\overline{PR}$ bisects $\angle QPS$ and $\angle QRS$.
Prove: $\overline{PQ} \cong \overline{PS}$



Statements	Reasons
1. $\overline{PR}$ bisects $\angle QPS$ & $\angle QRS$	1. Given
2. $\overline{PR} \cong \overline{PR}$	2. Reflexive POC
3. $\angle QPR \cong \angle SPR$, *and* $\angle QRP \cong \angle SRP$	3. Def. of Bisector
4. $\Delta PQR \cong \Delta PSR$	4. ASA
5. $\overline{PQ} \cong \overline{PS}$	5. CPCTC

Given: X is the midpoint of $\overline{ST}$. $\overline{RX} \perp \overline{ST}$
Prove: $\overline{RS} \cong \overline{RT}$

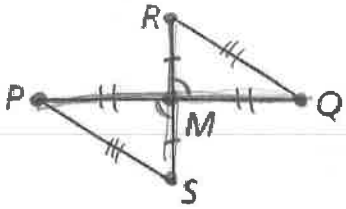


Statements	Reasons
1. $\overline{RX} \perp \overline{ST}$	1. Given
2. $\angle RXS$, *and* $\angle RXT$ are rt. angles	2. Def. of perpendicular
3. $\angle RXS \cong \angle RXT$	3. All Right $\angle$'s are $\cong$
4. X is the midpoint of $\overline{ST}$	4. Given
5. $\overline{SX} \cong \overline{XT}$	5. Def. of Midpt.
6. $\overline{RX} \cong \overline{RX}$	6. Reflexive POC
7. $\Delta RXS \cong \Delta RXT$	7. SAS
8. $\overline{RS} \cong \overline{RT}$	8. CPCTC

4.6 Proofs Name:_____ Blk:_____

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

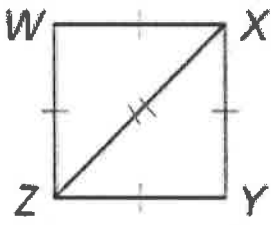
Prove: $\overline{QR} \cong \overline{PS}$



Statements	Reasons
1. M is the midpoint of $\overline{PQ}$ and $\overline{RS}$	1. Given
2. $\overline{QM} \cong \overline{PM}$, $\overline{RM} \cong \overline{SM}$	2. Def. of Midpoint
3. $\angle PMS \cong \angle QMR$	3. Vertical ∠'s Thm
4. $\triangle PMS \cong \triangle QMR$	4. SAS
5. $\overline{QR} \cong \overline{PS}$	5. CPCTC

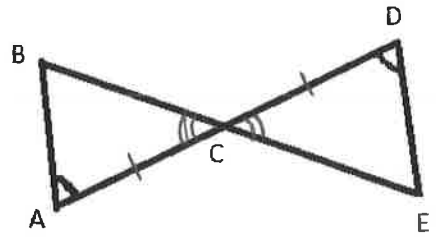
Given: $\overline{WX} \cong \overline{XY} \cong \overline{YZ} \cong \overline{ZW}$

Prove: $\angle W \cong \angle Y$



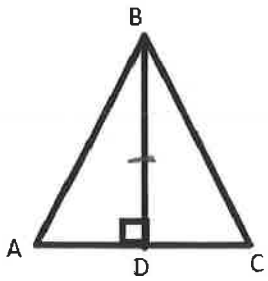
Statements	Reasons
1. $\overline{WX} \cong \overline{XY} \cong \overline{YZ} \cong \overline{ZW}$	1. Given
2. $\overline{ZX} \cong \overline{ZX}$	2. Reflexive POC
3. $\triangle WZX \cong \triangle YZX$	3. SSS
4. $\angle W \cong \angle Y$	4. CPCTC

Determine what additional information you would need to prove the triangles congruent using the given congruence postulate:



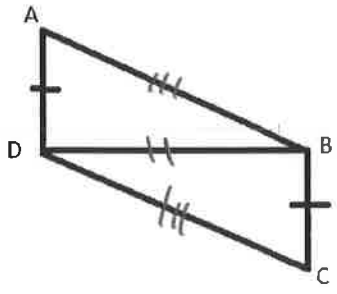
ASA

$\overline{AC} \cong \overline{DC}$



HL

$\overline{AB} \cong \overline{CB}$



SSS

$\overline{AB} \cong \overline{DC}$