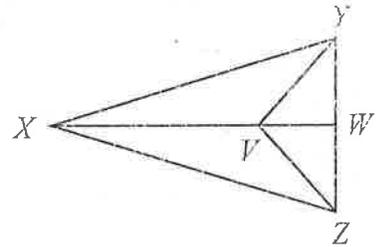**Given:** $\overline{WX}$ bisects $\angle ZXY$, $\overline{ZX} \cong \overline{YX}$

**Prove:** $\triangle ZXV \cong \triangle YXV$



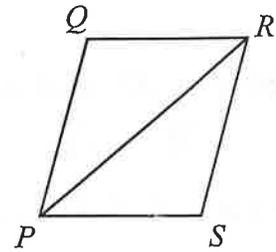| Statements | Reasons |
|---|---|
| 1. $\overline{WX}$ bisects $\angle ZXY$ | 1. Given |
| 2. | 2. Definition of Angle Bisector |
| 3. $\overline{ZX} \cong \overline{YX}$ | 3. |
| 4. | 4. Reflexive Property |
| 5. $\triangle ZXV \cong \triangle YXV$ | 5. |

**Given:** $\overline{PQ} \parallel \overline{RS}$, $\angle PQR \cong \angle RSP$

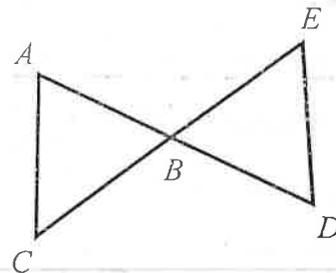**Prove:** $\triangle PQR \cong \triangle RSP$



| Statements | Reasons |
|---|---|
| 1. | 1. Given |
| 2. | 2. Alternate Interior Angles |
| 3. $\angle PQR \cong \angle RSP$ | 3. |
| 4. $\overline{RP} \cong \overline{PR}$ | 4. |
| 5. $\triangle PQR \cong \triangle RSP$ | 5. |

**3**

Given: $\overline{AC} \cong \overline{DE}$, $B$ is the midpoint of $\overline{AD}$ and $\overline{CE}$
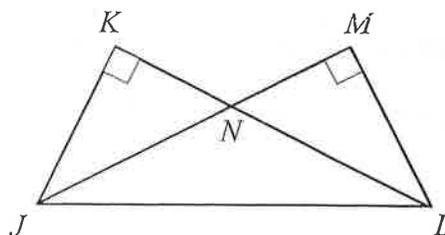
Prove: $\triangle ABC \cong \triangle DBE$

| Statements | Reasons |
|---|---|
| 1. $\overline{AC} \cong \overline{DE}$ | 1. |
| 2. $B$ is the midpoint of $\overline{AD}$ and $\overline{CE}$ | 2. |
| 3. | 3. Definition of Midpoint |
| 4. | 4. Definition of Midpoint |
| 5. $\triangle ABC \cong \triangle DBE$ | 5. |

**4**

Given: $\triangle JKL$ and $\triangle LMJ$ are right triangles, $\overline{JK} \cong \overline{LM}$
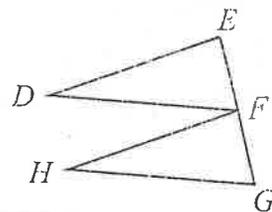
Prove: $\angle JLK \cong \angle LJM$

| Statements | Reasons |
|---|---|
| 1. $\triangle JKL$ and $\triangle LMJ$ are right triangles | 1. |
| 2. | 2. Given |
| 3. $\overline{JL} \cong \overline{LJ}$ | 3. |
| 4. | 4. Hypotenuse-Leg (HL) |
| 5. $\angle JLK \cong \angle LJM$ | 5. |

**5**

Given: $\overline{DF} \parallel \overline{HG}$, $F$ is the midpoint of $\overline{EG}$

$\overline{DF} \cong \overline{HG}$

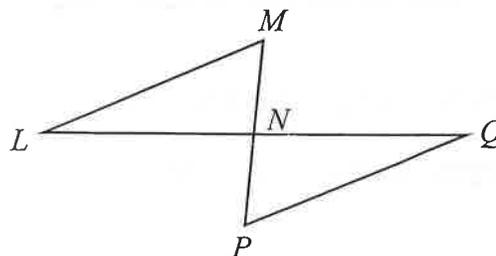Prove: $\triangle DEF \cong \triangle HFG$

| Statements | Reasons |
|---|---|
| 1. | 1. Given |
| 2. $F$ is the midpoint of $\overline{EG}$ | 2. |
| 3. | 3. Given |
| 4. | 4. Corresponding Angles |
| 5. $\overline{EF} \cong \overline{FG}$ | 5. |
| 6. $\triangle DEF \cong \triangle HFG$ | 6. |

**6**

Given: $N$ is the midpoint of $\overline{LQ}$,

$\angle NLM \cong \angle NQP$
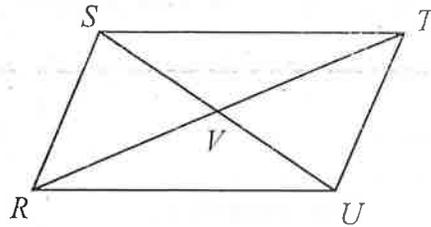
Prove: $\triangle MNL \cong \triangle PNQ$

| Statements | Reasons |
|---|---|
| 1. $N$ is the midpoint of $\overline{LQ}$ | 1. |
| 2. | 2. Definition of Midpoint |
| 3. $\angle LNM \cong \angle QNP$ | 3. |
| 4. $\angle NLM \cong \angle NQP$ | 4. |
| 5. $\triangle MNL \cong \triangle PNQ$ | 5. |

**7**

Given: $\overline{SU}$ and $\overline{RT}$ bisect each other,
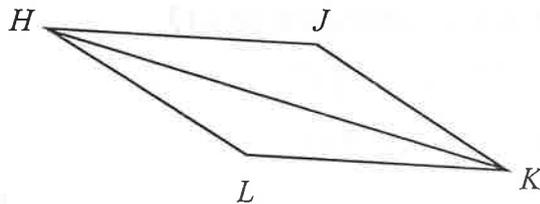$\overline{ST} \cong \overline{UR}$

Prove: $\angle STV \cong \angle URV$

| Statements | Reasons |
|---|---|
| 1. $\overline{SU}$ and $\overline{RT}$ bisect each other | 1. |
| 2. $\overline{SV} \cong \overline{UV}$; $\overline{RV} \cong \overline{TV}$ | 2. |
| 3. | 3. Given |
| 4. | 4. Side-Side-Side (SSS) |
| 5. $\angle STV \cong \angle URV$ | 5. |

**8**

Given: $\overline{HJ} \parallel \overline{LK}$, $\overline{HL} \parallel \overline{JK}$

Prove: $\triangle HKL \cong \triangle KHJ$

| Statements | Reasons |
|---|---|
| 1. $\overline{HJ} \parallel \overline{LK}$, $\overline{HL} \parallel \overline{JK}$ | 1. |
| 2. | 2. Alternate Interior Angles |
| 3. $\angle JKH \cong \angle LHK$ | 3. |
| 4. | 4. Reflexive Property |
| 5. $\triangle HKL \cong \triangle KHJ$ | 5. |