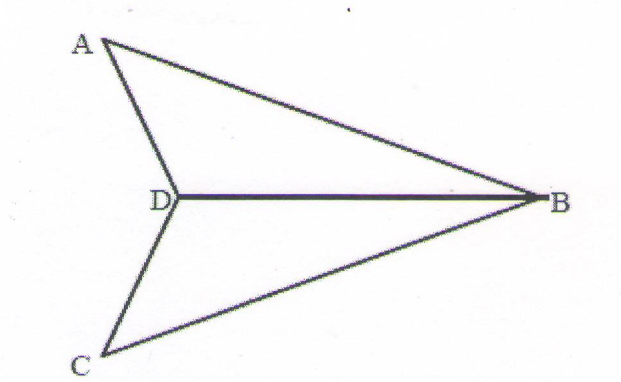
SOLUTIONS

1. **Given:** $\overline{DB}$ bisects $\angle ABC$, $\overline{AB} \perp \overline{BC}$

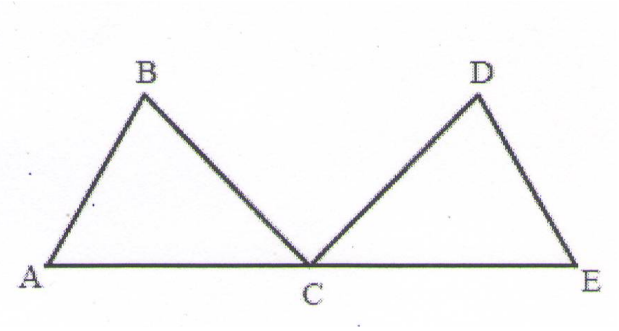


Prove: $\angle A \cong \angle C$

PROOF

Statement	Reason
$\overline{AB} \cong \overline{CB}$	Given
$\angle ABD \cong \angle CBD$	Given (Definition of Angle Bisector)
$\overline{DB} \cong \overline{DB}$	Reflexive Property
$\triangle ABD \cong \triangle CBD$	SAS
$\angle A \cong \angle C$	CPCTC

2. Given: C bisects $\overline{AE}$, $\angle B \cong \angle D$ (right angles), and $\angle A \cong \angle E$

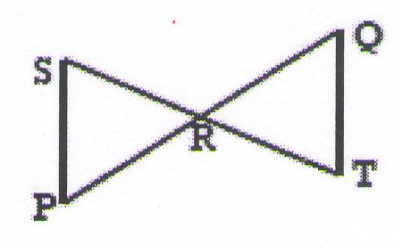


Prove: $\overline{BC} \cong \overline{DC}$

PROOF

Statement	Reason
$\angle B \cong \angle D$	Given (right angles)
$\angle A \cong \angle E$	Given
$\overline{AC} \cong \overline{EC}$	Given (C bisects $\overline{AE}$)
$\triangle ABC \cong \triangle EDC$	AAS
$\overline{BC} \cong \overline{DC}$	CPCTC

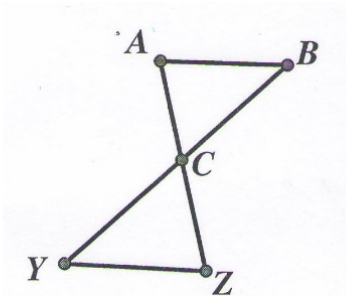
3. Given**: R is the midpoint of** $\overline{PQ}$ **and** $\overline{ST}$**. Prove:** $\angle P \cong \angle Q$.



PROOF

Statement	Reason
$\overline{SR} \cong \overline{TR}$	Definition of a midpoint
$\angle SRP \cong \angle TRP$	Vertical angles
$\overline{AC} \cong \overline{EC}$	Definition of a midpoint
$\triangle SRP \cong \triangle TRQ$	SAS
$\angle P \cong \angle Q$	CPCTC

4. Given: $\angle A \cong \angle B$, C is the midpoint of $\overline{BY}$. Prove: $\overline{AB} \cong \overline{ZY}$.



PROOF

Statement	Reason
$\angle B \cong \angle Y$	Given
$\overline{BC} \cong \overline{YC}$	Definition of a midpoint
$\angle ACB \cong \angle ZCY$	Vertical angles
$\triangle ABC \cong \triangle ZCY$	ASA
$\overline{AB} \cong \overline{ZY}$	CPCTC