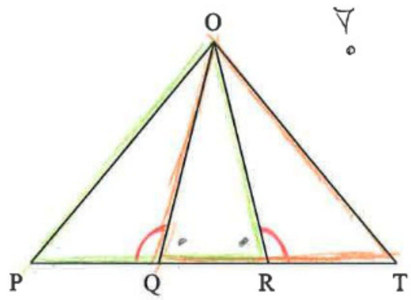
2. **Given:**; $\Delta POR \cong \Delta TOQ$

Prove: $\angle PQO \cong \angle TRO$

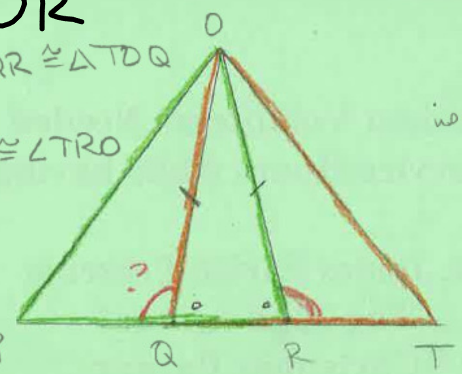


Statements	Reasons
$\Delta POR \cong \Delta TOQ$	Given
$\angle PRO \cong \angle TQO$	CPCTC
$m\angle PRO = m\angle TQO$	def $\cong \angle$s.
$\angle PQO$ + $\angle TQO$ form a linear pair $\angle TRO$ + $\angle PRO$ form a linear pair	Def linear pair
$m\angle PQO + m\angle TQO = 180$	Supplement theorem
$m\angle TRO + m\angle PRO = 180$	
$m\angle PQO + m\angle PRO = 180$	Substitution ($m\angle PRO = m\angle TQO$)
$\angle TRO \cong \angle PQO$	Congruent supplements theorem
$\angle PQO \cong \angle TRO$	Symmetric property of $\cong \angle$s

$\triangle POR$

Given: $\triangle PQR \cong \triangle TOQ$

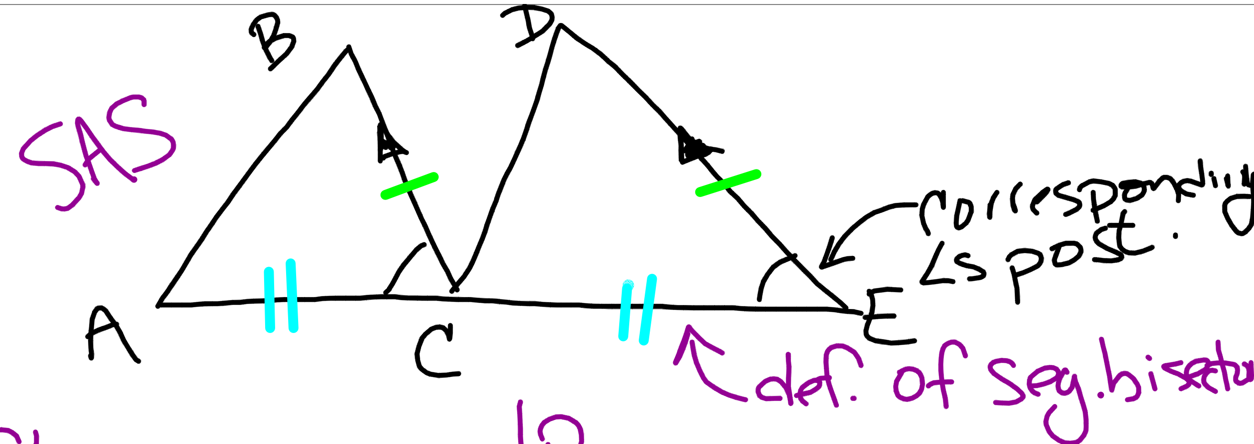
Prove: $\angle PQO \cong \angle TRO$



is $\triangle QOR$ isosceles?

yes ☺

Statements	Reasons
$\triangle PDR \cong \triangle TOQ$	Given
$\overline{OR} \cong \overline{OQ}$	CPCTC
$\triangle QOR$ is isosceles $\triangle$	def isosceles $\triangle$.
$\angle OQR \cong \angle ORQ$	isosceles $\triangle$ theorem.
$m\angle OQR = m\angle ORQ$	def $\cong$ $\angle$s.
$\angle PQO$ & $\angle OQR$ form a linear pair; $\angle TRO$ & $\angle ORQ$ form a linear pair	def linear pair
$m\angle PQO + m\angle OQR = 180$; $m\angle TRO + m\underline{\angle ORQ} = 180$	$\angle$s in a linear pair are supplementary.
$m\angle PQO + m\underline{\angle ORQ} = 180$	Substitution ($m\angle OQR = m\angle ORQ$)
$\angle PQO \cong \angle TRO$	Congruent supplements theorem.

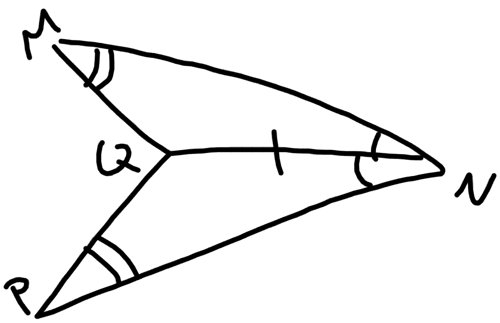


Sta	Reasons.
(s) $\overline{BC} \cong \overline{DE}$	Given
$\overline{BC} \parallel \overline{DE}$	Given
(a) $\angle ACB \cong \angle E$	Corresponding ∠s post.
$\overline{BC}$ bisects $\overline{AE}$	Given
(s) $\overline{AC} \cong \overline{CE}$	def. seg. bisector
$\triangle ABC \cong \triangle CDE$	SAS
$\angle B \cong \angle D$	CPCTC

Given: $\angle M \cong \angle P$

$\overline{QN}$ bisects $\angle MNP$

Prove: $\triangle MNQ \cong \triangle PNQ$

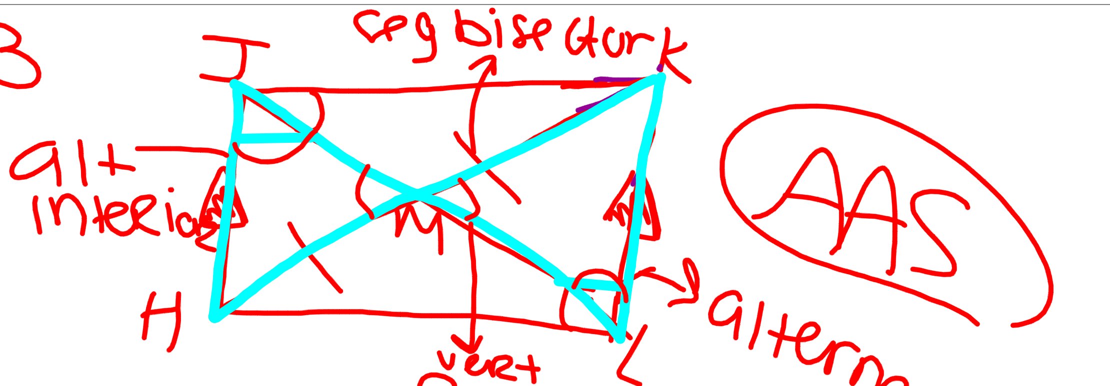


AAS

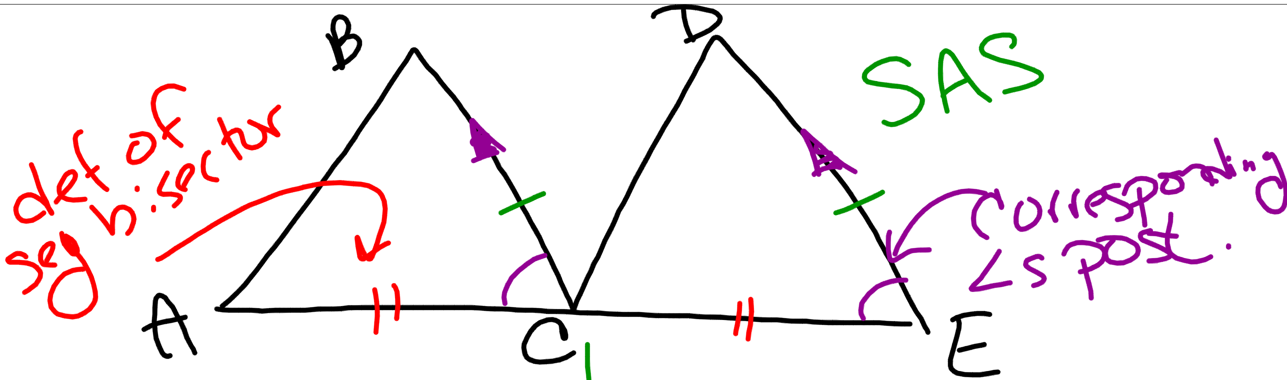
Proof:

Statements	reasons
(A) $\angle M \cong \angle P$	Given
$\overline{QN}$ bisects $\angle MNP$	Given
(A) $\angle MNQ \cong \angle PNQ$	Def. of angle bisectors
(S) $\overline{QN} \cong \overline{QN}$	Reflexive property
$\triangle MNQ \cong \triangle PNQ$	AAS

#3

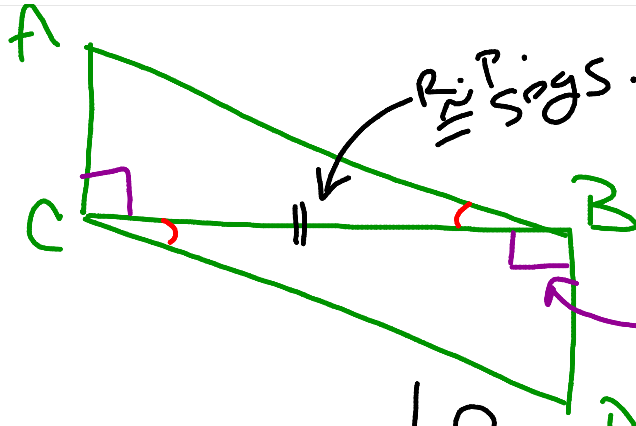


Statements	Reasons
$\overline{HJ} \parallel \overline{KL}$	Given
(A) $\angle HMJ \cong \angle KML$	alternate interior
(A) $\angle JMH \cong \angle LMK$	all verti~~cle~~cal <'s are ≅
$\overline{JL}$ bisects $\overline{HK}$	Given
(S) $\overline{HM} \cong \overline{MK}$	def. of seg bisector
$\triangle JMH \cong \triangle LKM$	AAS



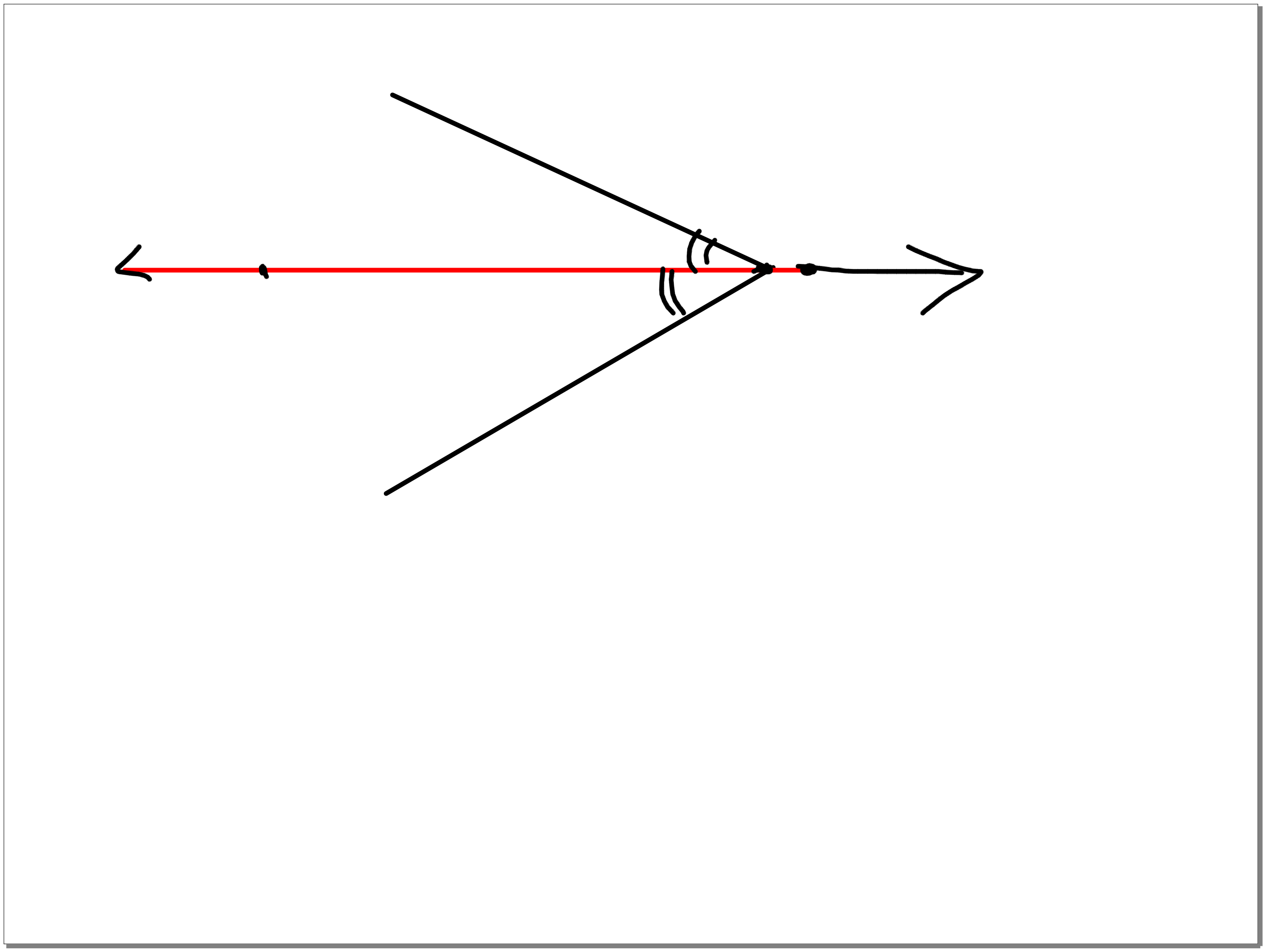
Statements.	Reasons.
(s) $\overline{BC} \cong \overline{DE}$	Given.
$\overline{BC} \parallel \overline{DE}$	Given
(a) $\angle ACB \cong \angle CED$	corresponding ∠s post.
$\overline{BC}$ bisects $\overline{AE}$	Given
(S) $\overline{AC} \cong \overline{CE}$	def seg bisector.
$\triangle BCA \cong \triangle DEC$	SAS
$\angle B \cong \angle D$	CPCTC

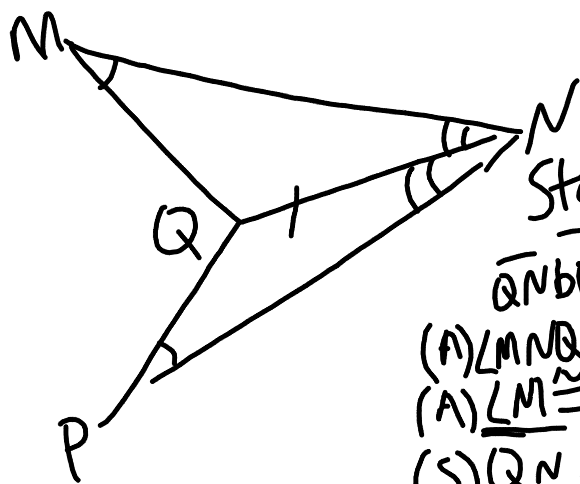
ASA



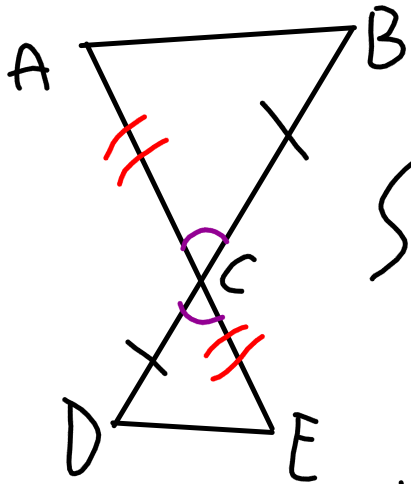
⊥ lines form right ∠s.

St.	Reasons.
$\overline{AC} \perp \overline{BC}$ $\overline{BC} \perp \overline{BD}$	Given.
$\angle ACB$ & $\angle DBC$ are right $\angle$s	⊥ lines form right ∠s.
(a) $\angle ACB \cong \angle DBC$	all right ∠s are ≅
(s) $\overline{CB} \cong \overline{CB}$	reflexive prop ≅ segs.
(a) $\angle DCB \cong \angle ABC$	Given
$\triangle ABC \cong \triangle DCB$	ASA
$\overline{AB} \cong \overline{DC}$	CPCTC



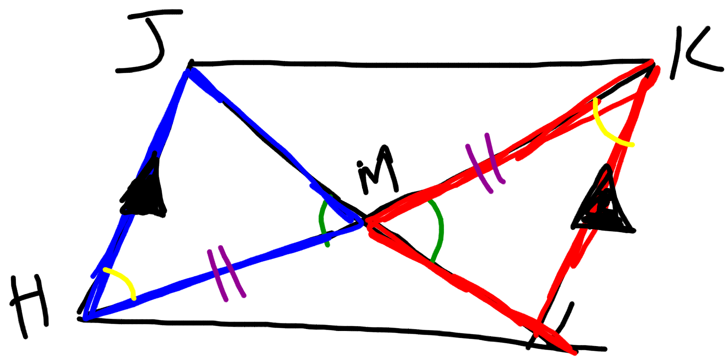


Statements	Reasons
$\overline{QN}$ bisects $\angle MNP$	Given
(A) $\angle MNQ \cong \angle PNQ$	def. of $\angle$ bisector
(A) $\angle M \cong \angle P$	Given
(S) $\overline{QN} \cong \overline{QN}$	reflexive prop. of $\cong$ seg.
$\triangle MNQ \cong \triangle PNQ$	AAS

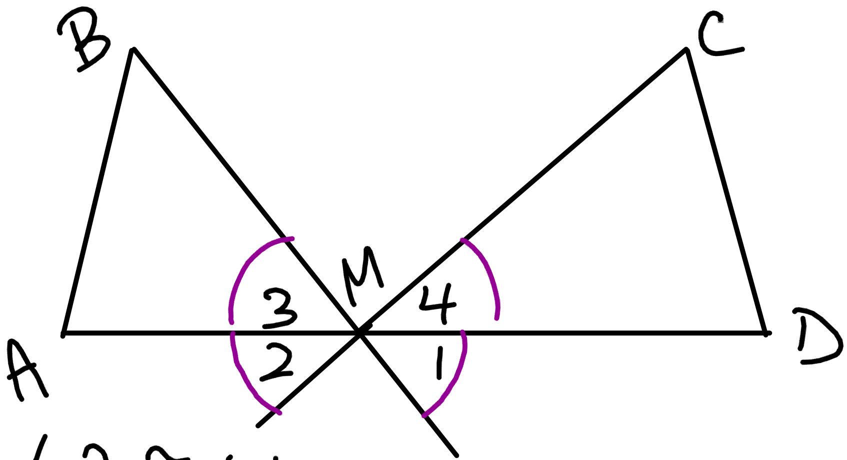


SAS

Statements	Reasons
C midpt. of $\overline{BD}$	Given
$\overline{CB} \cong \overline{CD}$	Def. of seg. bisector
$\angle ACB \cong \angle DCE$	



Statements	Reasons
1. $\overline{HJ} \parallel \overline{KL}$; $\overline{JL}$ bisects $\overline{HK}$	1. Given
(A) 2. ∠JMH ≅ ∠KML	2. vertical ∠s are ≅ .
(S) 3. $\overline{HM} \cong \overline{KM}$	3. def. of ∠ bisector.
(A) 4. ∠JMH ≅ ∠LMK	4. alt. int.
5. △JHM ≅ △LKM	5. ASA



Given: $\angle 2 \cong \angle 1$

$\overline{CM}$ bisects $\overline{AD}$

$\angle B \cong \angle C$

Prove: $\overline{MB} \cong \overline{MC}$

$\angle 2 \cong \angle 1$	Given
$\angle 1 \cong \angle 3$	Vertical $\angle$s are $\cong$
$\angle 2 \cong \angle 3$	transitive prop $\cong$ $\angle$s.
$\angle 2 \cong \angle 4$	vertical $\angle$s $\cong$
(A) $\angle 3 \cong \angle 4$	substitution