

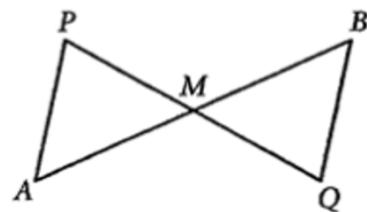
GEOMETRY
CONGRUENT TRIANGLES PROOFS

Name: KEY

Write a two column proof for the following problems.

1. Given: M is the midpoint of \overline{AB} and \overline{PQ}

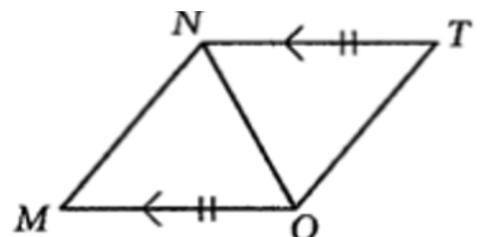
Prove: $\Delta APM \cong \Delta QBM$



Statements	Reasons
1. M is the midpoint of AB and PQ	1. Given
2. $AM \cong MB$ and $PM \cong MQ$	2. Def of midpoint
3. $\angle PMA \cong \angle QMB$	3. Vertical angles are congruent
4. $\Delta APM \cong \Delta QBM$	4. SAS

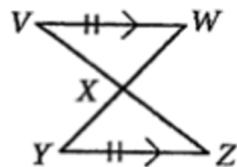
2. Given: \overline{NT} is parallel and \cong to \overline{MO}

Prove: $\angle M \cong \angle T$



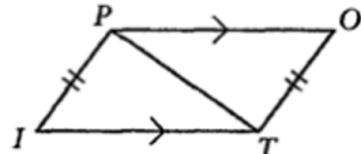
Statements	Reasons
1. NT is // and \cong to MO	1. Given
2. ON \cong ON	2. Reflexive
3. $\angle NOM \cong \angle TNO$	3. // lines form \cong alt. int. \angle s
4. $\Delta MON \cong \Delta TNO$	4. SAS
5. $\angle M \cong \angle T$	5. CPCTC

3. Given: \overline{VW} is parallel and \cong to \overline{YZ}
 Prove: $\Delta XVW \cong \Delta XZY$



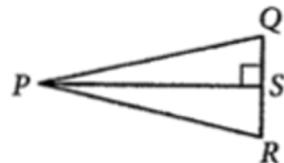
Statements	Reasons
1. \overline{VW} is parallel and \cong to \overline{YZ}	1. Given
2. $\angle V \cong \angle Z$ And $\angle W \cong \angle Y$	2. // lines form \cong alt. int. \angle s
3. $\Delta XVW \cong \Delta XZY$	3. ASA

4. Given: \overline{PO} is parallel to \overline{IT}
 $\overline{PI} \cong \overline{TO}$
 $\angle O \cong \angle I$
 Prove: $PO \cong IT$



Statements	Reasons
1. PO is // to IT, PI \cong TO, $\angle O \cong \angle I$	1. Given
2. $\angle OPT \cong \angle ITP$	2. // lines form \cong alt. int. \angle s
3. $TP \cong TP$	3. Reflexive
4. $\Delta PIT \cong \Delta TOP$	4. AAS
5. PO \cong IT	5. CPCTC

5. Given: \overline{PS} is the angle bisector of $\angle QPR$
 $\angle QSP \cong \angle RSP$
 Prove: S is the midpoint of QR



Statements	Reasons
1. PS is an \angle bisector of $\angle QPR$, $\angle QSP \cong \angle RSP$	1. Given
2. $\angle QPS \cong \angle RPS$	2. Def. of Angle bisector
3. $SP \cong SP$	3. Reflexive
4. $\Delta PQS \cong \Delta PRS$	4. ASA
5. QS \cong RS	5. CPCTC
6. S is the midpoint of QR	6. Def. of Midpoint

