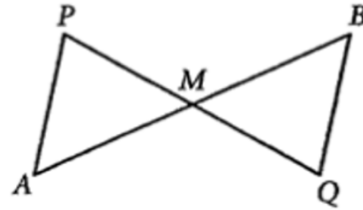


GEOMETRY
CONGRUENT TRIANGLES PROOFS

Name: **KEY**

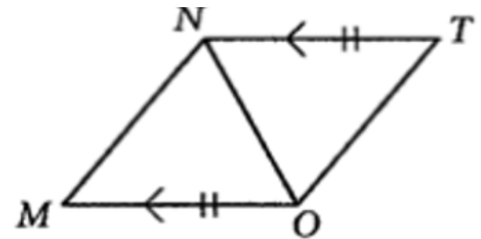
Write a two column proof for the following problems.

1. Given: M is the midpoint of \overline{AB} and \overline{PQ}
 Prove: $\triangle APM \cong \triangle QBM$



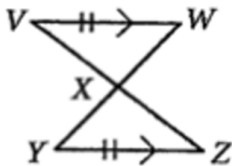
Statements	Reasons
1. M is the midpoint of AB and PQ	1. Given
2. $AM \cong MB$ and $PM \cong MQ$	2. Def of midpoint
3. $\angle PMA \cong \angle QMB$	3. Vertical angles are congruent
4. $\triangle APM \cong \triangle QBM$	4. SAS

2. Given: \overline{NT} is parallel and \cong to \overline{MO}
 Prove: $\angle M \cong \angle T$



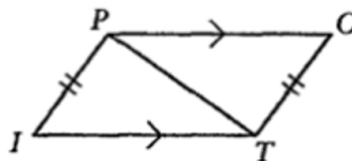
Statements	Reasons
1. NT is \parallel and \cong to MO	1. Given
2. $ON \cong ON$	2. Reflexive
3. $\angle NOM \cong \angle TNO$	3. \parallel lines form \cong alt. int. \angle s
4. $\triangle MON \cong \triangle TNO$	4. SAS
5. $\angle M \cong \angle T$	5. CPCTC

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



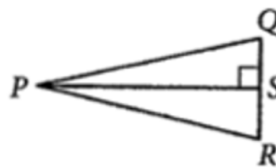
Statements	Reasons
1. \overline{VW} is parallel and \cong to \overline{YZ}	1. <i>Given</i>
2. $\angle V \cong \angle Z$ And $\angle W \cong \angle Y$	2. // lines form \cong alt. int. \angle s
3. $\Delta XVW \cong \Delta XZY$	3. <i>ASA</i>

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. <i>AAS</i>
5. $PO \cong IT$	5. <i>CPCTC</i>

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. <i>ASA</i>
5. $QS \cong RS$	5. <i>CPCTC</i>
6. <i>S is the midpoint of QR</i>	6. Def. of Midpoint

