

GEOMETRY

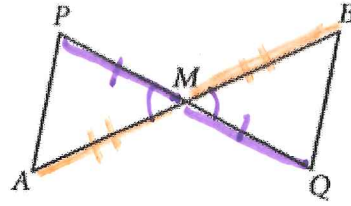
CONGRUENT TRIANGLES PROOFS (proofs of $\cong \Delta$ s)

Name _____

Key

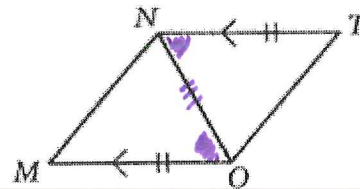
Write a two column proof for the following problems.

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



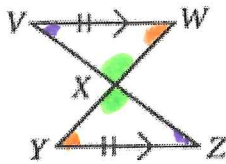
1. M is midpt of \overline{AB} + \overline{PQ}	1. given
2. $AM \cong MB$ $PM \cong MQ$	2. def of midpt
3. $\angle PMA \cong \angle QMB$	3. Vertical \angle s \cong
4. $\Delta APM \cong \Delta QBM$	4. SAS

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



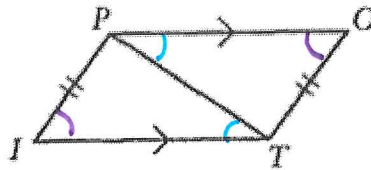
1. $NT \parallel MO$ $NT \cong MO$	1. given
2. $NO \cong NO$	2. reflexive
3. $\angle NOM \cong \angle TNO$	3. alt int. \angle s are \cong
4. $\Delta MON \cong \Delta TNO$	4. SAS
5. $\angle M \cong \angle T$	5. Cpctc

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



- | | |
|---|-------------------------------|
| 1. $VW \cong YZ$
$VW \parallel YZ$ | 1. given |
| 2. $\angle V \cong \angle Z$
$\angle W \cong \angle Y$ | 2. alt int \angle s \cong |
| 3. $\Delta XVW \cong \Delta XYZ$ | 3. ASA |

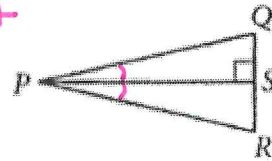
4. Given: \overline{PO} is parallel to \overline{IT} , $\angle O \cong \angle I$
 $\overline{PI} \cong \overline{TO}$
 Prove: $\Delta PIT \cong \Delta TOP$ $PO \cong IT$



- | | |
|---|--------------------------------|
| 1. $PO \parallel IT$, $\angle O \cong \angle I$
$PI \cong TO$ | 1. given |
| 2. $\angle OPT \cong \angle ITP$ | 2. alt int. \angle s \cong |
| 2.5 $PT \cong PT$ | 2.5 reflexive |
| 3. $\Delta PIT \cong \Delta TOP$ | 3. AAS |
| 4. $PO \cong IT$ | 4. CPCTC |

~~NOT possible~~

5. Given: \overline{PS} is the angle bisector of $\angle QPR$, $\angle QSP \cong \angle RSP$
 Prove: $\Delta PQS \cong \Delta PRS$ ~~$QS \cong SR$~~ S is midpt of QR



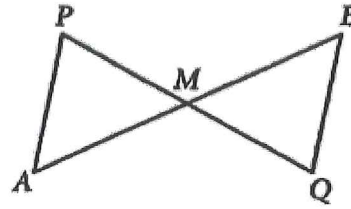
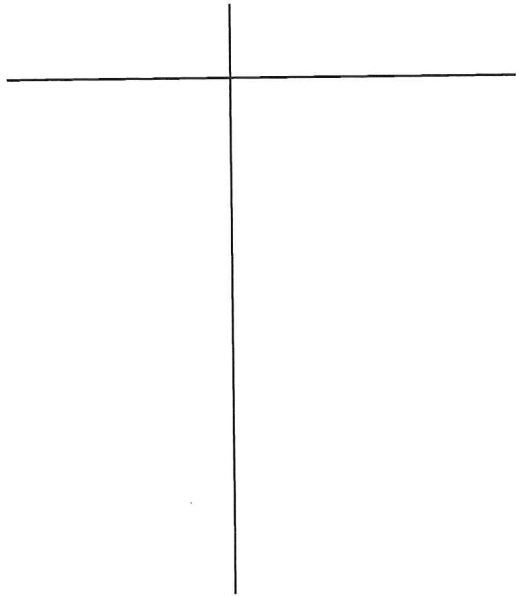
- | | |
|---|-----------------|
| 1. PS is \angle bisector of $\angle QPR$
$\angle QSP \cong \angle RSP$ | 1. given |
| 2. $PS \cong PS$ | 2. reflexive |
| 3. $\Delta PQS \cong \Delta PRS$ | 3. ASA |
| 4. RS
midpt of QR | 4. CPCTC |
| | 5. def of midpt |

GEOMETRY
CONGRUENT TRIANGLES PROOFS

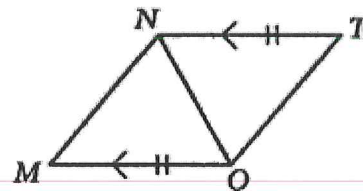
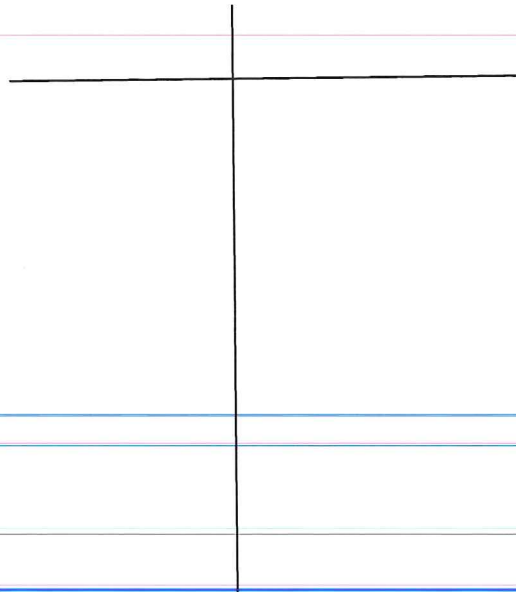
Name _____

Write a two column proof for the following problems.

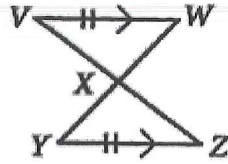
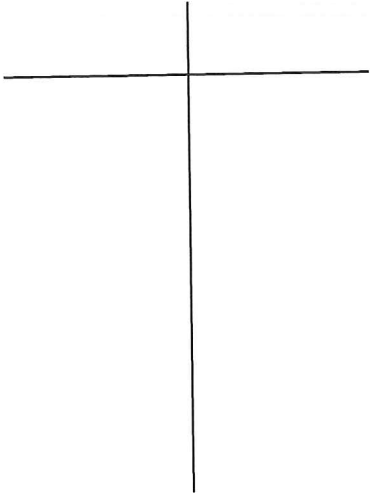
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Prove: $\triangle APM \cong \triangle QBM$



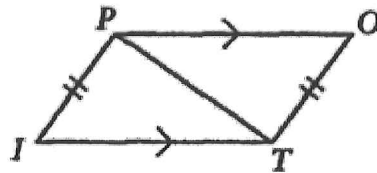
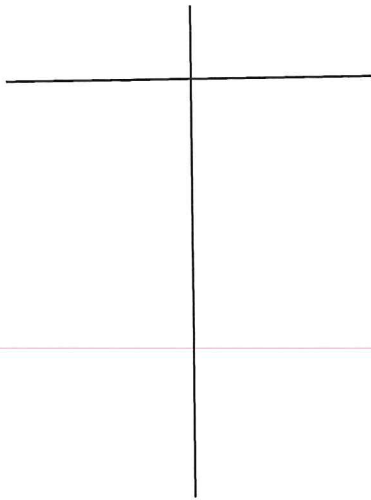
2. Given: \overline{NT} is parallel and \cong to \overline{MO}
Prove: $\angle M \cong \angle T$



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



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



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

