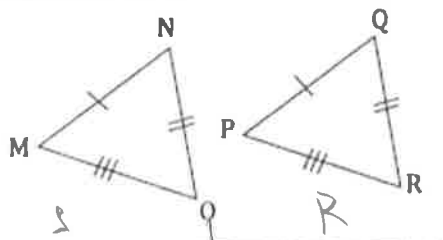


Learning Goals:

- I can use theorems, postulates, or definitions to prove theorems about triangles.

1. Given: $\overline{MN} \cong \overline{PQ}$, $\overline{NO} \cong \overline{QR}$, $\overline{OM} \cong \overline{RP}$

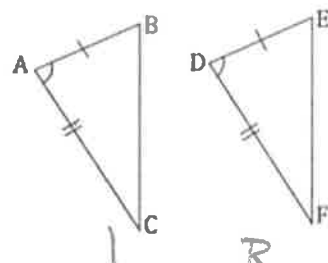
Prove: $\angle M \cong \angle P$



- | | |
|--|---|
| <p>1. $\overline{MN} \cong \overline{PQ}$, $\overline{NO} \cong \overline{QR}$, $\overline{OM} \cong \overline{RP}$</p> <p>2. $\triangle MNO \cong \triangle RPQ$</p> <p>3. $\angle M \cong \angle P$</p> | <p>1. Given</p> <p>2. SSC</p> <p>3. CPCTC</p> |
|--|---|

2. Given: $\overline{AB} \cong \overline{DE}$, $\angle A \cong \angle D$, and $\overline{AC} \cong \overline{DF}$

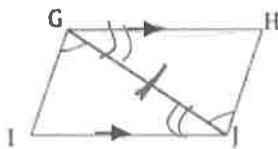
Prove: $\angle C \cong \angle F$



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|--|---|
| <p>1. $\overline{AB} \cong \overline{DE}$, $\angle A \cong \angle D$, $\overline{AC} \cong \overline{DF}$</p> <p>2. $\triangle BAC \cong \triangle EDF$</p> <p>3. $\angle C \cong \angle F$</p> | <p>1. Given</p> <p>2. SAS</p> <p>3. CPCTC</p> |
|--|---|

3. Given: $\overline{GH} \parallel \overline{JI}$, $\angle IGJ \cong \angle HJG$

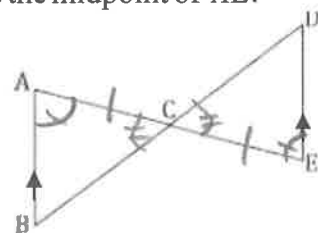
Prove: $\overline{IG} \cong \overline{HJ}$



- | | |
|---|--|
| <p>1. $\overline{GH} \parallel \overline{JI}$</p> <p>2. $\angle IGS \cong \angle HGS$</p> <p>3. $\angle IGS \cong \angle HGS$</p> <p>4. $\overline{GS} \cong \overline{GS}$</p> <p>5. $\triangle GSI \cong \triangle JGH$</p> <p>6. $\overline{IG} \cong \overline{HJ}$</p> | <p>1. Given</p> <p>2. Alternate Interior Angles Theorem</p> <p>3. Given</p> <p>4. Reflexive Property</p> <p>5. ASA</p> <p>6. CPCTC</p> |
|---|--|

4. Given: $\overline{AB} \parallel \overline{DE}$, C is the midpoint of $\overline{AE}$.

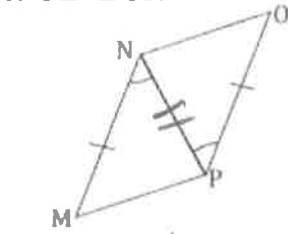
Prove: $\overline{BC} \cong \overline{DC}$



- | | |
|---|--|
| <p>1. $\overline{AB} \parallel \overline{DE}$</p> <p>2. $\angle A \cong \angle E$</p> <p>3. $\angle ACB \cong \angle ECD$</p> <p>4. C is the midpoint of $\overline{AE}$</p> <p>5. $\overline{AC} \cong \overline{EC}$</p> <p>6. $\triangle ACB \cong \triangle ECD$</p> <p>7. $\overline{BC} \cong \overline{DC}$</p> | <p>1. Given</p> <p>2. Alt. Int. Angle Theorem</p> <p>3. Vert. Angles Thm.</p> <p>4. Given</p> <p>5. Def. of midpoint</p> <p>6. ASA</p> <p>7. CPCTC</p> |
|---|--|

5. Given: $\angle MNP \cong \angle OPN$, and $\overline{MN} \cong \overline{OP}$

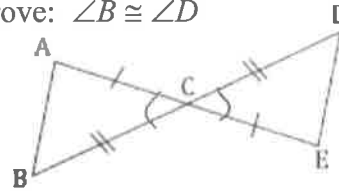
Prove: $\overline{MP} \cong \overline{ON}$



S	R
1. $\angle MNP \cong \angle OPN, \overline{MN} \cong \overline{OP}$	1. Given
2. $\overline{NP} \cong \overline{NP}$	2. Reflexive Property
3. $\triangle MNP \cong \triangle OPN$	3. SAS
4. $\overline{MP} \cong \overline{ON}$	4. CPCTC

6. Given: C is the midpoint of $\overline{AE}$ and $\overline{BD}$.

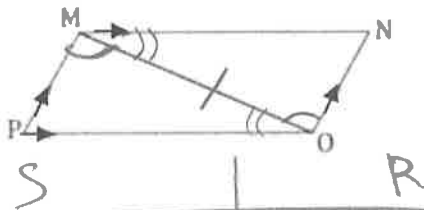
Prove: $\angle B \cong \angle D$



S	R
1. C is the midpt. of $\overline{AE}$ & $\overline{BD}$	1. Given
2. $\overline{AC} \cong \overline{CE}, \overline{BC} \cong \overline{CD}$	2. Def. of midpoint
3. $\angle BCA \cong \angle DCE$	3. Vertical Angles Thm
4. $\triangle ACB \cong \triangle ECD$	4. SAS
5. $\angle B \cong \angle D$	5. CPCTC

7. Given: $\overline{PM} \parallel \overline{NO}$, and $\overline{MN} \parallel \overline{PO}$

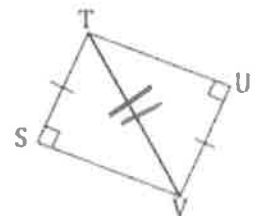
Prove: $\overline{PM} \cong \overline{NO}$



S	R
1. $\overline{PM} \parallel \overline{NO}$	1. Given
2. $\angle PMO \cong \angle NOM$	2. Alt. Int. Angles Thm.
3. $\overline{MN} \parallel \overline{PO}$	3. Given
4. $\angle NMO \cong \angle POM$	4. Alt. Int. Angles Thm
5. $\overline{MO} \cong \overline{MO}$	5. Reflexive Property
6. $\triangle PMO \cong \triangle NOM$	6. ASA
7. $\overline{PM} \cong \overline{NO}$	7. CPCTC

8. Given: $\overline{ST} \cong \overline{UV}$, $\overline{TS} \perp \overline{SV}$, and $\overline{TU} \perp \overline{UV}$

Prove: $\angle SVT \cong \angle UTV$



S	R
1. $\overline{ST} \cong \overline{UV}$	1. Given
2. $\overline{TS} \perp \overline{SV}, \overline{TU} \perp \overline{UV}$	2. Given
3. $\angle S = 90^\circ, \angle U = 90^\circ$	3. Def. of perpendicular
4. $\angle S \cong \angle U$	4. Substitution
5. $\overline{TU} \cong \overline{TU}$	5. Reflexive Property
6. $\triangle VST \cong \triangle TUV$	6. HL
7. $\angle SVT \cong \angle UTV$	7. CPCTC