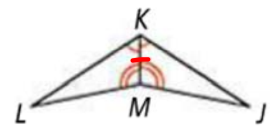
Examples from book p. 238

10. Developing Proof Complete the paragraph proof by filling in the blanks.

Given: $\angle LKM \cong \angle JKM$,
$\angle LMK \cong \angle JMK$

Prove: $\triangle LKM \cong \triangle JKM$



Proof: $\angle LKM \cong \angle JKM$ and $\angle LMK \cong \angle JMK$ are given. $\overline{KM} \cong \overline{KM}$ by the **a.** __?__ Property of Congruence. So, $\triangle LKM \cong \triangle JKM$ by **b.** __?__.

b. ASA

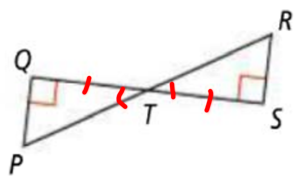
a. Reflexive

Examples from book p. 239

15. Given: $\overline{PQ} \perp \overline{QS}$, $\overline{RS} \perp \overline{SQ}$,
T is the midpoint of $\overline{PR}$

Proof

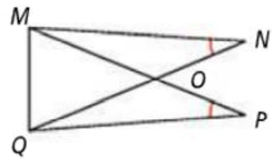
Prove: $\triangle PQT \cong \triangle RST$

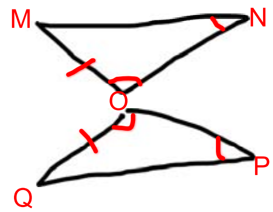


It is given that $\overline{PQ} \perp \overline{QS}$, $\overline{RS} \perp \overline{SQ}$, and T is the midpoint of $\overline{PR}$. By the definition of perpendicular lines, we know that $\angle Q$ and $\angle R$ are right angles. Since all right angles are congruent, we know that $\angle Q \cong \angle R$. By the vertical angles theorem, $\angle QTP \cong \angle STR$. By the definition of a midpoint, $\overline{QT} \cong \overline{ST}$. Therefore, $\triangle PQT \cong \triangle RST$ by ASA.

Examples from book p. 239

19. Given: $\angle N \cong \angle P, \overline{MO} \cong \overline{QO}$
Proof
Prove: $\triangle MON \cong \triangle QOP$

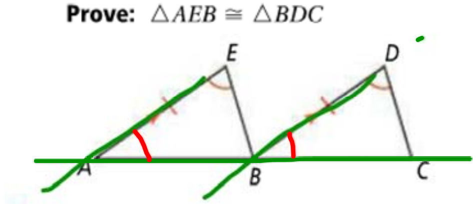




It is given that $\angle N \cong \angle P, \overline{MO} \cong \overline{QO}$. $\angle POQ \cong \angle NOM$ by the vertical angles theorem.
By AAS, $\triangle MON \cong \triangle QOP$.

Examples from book p. 240

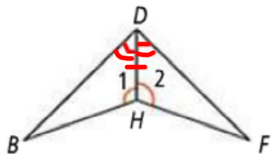
25. Given: $\overline{AE} \parallel \overline{BD}, \overline{AE} \cong \overline{BD},$
Proof
$\angle E \cong \angle D$
Prove: $\triangle AEB \cong \triangle BDC$



It is given that $\overline{AE} \parallel \overline{BD}, \overline{AE} \cong \overline{BD},$ and $\angle E \cong \angle D$.
By the corresponding angles postulate, $\angle EAB \cong \angle DBC$.
Therefore, $\triangle AEB \cong \triangle BDC$ by ASA.

Examples from book p. 240

26. Given: $\angle 1 \cong \angle 2$, and
Proof
$\overline{DH}$ bisects $\angle BDF$.
Prove: $\triangle BDH \cong \triangle FDH$



It is given that $\angle 1 \cong \angle 2$ and $\overline{DH}$ bisects $\angle BDF$. By definition of the angle bisector, $\angle BDH \cong \angle FDH$. $\overline{DH} \cong \overline{DH}$ by the reflexive property of congruency.
By ASA, $\triangle BDH \cong \triangle FDH$.