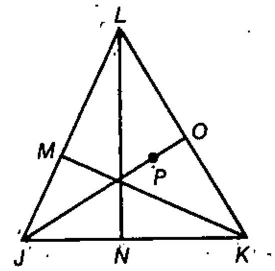
NAME ______________________ DATE ____________ SCORE ________

Practice 16

Lessons 4-6, 4-7

More about Proof in Geometry

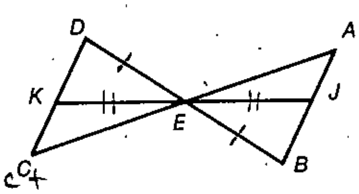
Complete.



Exs. 1–4

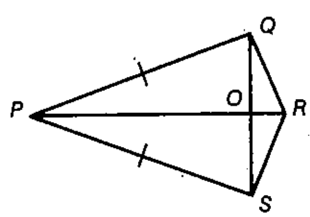
1. If $\overline{KM} \perp \overline{LJ}$, then $\overline{KM}$ is a(n) altitude of $\triangle JKL$.
2. If $LO = OK$, then $\overline{JO}$ is a(n) median of $\triangle JKL$.
3. If $\overrightarrow{LN}$ bisects $\angle JLK$, N is equidistant from $\overline{LK}$ and $\overline{LJ}$.
4. If O is the midpoint of $\overline{LK}$, and $\overline{JO} \perp \overline{LK}$, then:
   a. $\overline{JO}$ is the ⊥ bis. of $\overline{LK}$.
   b. P is equidistant from $\overline{LJ}$ and $\overline{KJ}$.

5. Given: $\overline{BD}$ and $\overline{KJ}$ bisect each other.
   Prove: $\overline{CE} \cong \overline{AE}$



1. $\overline{BD}$ + $\overline{KJ}$ bis. each other	1. Given
2. E is mdpt. of $\overline{BD}$ + $\overline{KJ}$	2. def. bisect
3. $\overline{DE} \cong \overline{EB}$; $\overline{KE} \cong \overline{EJ}$	3. def. mdpt.
4. $\angle DEK \cong \angle BEJ$	4. vert. $\angle^s \cong$
5. $\triangle DEK \cong \triangle BEJ$	5. SAS
6. $\angle D \cong \angle B$	6. CPCTC
7. $\angle DEC \cong \angle BEA$	7. Vert. $\angle^s \cong$
8. $\triangle DEC \cong \triangle BEA$	8. ASA
9. $\overline{CE} \cong \overline{AE}$	9. CPCTC

6. Given: $\overline{PQ}$ is an altitude of $\triangle PQR$;
   $\overline{PS}$ is an altitude of $\triangle PSR$;
   $\overline{PQ} \cong \overline{PS}$
   Prove: $\overline{PO}$ is a median of $\triangle PQS$.
   List the key steps of a proof.



- $\overline{PQ}$ is alt. of $\triangle PQR$
  $\overline{PS}$ is alt. of $\triangle PSR$
- $\angle PQR$ + $\angle PSR$ rt. $\angle^s$
- $\triangle PQR$ + $\triangle PSR$ Rt. $\triangle^s$
- $\overline{PR} \cong \overline{PR}$
- $\triangle PQR \cong \triangle PSR$ by HL
- $\angle QRP \cong \angle SRP$; $\overline{QR} \cong \overline{SR}$ by CPCTC
- $\overline{OR} \cong \overline{OR}$
- $\triangle QRO \cong \triangle SRO$ by SAS
- $\overline{QO} \cong \overline{SO}$ by CPCTC
- O is mdpt. of $\overline{QS}$
- $\overline{PO}$ is median of $\triangle PQS$

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