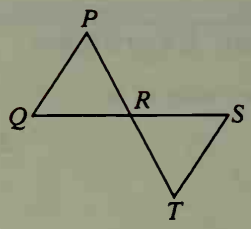
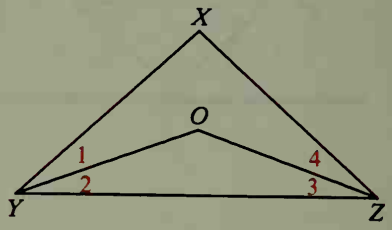
B **15.** Given: $\overline{PQ} \cong \overline{PR}$; $\overline{TR} \cong \overline{TS}$
Which one(s) of the following *must* be true?
(1) $\overline{ST} \parallel \overline{QP}$ (2) $\overline{ST} \cong \overline{QP}$ (3) $\angle T \cong \angle P$



16. Given: $\angle S \cong \angle T$; $\overline{ST} \parallel \overline{QP}$
Which one(s) of the following *must* be true?
(1) $\angle P \cong \angle Q$ (2) $PR = QR$
(3) R is the midpoint of $\overline{PT}$.

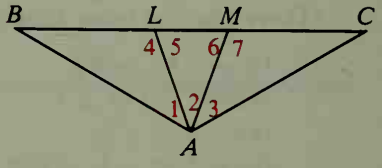
Write proofs in two-column form.

17. Given: $\overline{XY} \cong \overline{XZ}$; $\overline{OY} \cong \overline{OZ}$
Prove: $m\angle 1 = m\angle 4$



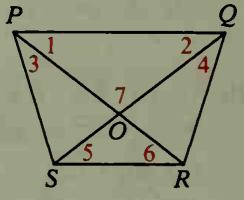
18. Given: $\overline{XY} \cong \overline{XZ}$;
$\overrightarrow{YO}$ bisects $\angle XYZ$;
$\overrightarrow{ZO}$ bisects $\angle XZY$.
Prove: $\overline{YO} \cong \overline{ZO}$

19. Given: $\overline{AB} \cong \overline{AC}$; $\overline{AL}$ and $\overline{AM}$ trisect $\angle BAC$.
(This means $\angle 1 \cong \angle 2 \cong \angle 3$.)
Prove: $\overline{AL} \cong \overline{AM}$



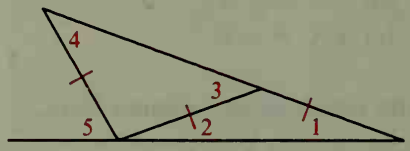
20. Given: $\angle 4 \cong \angle 7$; $\angle 1 \cong \angle 3$
Prove: $\triangle ABC$ is isosceles.

21. Given: $\overline{OP} \cong \overline{OQ}$; $\angle 3 \cong \angle 4$
Prove: $\angle 5 \cong \angle 6$

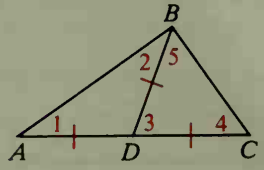


22. Given: $\overline{PO} \cong \overline{QO}$; $\overline{RO} \cong \overline{SO}$
a. If you are also given that $m\angle 1 = 40$, find the measures of $\angle 2$, $\angle 7$, $\angle 5$, and $\angle 6$. Then decide whether $\overline{PQ}$ must be parallel to $\overline{SR}$.
b. Repeat part (a), but use $m\angle 1 = k$.

23. Complete.
a. If $m\angle 1 = 20$, then $m\angle 3 =$ ___?___, $m\angle 4 =$ ___?___, and $m\angle 5 =$ ___?___.
b. If $m\angle 1 = x$, then $m\angle 3 =$ ___?___, $m\angle 4 =$ ___?___, and $m\angle 5 =$ ___?___.



24. **a.** If $m\angle 1 = 35$, find $m\angle ABC$.
b. If $m\angle 1 = k$, find $m\angle ABC$.



25. **a.** If $m\angle 1 = 23$, find $m\angle 7$.
b. If $m\angle 1 = k$, find $m\angle 7$.