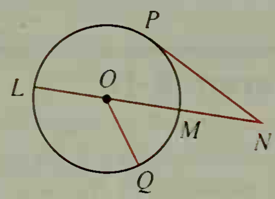
Mixed Review Exercises



1. Name a diameter of $\odot O$.
2. Name a secant of $\odot O$.
3. Name a tangent segment.
4. If $OQ = 7$, then LM = __?__.
5. If $m\overset{\frown}{MQ} = x$, express $m\overset{\frown}{QLM}$ in terms of x.
6. Find the geometric mean between 4 and 9.

9-6 *Other Angles*

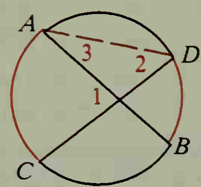
The preceding section dealt with angles that have their vertices on a circle. Theorem 9-9 deals with the angle formed by two chords that intersect inside a circle. Such an angle and its vertical angle intercept two arcs.

Theorem 9-9

The measure of an angle formed by two chords that intersect inside a circle is equal to half the sum of the measures of the intercepted arcs.

Given: Chords $\overline{AB}$ and $\overline{CD}$ intersect inside a circle.

Prove: $m\angle 1 = \frac{1}{2}(m\overset{\frown}{AC} + m\overset{\frown}{BD})$



Proof:

Statements	Reasons
1. Draw chord $\overline{AD}$.	1. Through any two points there is exactly one line.
2. $m\angle 1 = m\angle 2 + m\angle 3$	2. The measure of an exterior $\angle$ of a $\triangle$ = the sum of the measures of the two remote interior $\angle$s.
3. $m\angle 2 = \frac{1}{2}m\overset{\frown}{AC}$; $m\angle 3 = \frac{1}{2}m\overset{\frown}{BD}$	3. The measure of an inscribed angle is equal to half the measure of its intercepted arc.
4. $m\angle 1 = \frac{1}{2}m\overset{\frown}{AC} + \frac{1}{2}m\overset{\frown}{BD}$ or $m\angle 1 = \frac{1}{2}(m\overset{\frown}{AC} + m\overset{\frown}{BD})$	4. Substitution (Step 3 in Step 2)