10-3

Arcs and Chords

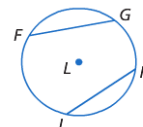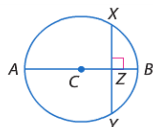## CHORD THEOREMS (FACTS)

Theorem 10.2

In the same circle or in congruent circles, two minor arcs are congruent if and only if their corresponding chords are congruent.

$\overset{\frown}{FG} \cong \overset{\frown}{HJ}$ if and only if $\overline{FG} \cong \overline{HJ}$.

10.3

If a diameter (or radius) of a circle is perpendicular to a chord, then it bisects the chord and its arc.
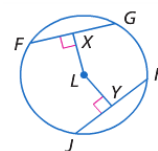
If diameter $\overline{AB}$ is perpendicular to chord $\overline{XY}$, then $\overline{XZ} \cong \overline{ZY}$ and $\overset{\frown}{XB} \cong \overset{\frown}{BY}$.
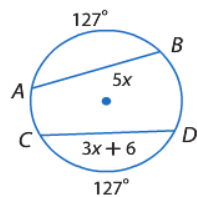

Theorem 10.5

In the same circle or in congruent circles, two chords are congruent if and only if they are equidistant from the center.

$\overline{FG} \cong \overline{JH}$ if and only if $LX = LY$.

Solve for x

127°
B
5x
A
C
3x + 6
D
127°

In ⊙P, JK = 10 and $m\widehat{JLK}$ = 134. Find each measure.

1) $m\widehat{JL}$

M
J
6
P
Q
L
K

2) PQ