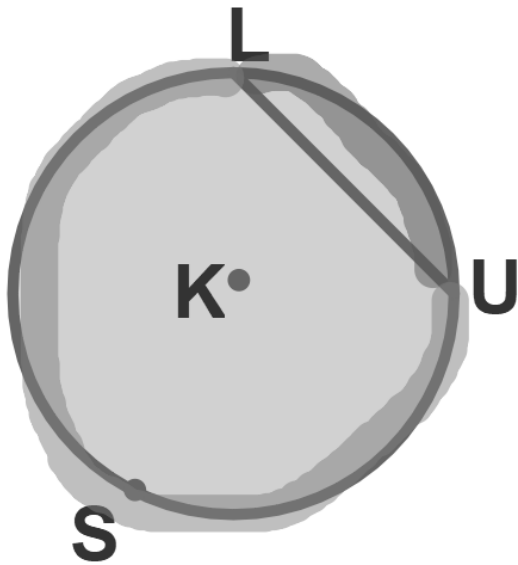


Unit 9 Lesson 3 (section 10-3) Arcs and Chords

Objectives: Recognize and use relationships between arcs, chords, and diameters.

In a circle, any chord that is not a diameter will divide the circle into a major and a minor arc.



Chord LU cuts circle K into minor arc LU and major arc USL.

Unit 9 Lesson 3 (section 10-3) Arcs and Chords

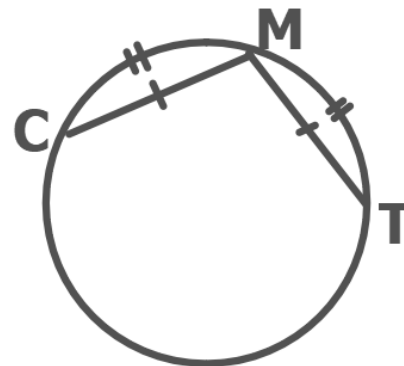
Objectives: Recognize and use relationships between arcs, chords, and diameters.

☆ In a circle, if 2 minor arcs are \cong , then the chords are \cong .
Also if 2 chords are \cong , then the minor arcs are \cong .

- 1) | **JEWELRY** A circular piece of jade is hung from a chain by two wires wrapped around the stone.

$$\overline{JM} \cong \overline{KL} \text{ and } m\widehat{KL} = 90$$

Find $m\widehat{JM}$. $= 90^\circ$

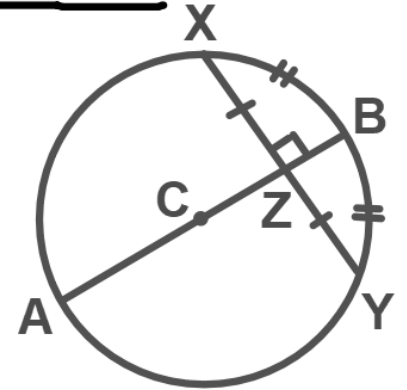


Unit 9 Lesson 3 (section 10-3) Arcs and Chords

Objectives: Recognize and use relationships between arcs, chords, and diameters.

☆ If a diameter (radius) is \perp to a chord, then it bisects the chord and its arc.

If diameter \overline{AB} is \perp to chord \overline{XY} ,
then $XZ \cong ZY$ and $\widehat{XB} \cong \widehat{BY}$.



☆ The perpendicular bisector of a chord is a diameter (radius) of the circle.

If \overline{AB} is the \perp bisector of chord \overline{XY} ,
then \overline{AB} is a diameter of circle C.



Unit 9 Lesson 3 (section 10-3) Arcs and Chords

Objectives: Recognize and use relationships between arcs, chords, and diameters.

2) $m\widehat{HL} = 53$, find $m\widehat{MK} = \boxed{127^\circ}$

3) Find $JL = \boxed{4}$

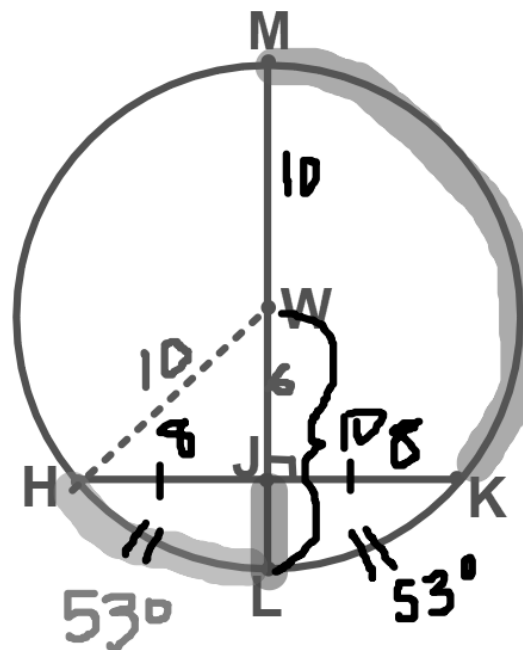
$10 - 6 = 4$

$8^2 + w^2 = 10^2$
 $64 + w^2 = 100$

$w^2 = 36$

$w = \pm\sqrt{36}$

$w = 6$



$\odot O$ $r = 10\text{cm}$

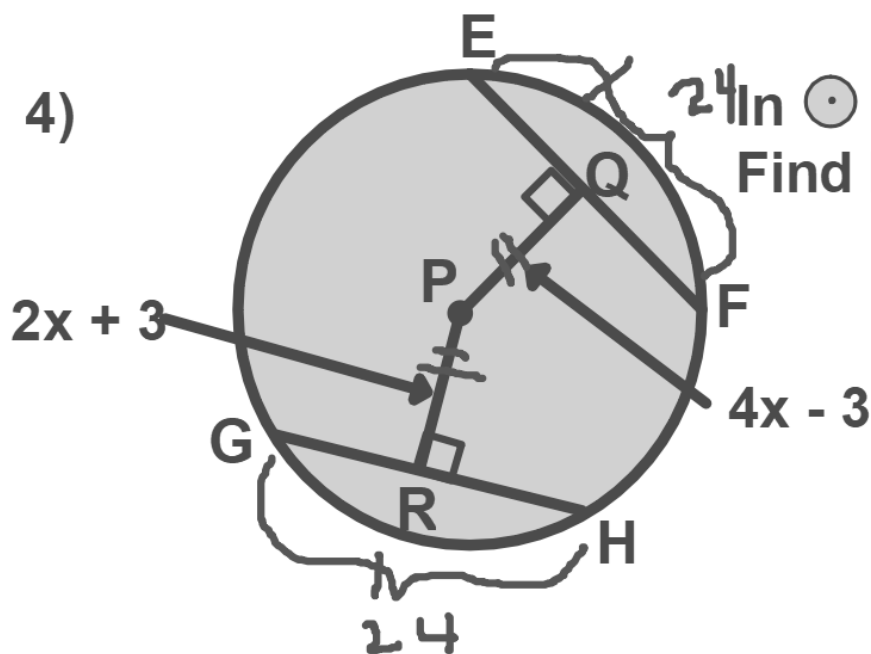
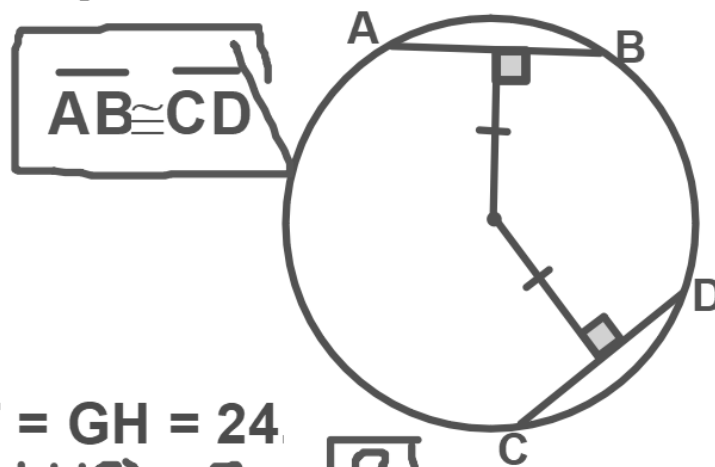
$HK = 16\text{cm}$



Unit 9 Lesson 3 (section 10-3) Arcs and Chords

Objectives: Recognize and use relationships between arcs, chords, and diameters.

- ★ Two chords that are equidistant from the center are \cong .
 If 2 chords are \cong , then they are equidistant from the center.



In $\odot P$, $EF = GH = 24$.

Find $PQ = 4(3) - 3 = 9$

$$2x + 3 = 4x - 3$$

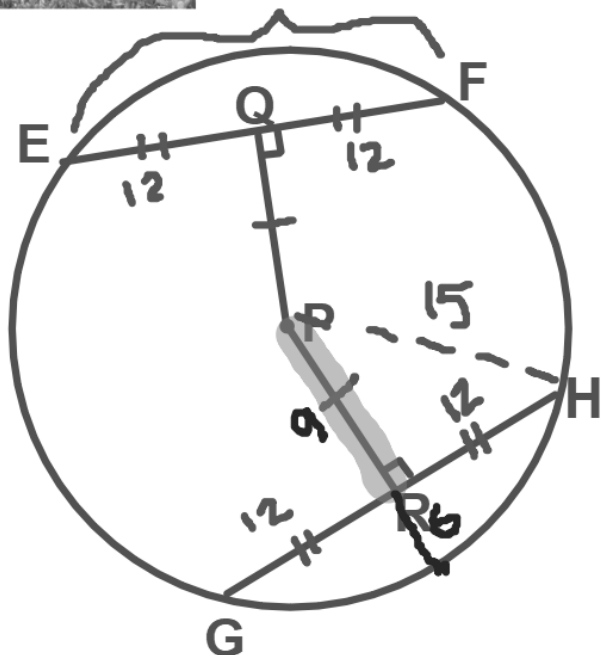
$$3 = 2x - 3$$

$$6 = 2x$$

$$3 = x$$

Unit 9 Lesson 3 (section 10-3) Arcs and Chords

Objectives: Recognize and use relationships between arcs, chords, and diameters.



\overline{EF} and \overline{GH} are equidistant from the center. $r=15$ and $EF=24$

5. Find $RH. = 12$

6. Find $PR. = 9$

7. Find $GH. = 24$

8. Find $EQ. = 12$

$$\begin{aligned} PR^2 + 12^2 &= 15^2 \\ PR^2 + 144 &= 225 \\ PR^2 &= 81 \\ PR &= \sqrt{81} \\ &= 9 \end{aligned}$$