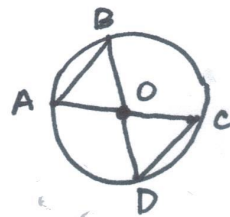


Chords and Arcs (Section 12-4)

* If $\angle AOB \cong \angle COD$, then $\widehat{AB} \cong \widehat{CD}$.

If $\widehat{AB} \cong \widehat{CD}$, then $\angle AOB \cong \angle COD$ (converse)



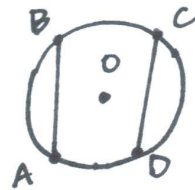
* If $\angle AOB \cong \angle COD$, then $\overline{AB} \cong \overline{CD}$

If $\overline{AB} \cong \overline{CD}$, then $\angle AOB \cong \angle COD$ (converse)

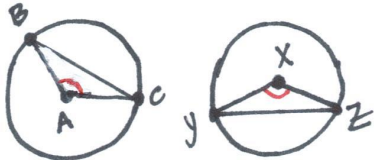


* If $\overline{AB} \cong \overline{CD}$, then $\widehat{AB} \cong \widehat{CD}$.

If $\widehat{AB} \cong \widehat{CD}$, then $\overline{AB} \cong \overline{CD}$ (converse)



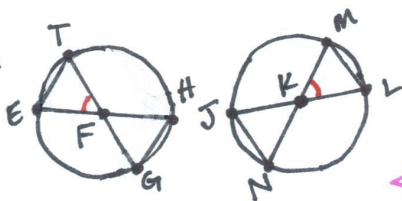
#1
ex:



If the circles are \cong ,
what can you conclude?

$\widehat{BC} \cong \widehat{YZ}$, $\overline{BC} \cong \overline{YZ}$

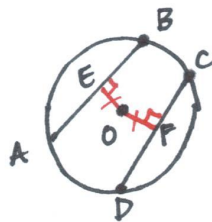
#2
ex:



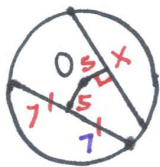
$\widehat{ET} \cong \widehat{GH} \cong \widehat{JN} \cong \widehat{ML}$
 $\overline{ET} \cong \overline{GH} \cong \overline{JN} \cong \overline{ML}$
 $\angle TFE \cong \angle HFG \cong \angle JKN \cong \angle MKL$

* If $\overline{OE} = \overline{OF}$, then $\overline{AB} \cong \overline{CD}$

If $\overline{AB} \cong \overline{CD}$, then $\overline{OE} = \overline{OF}$ (converse)



#3
ex:

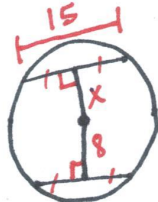


$$X = 7 + 7$$

$$X = 14$$

chords from center are
 \cong so the segments are \cong

#4
ex:



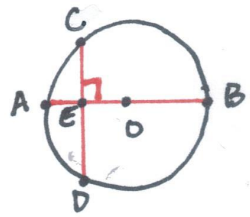
$$X = 8$$

Since the segments are \cong ,
then the chords from center
are \cong .

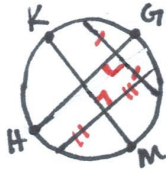
* If \overline{AB} is a diameter $\nmid \overline{AB} \perp \overline{CD}$, then $\overline{CE} \cong \overline{ED} \nmid \widehat{CA} \cong \widehat{AD}$

* If \overline{AB} is a diameter $\nmid \overline{CE} \cong \overline{ED}$, then $\overline{AB} \perp \overline{CD}$.

* If \overline{AB} is \perp bisector of \overline{CD} , then \overline{AB} contains the center of circle O .



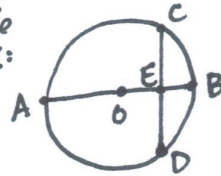
#5
ex:



$\overline{GH} \nmid \overline{KM}$ are \perp bisector of the chords. they intersect. What can you conclude about the center?

The center is at the intersection of $\overline{GH} \nmid \overline{KM}$. Because if a chord is \perp bis. of another chord, then it is a diameter. Two diameters intersect at center.

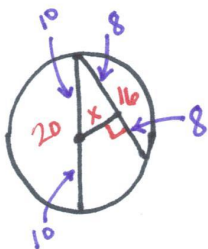
#6
ex:



\overline{AB} is the diameter $\nmid \overline{AB} \perp \overline{CD}$. What conclusion can you make?

$$\overline{CE} \cong \overline{ED}, \widehat{BC} \cong \widehat{BD}$$

#7
ex:

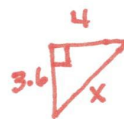


$$x^2 + 8^2 = 10^2$$

$$x^2 = 36$$

$$x = 6$$

#8
ex:



$$(3.6)^2 + 4^2 = x^2$$

$$28.96 = x^2$$

$$x = 5.38$$