

Geometry
Arcs and Chords

Name: _____

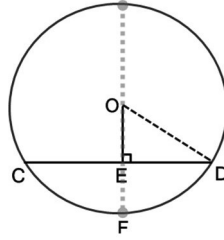
Date: _____

In a circle, if a _____ is perpendicular to a _____, then it _____ the chord and its arc.

$$m\widehat{CF} \cong m\widehat{FD}$$

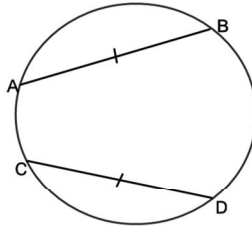
and

$$\overline{CE} \cong \overline{ED}$$



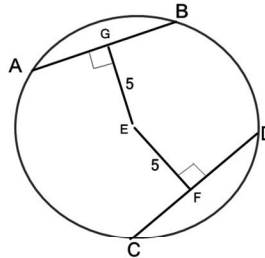
In a circle or in congruent circles, _____ are congruent if and only if their _____ are congruent.

Given $\overline{AB} \cong \overline{CD}$
then $\widehat{AB} \cong \widehat{CD}$



In a circle or in congruent circles, _____ are congruent if and only if they are _____.

Since $EG = EF$,
then $\overline{AB} \cong \overline{CD}$
and $\widehat{AB} \cong \widehat{CD}$



Examples

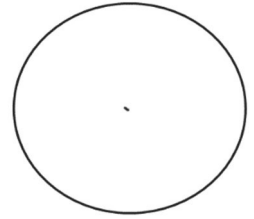
1. $\widehat{NP} =$ _____

2. $KM =$ _____

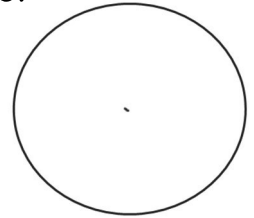
3. $XY =$ _____

4. $m\widehat{BC} =$ _____

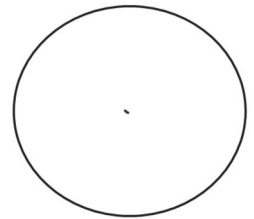
5. Suppose a chord is 20 inches long and is 24 inches from the center of the circle. Find the length of the radius.



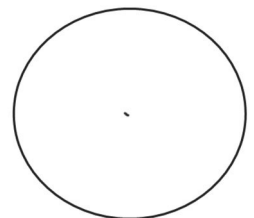
6. Suppose the diameter of a circle is 30 centimeters long and a chord is 24 centimeters long. Find the distance between the chord and the center of the circle.



7. Find the length of a chord that is 5 inches from the center of a circle with a radius of 13 inches.



8. Suppose a radius of a circle is 17 units and a chord is 30 units long. Find the distance from the center of the circle to the chord.



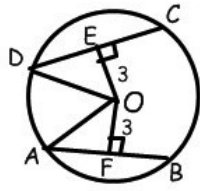
Geometry
Homework: Arcs and Chords

Name: _____

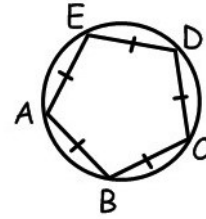
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Find the indicated value.

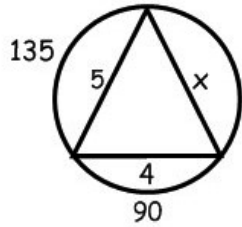
1. $AB = 8$
 $DE = \underline{\hspace{1cm}}$, $AO = \underline{\hspace{1cm}}$



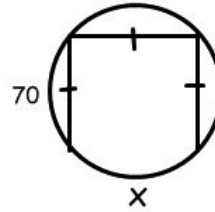
2. $m\widehat{BC} = \underline{\hspace{1cm}}$



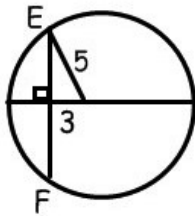
3. $x = \underline{\hspace{1cm}}$



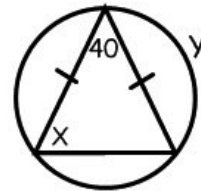
4. $x = \underline{\hspace{1cm}}$



5. $EF = \underline{\hspace{1cm}}$



6. $x = \underline{\hspace{1cm}}$, $y = \underline{\hspace{1cm}}$



7. A chord is 7cm from the center. The diameter is 50 cm. Find the length of the chord.

8. A 12 cm chord is 8 cm from the center. Find the length of the radius of the circle.

9. A chord of a circle is 5 in. from the center and is 24 in. long. Find the length of the radius.

10. A chord is 16 in. long and is 6 in. from the center. Find the length of the radius.