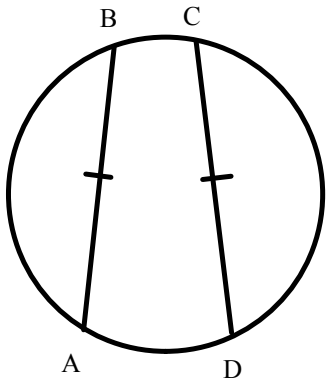
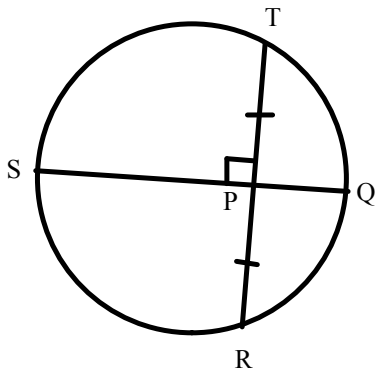
Section 10.3 Apply Properties of Chords

Theorem 10.3 : In the same circle, or in congruent circles, two minor arcs are congruent if and only if their corresponding chords are congruent.



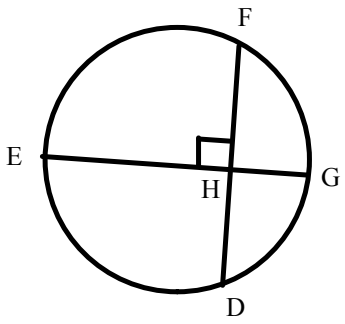
Theorem 10.4 : If one chord is a perpendicular bisector of another chord then the first chord is a diameter.

If $\overline{QS}$ is a perpendicular bisector of $\overline{TR}$, then $\overline{QS}$ is a diameter of the circle.

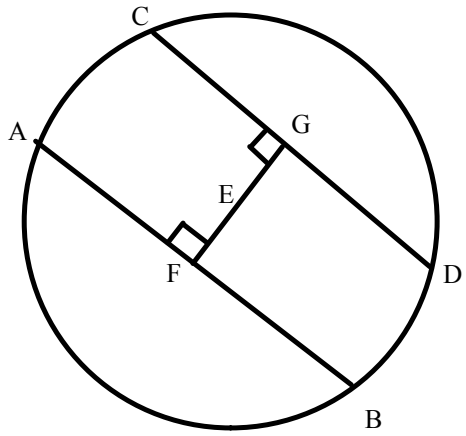


Theorem 10.5 : If a diameter of a circle is perpendicular to a chord, then the diameter bisects the chord and its arc.

If $\overline{EG}$ is a diameter and $\overline{ED} \perp \overline{DF}$, then $\overline{HD} \cong \overline{HF}$ and $GD \cong GF$.

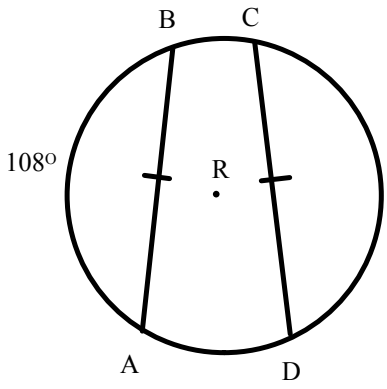


Theorem 10.6 : In the same circle, or in congruent cirlces, two chords are congruent if and only if they are equidistant from the center.

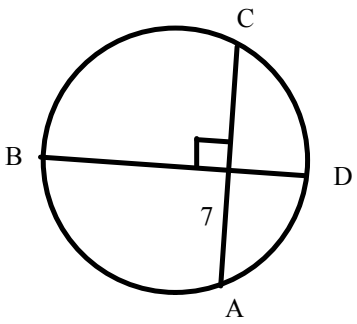


Example 1: If $\odot$R, $\overline{AB} \cong \overline{CD}$ and mAB=108^o.

Find mCD.

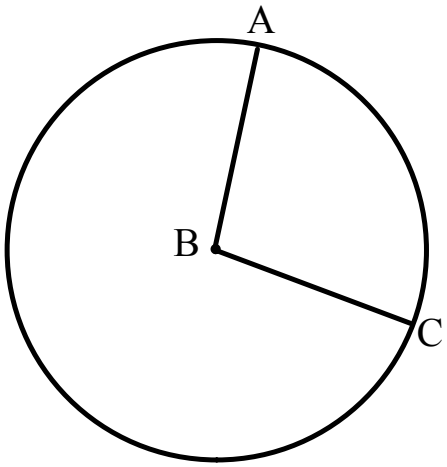


Example 2: Use the diagram of ⊙E to find the length of AC.

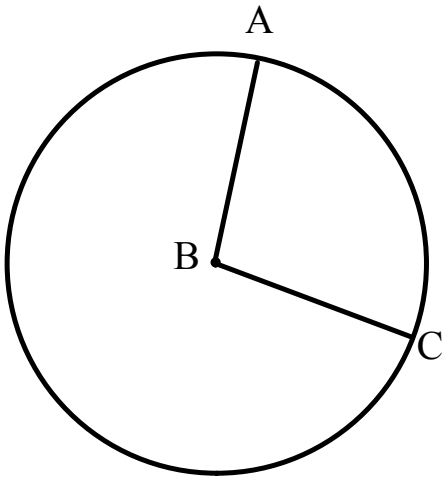


Area of a sector of a circle

Take the angle measure and divide it by 360. Keep it as a fraction.
Then multiply it by the area of the circle to get your final answer.



Arc length:



Find the area of the sector, and the arc length