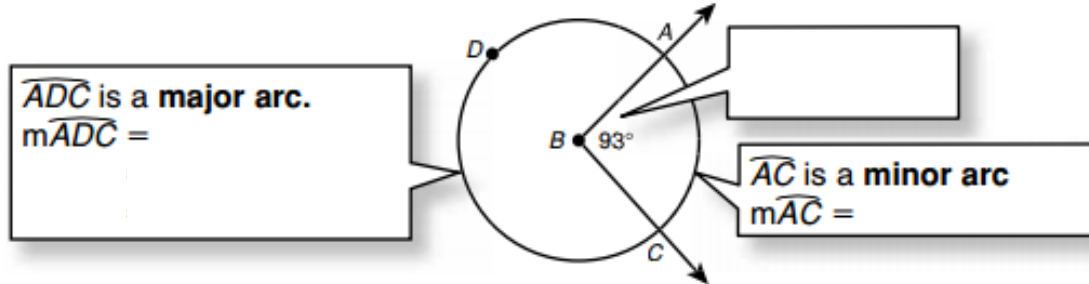




- I can identify minor and major arcs.
- I can use angle measures to find arc measures.

Arcs and Their Measure

- A **central angle** is
- An **arc** is an unbroken part of a circle consisting of two points on a circle and all the points on the circle between them.

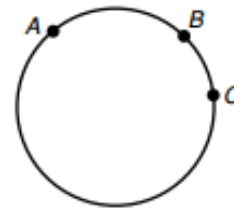


- If the endpoints of an arc lie on a diameter, the arc is a _____ and its measure is _____.

Arc Addition Postulate

The measure of an arc formed by two adjacent arcs is the sum of the measures of the two arcs.

$m\widehat{ABC} =$ _____

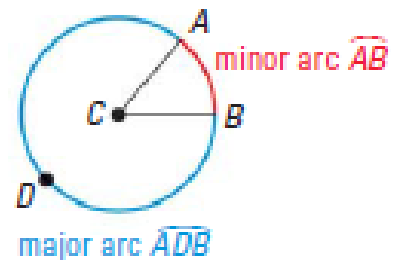


Naming Arcs

Minor arcs are named by their endpoints like this:

- \widehat{AB} is a minor arc associated with $\angle ACB$.

Major arcs and semicircles are named by their endpoints and a point on the arc. For example, _____ is the major arc associated with $\angle ACB$.

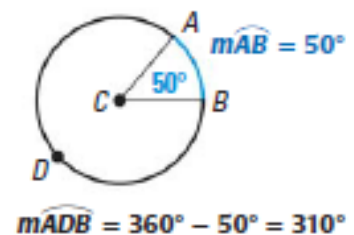


Measuring Arcs

The measure of a minor arc is the measure of its central angle. The expression $m\widehat{AB}$ is read as *the measure of arc AB*.

An entire circle has 360° . The measure of a major arc is the difference between 360° and the measure of the related minor arc.

The measure of a semicircle is 180° .



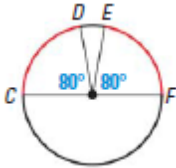
Example 1: Identify congruent arcs

Remember that two circles are congruent if they have the same radius. When two circles are congruent we can write $\odot L \cong \odot F$.

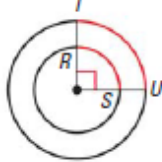
Two arcs are congruent if they have the same measure **AND** they are arcs of the same circle or congruent circles.

Tell whether the given arcs are congruent. Explain why or why not.

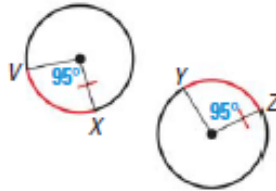
a. \widehat{CD} and \widehat{EF}



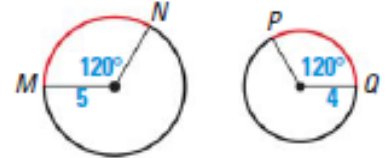
b. \widehat{TU} and \widehat{RS}



c. \widehat{VX} and \widehat{YZ}



d. \widehat{MN} and \widehat{PQ}



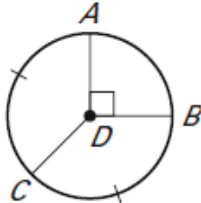
Example 2: Finding measures of arcs

a) Two diameters of $\odot T$ are \overline{PQ} and \overline{RS} . Find the given arc measure if $m\widehat{PR} = 35^\circ$.

$m\widehat{PS} = \underline{\hspace{2cm}}$ $m\widehat{SR} = \underline{\hspace{2cm}}$

$m\widehat{PRQ} = \underline{\hspace{2cm}}$ $m\widehat{PRS} = \underline{\hspace{2cm}}$

b) Find $m\widehat{AC}$



c) \overline{AC} and \overline{BE} are diameters of $\odot F$. Identify the arc as a major arc, minor arc, or semicircle, and find the measure of the arc.

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

$m\widehat{DC} = \underline{\hspace{2cm}}$

$m\widehat{DB} = \underline{\hspace{2cm}}$

$m\widehat{AE} = \underline{\hspace{2cm}}$

$m\widehat{AD} = \underline{\hspace{2cm}}$

$m\widehat{ABC} = \underline{\hspace{2cm}}$

$m\widehat{ACD} = \underline{\hspace{2cm}}$

$m\widehat{EAC} = \underline{\hspace{2cm}}$

