

Central Angles and Arcs

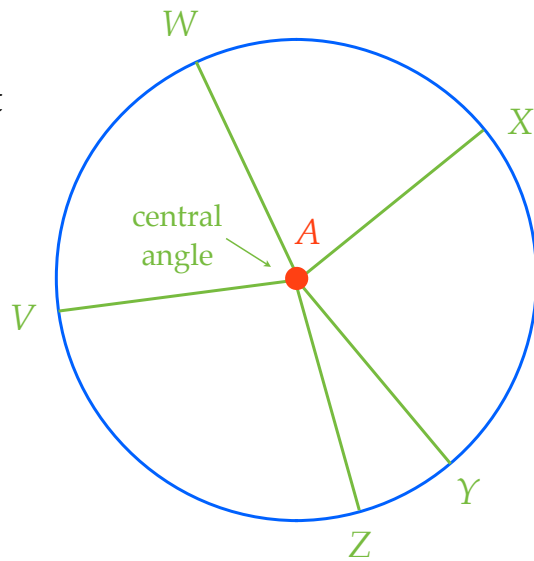
Central Angle

A **central angle** is an angle whose **vertex** is at the **center** of the **circle**.

$\angle VAW$ is a central angle.

Sum of Central Angles

The sum of all **central angles** within a **circle** is 360° .



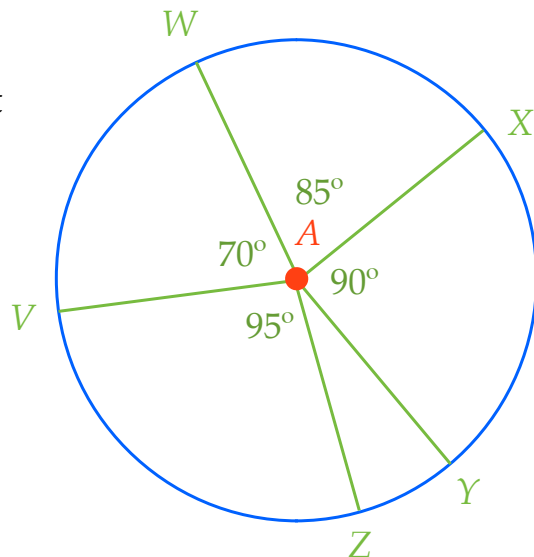
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Arc

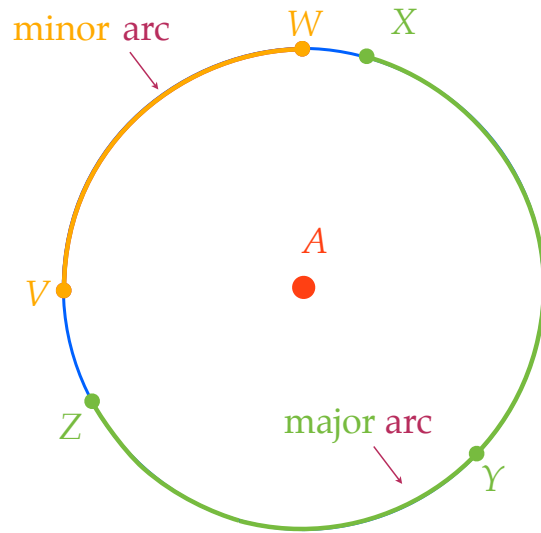
An **arc** is an unbroken piece of a **circle**.

A **minor arc** is an **arc** that is less than a **semicircle**.

\widehat{VW} is a **minor arc**.

A **major arc** is an **arc** that is greater than a **semicircle**.

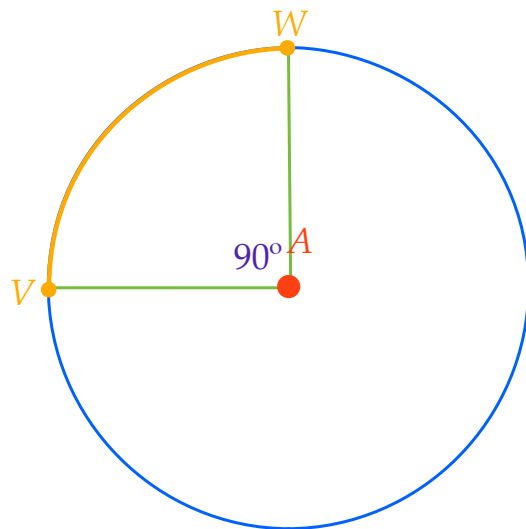
\widehat{XYZ} is a **major arc**.



The Measure of an Arc

The **measure** of an **arc** is equal to the measure of its **central angle**.

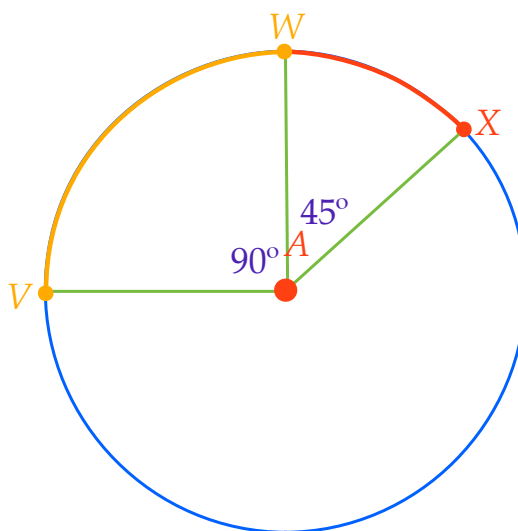
$$m\angle VAW = m\widehat{VW}$$



Arc Addition Postulate

The **measure** of two adjacent **arcs** is the sum of the **measures** of the two **arcs**.

$$m\widehat{VW} + m\widehat{WX} = m\widehat{VWX}$$



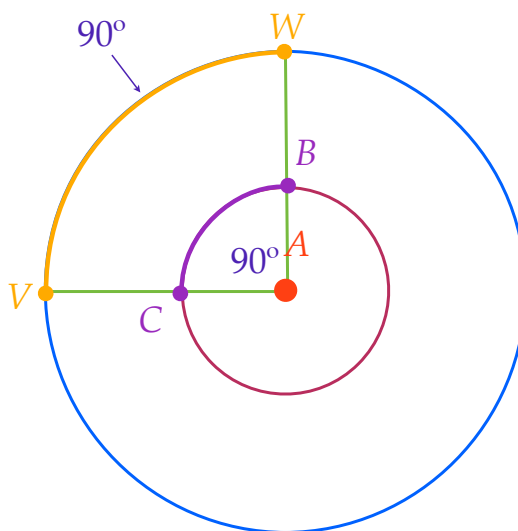
Arc Length

The **arc length** is the linear distance around the **circle** of the **arc**.

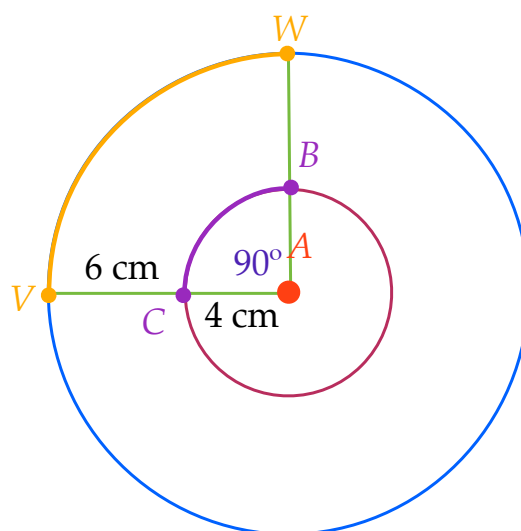
$$m\widehat{VW} = m\widehat{CB}$$

length of $\widehat{VW} \neq$ length of \widehat{CB}

$$\text{Arc Length} = \frac{m\widehat{Arc}}{360^\circ} (2\pi r)$$



Find the arc length of \widehat{CB} and \widehat{VW}



$$\text{Arc Length} = \frac{m\widehat{Arc}}{360^\circ} (2\pi r)$$