Name _____

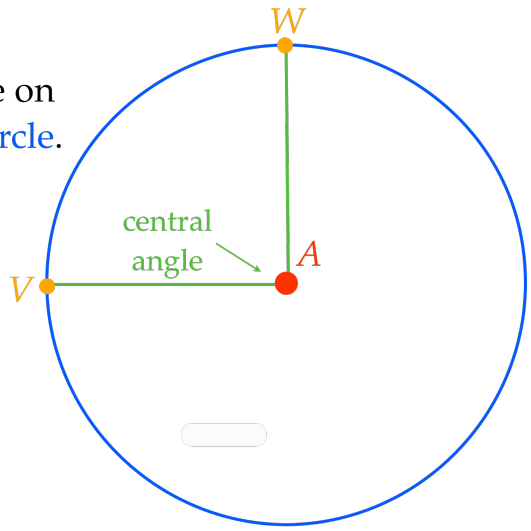
Arc Lengths and Central Angles of Circle

Date _____ Period _____

Central Angle

A central angle is an angle whose endpoint are on the circle and its vertex is at the center of the circle.

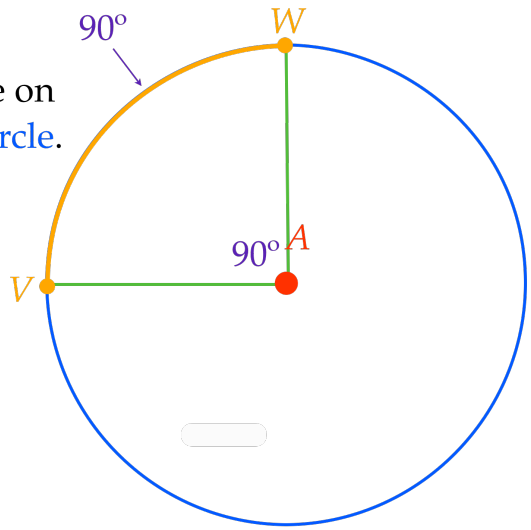
$\angle VAW$ is a central angle.



Central Angle

A central angle is an angle whose endpoint are on the circle and its vertex is at the center of the circle.

$\angle VAW$ is a central angle.



The Measure of an Arc

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

$$m\angle VAW = m\overset{\frown}{VW}$$

$$m\angle VAW = 90°$$

$$m\overset{\frown}{VW} = 90°$$

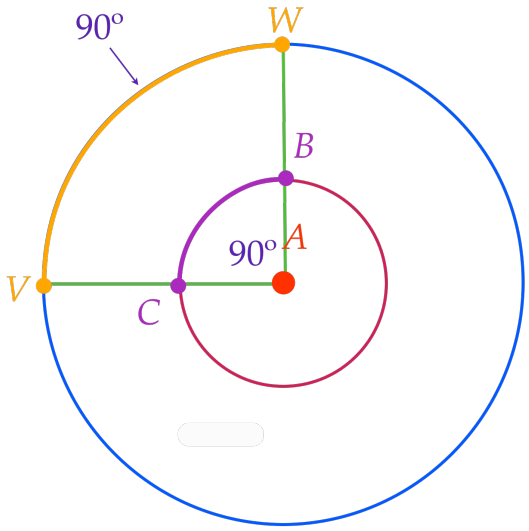
Arc Length

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

$$m\overset{\frown}{VW} = m\overset{\frown}{CB}$$

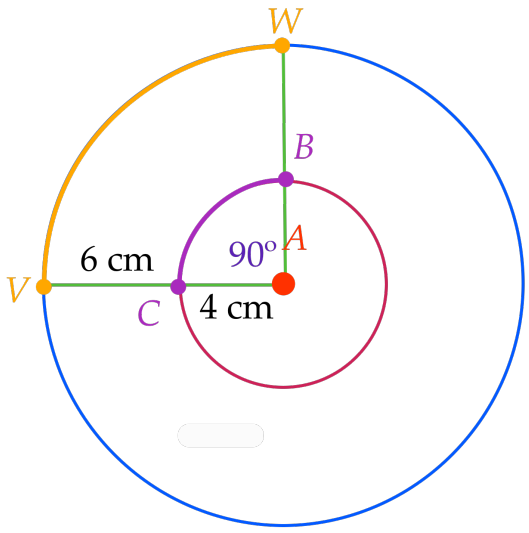
$$\overset{\frown}{VW} \neq \overset{\frown}{CB}$$

$$\text{Arc Length} = \frac{m\overset{\frown}{Arc}}{360^\circ} \cdot (\text{Circumference}) \qquad \text{Circumference} = 2\pi \cdot r$$

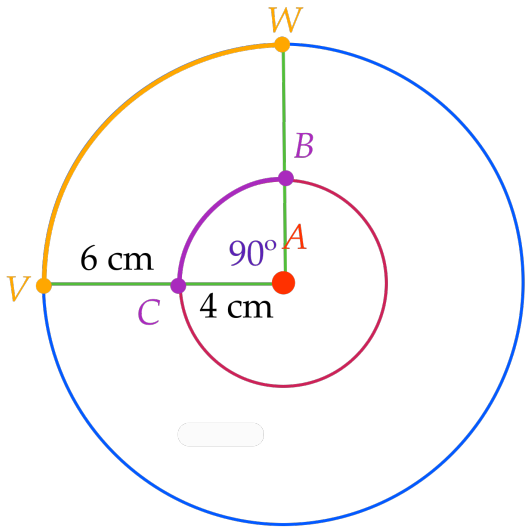


Find the arc length of $\overset{\frown}{CB}$ and $\overset{\frown}{VW}$

$$\text{Arc Length} = \frac{m\overset{\frown}{Arc}}{360^\circ} \cdot (\text{Circumference}) \qquad \text{Circumference} = 2\pi \cdot r$$



Find the arc length of $\overset{\frown}{CB}$ and $\overset{\frown}{VW}$



$$\text{Arc Length} = \frac{m\overset{\frown}{Arc}}{360^\circ} \cdot (\text{Circumference}) \qquad \text{Circumference} = 2\pi \cdot r$$