Warm-Up

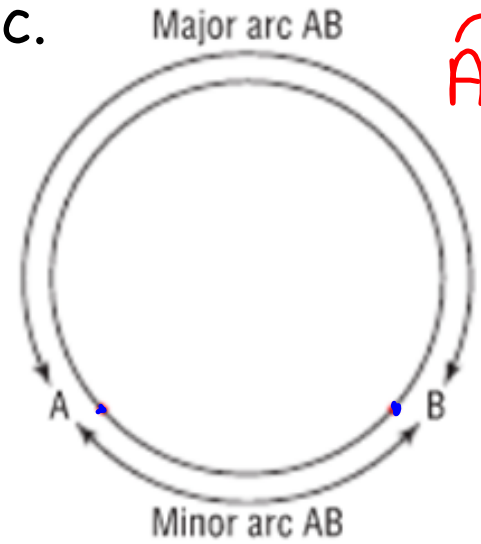
Open book assignment.

Remember name all angles with 3 Letters

Section 8.3 Angle Properties in a Circle

Terms/Properties to know:

1. **Arc**- a section of the circumference of a circle is an arc.

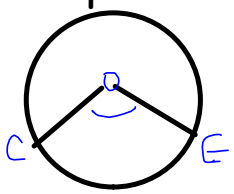


arc AB

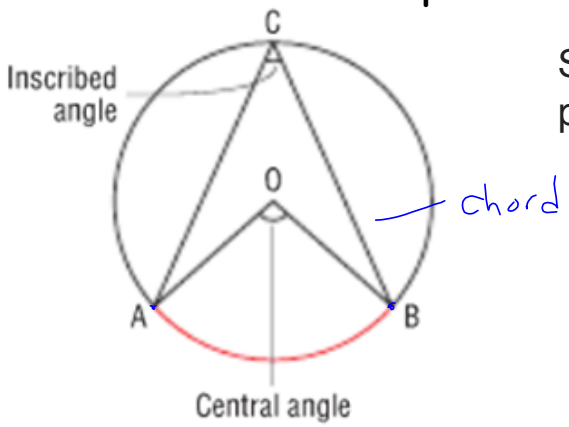
$\overset{\frown}{AB}$

2. Central Angle -- the angle formed by joining the endpoints of an arc to the center of the circle

[Two radii form the central angle]



3. Inscribed Angle --The angle formed by joining the endpoints of an arc to a point on the circle



Subtended---is one whose two rays pass through the endpoints of the arc

Comes from the smaller arc

[coming from]

The inscribed and central angles are subtended by arc AB

Name central angle $\angle AOB$

Name inscribed angle $\angle ACB$

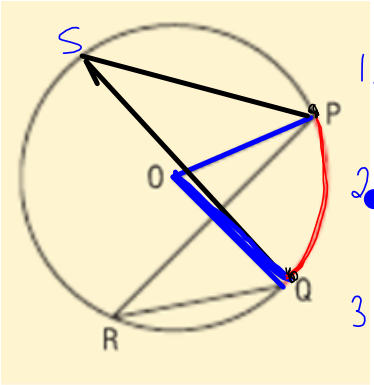
Angle Properties of a Circle

1. Central Angle and Inscribed Angle Property

[coming from]

In a circle, the measure of a central angle subtended by an arc is twice the measure of the inscribed angle subtended [coming from] by the same arc.

<POQ = 2 times <PRQ



1. What is the arc?
QP
2. Name central angle?
∠POQ
3. Name inscribed angles?
∠QRP ∠QSP

THIS IS TRUE FOR ANY INSCRIBED ANGLE

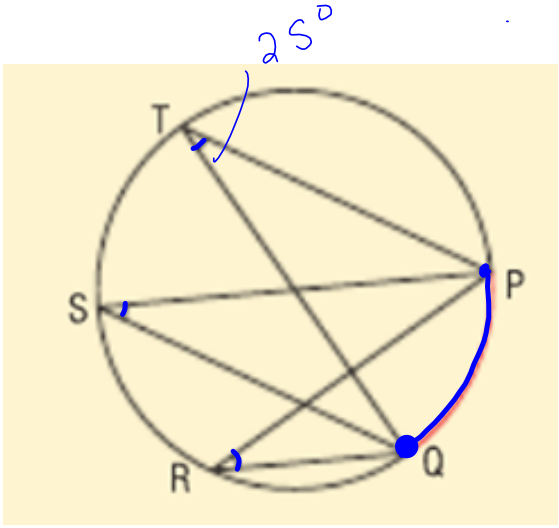
[The inscribed angle is half the size of the central angle]

2. Inscribed Angles Property

In a circle, all of the inscribed angles subtended by the same arc are congruent [equal]

$\angle PTQ = \angle PSQ = \angle PRQ$

$25^\circ = 25^\circ = 25^\circ$



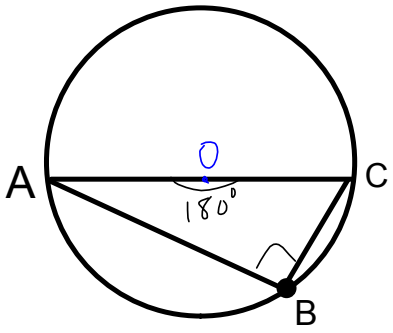
$\angle PDQ$

3. ANGLES IN A SEMI-CIRCLE PROPERTY

*The two arcs formed by the endpoints of a diameter are semicircles.

*The central angle is a straight angle which is 180°

*The inscribed angle subtended by semicircle is one-half 180°



1) Name the straight angle $\angle AOC$

2) Identify the arc for the straight angle. $\overset{\frown}{AC}$

3) Name the angle **subtended** by the arc.

$\angle ABC$