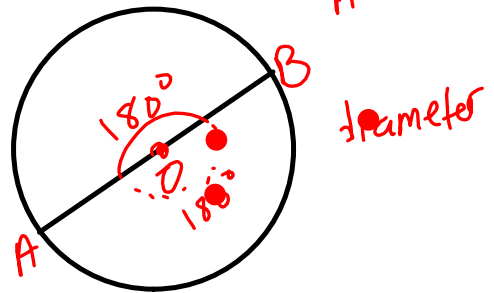
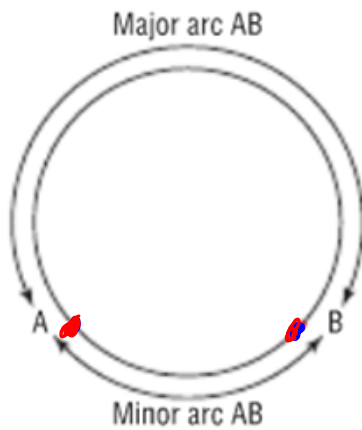


Terms/Properties to know:

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

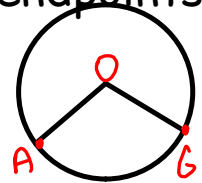
[distance around outside]

equal distance either way A • B

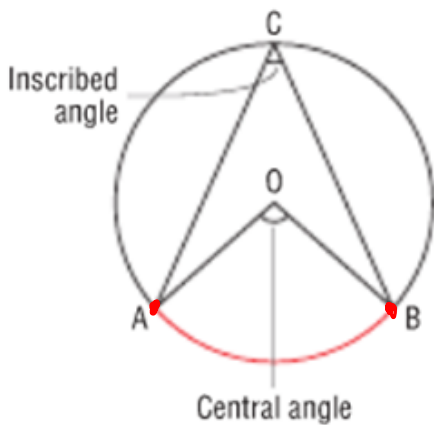


Central Angle-- the angle formed by joining the endpoints of an arc to the center of the circle $\angle AOG$

[Two radii form the central angle]



Inscribed Angle-- The angle formed by joining the endpoints of an arc to a point on the circle [circumference]



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 $\angle ACB$

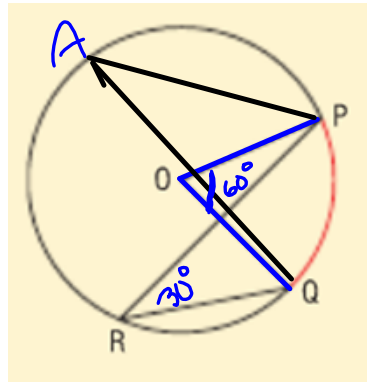
1. Central Angle and Inscribed Angle Property

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

$$\angle POQ = 2 \text{ times } \angle PRQ$$

60°

$\angle PAQ = 30^\circ$



What is the arc?

QP
PQ

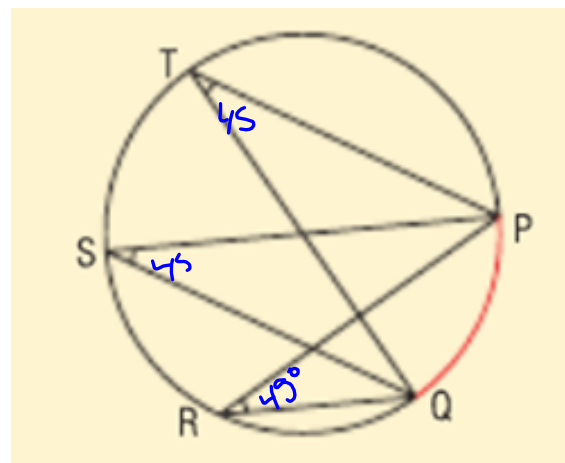
THIS IS TRUE FOR ANY INSCRIBED ANGLE

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

2. Inscribed Angles Property

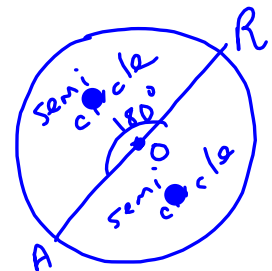
In a circle, all of the inscribed angles subtended by the same arc are congruent [equal]

$$\angle \underline{PTQ} = \angle \underline{PSQ} = \angle \underline{PRQ}$$



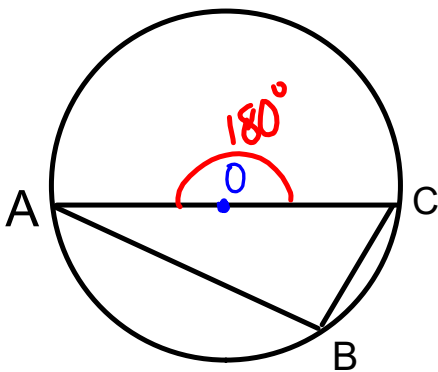
3. ANGLES IN A SEMI-CIRCLE PROPERTY

*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 $180^\circ = 90^\circ$



1) Name the straight angle

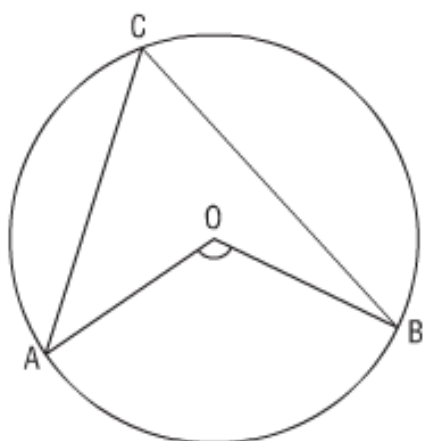
$\angle AOC = 180^\circ$

2) Identify the arc. AC

3) Name the angle subtended by the arc.

$\angle ABC = 90^\circ$

Properties of *Angles* in a Circle



1) Name 2 chords

BC, CA

2) Name 2 angles

$\angle AOB \leftarrow$ central angle

$\angle ACB \leftarrow$ inscribed angle

3) Name 2 radii

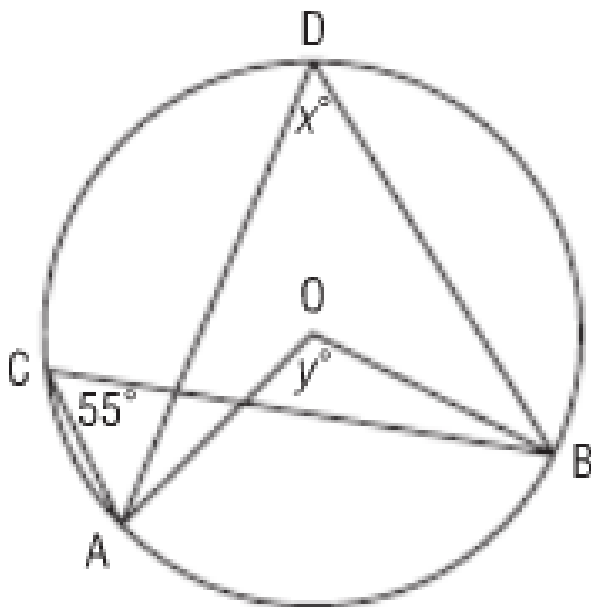
AO
BO

4) Name 2 arcs

AB CB
AC

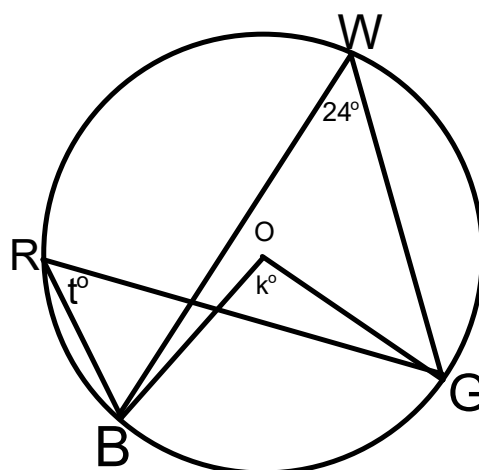
Point O is the centre of a circle.

Determine the values of x° and y° .



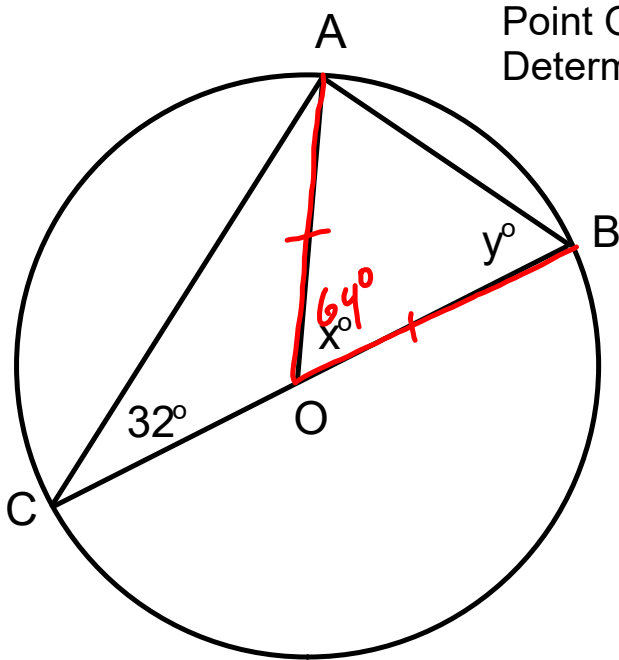
Angle(s) KNOW	Angle(s) Need
$\angle \underline{ACB} = 55^\circ$	$\angle \underline{ADB} = 55^\circ$
	$\angle \underline{AOB} = 110^\circ$

Point O is the center of a circle.
Determine the values of k° and t° .



What circle properties were used.

Know	Need
$\angle \underline{GWB} = 24^\circ$	$\angle \underline{BOG} = 48^\circ$
	$\angle \underline{BRG} = 24^\circ$



Point O is the center of the circle.
Determine the value of x° and y° .

Know	Need
$\angle ACB = 32^\circ$	$\angle AOB = 64^\circ$
	$\angle ABC = 58^\circ$

