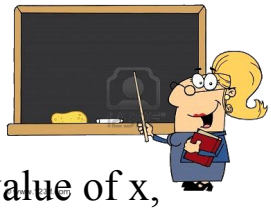
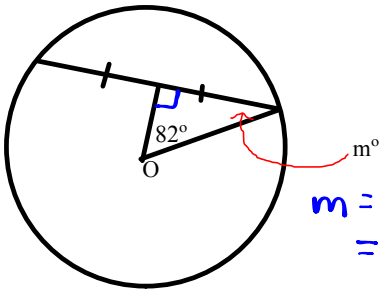
Warm Up
May 16, 2017

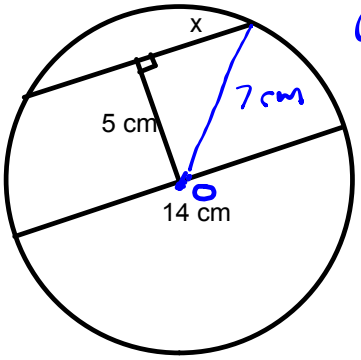


Determine the value of m, when O is the centre



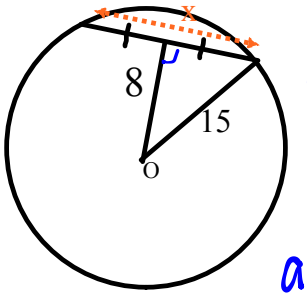
$m = 180 - 90 - 82$
$= 8°$

Solve for x



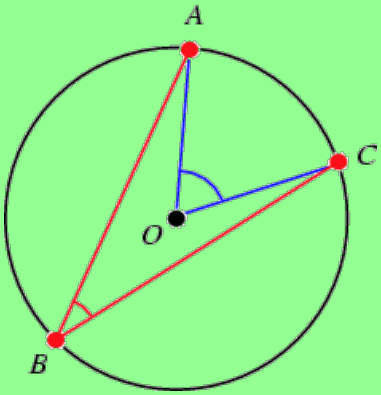
$a^2 = c^2 - b^2$
$x^2 = 7^2 - 5^2$
$= 49 - 25$
$= 24$
$x = \sqrt{24}$
$= 4.9\text{cm}$

Determine the value of x, when O is the centre



$a^2 = c^2 - b^2$
$= 15^2 - 8^2$
$= 225 - 64$
$= 161$
$a = \sqrt{161}$
$= 12.7$

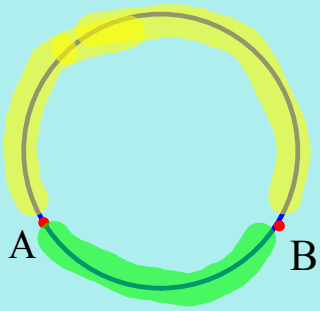
$x = 2(12.7)$
$= 25.4$



Section 8.3

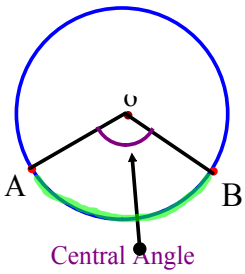
Properties of Angles in Circles

- The longer arc AB is the major arc .
- The shorter arc AB is the minor arc.



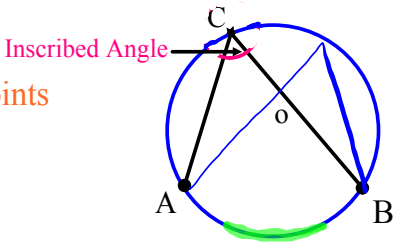
Central Angle:

The angle formed by joinging the endpoints of a arc to the centre of a circle (involves radii)



Inscribed Angle:

The angle formed by joinging the endpoints of a arc to a point on the circle

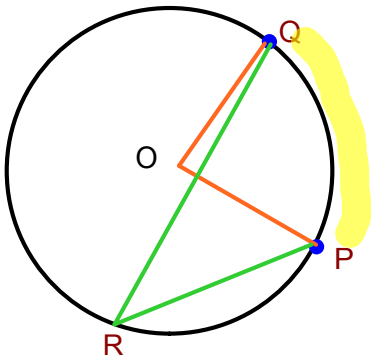


Inscribed and central angles are SUBTENDED by the MINOR arc

come from the same 'smaller arc'

Central Angle & Inscribed Angle Property

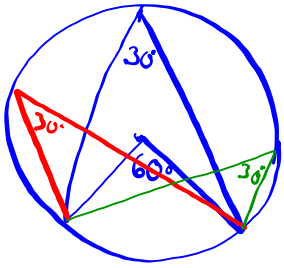
In a circle, the measure of a central angle subtended by an arc is TWICE the measure of an inscribe angle subtended by the same arc.



$\angle POQ = 2\angle PRQ$ Central angle is twice the inscribed angle

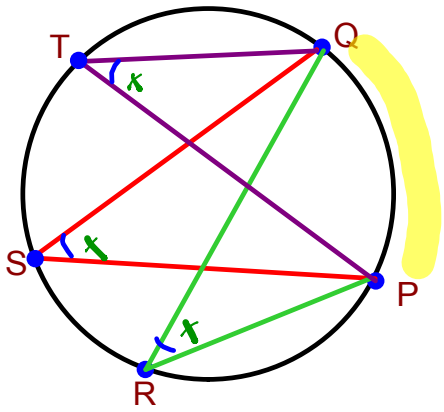
or

$\angle PRQ = \frac{1}{2}\angle POQ$ Inscribed angle is half the center angle



Inscribed Angle Property

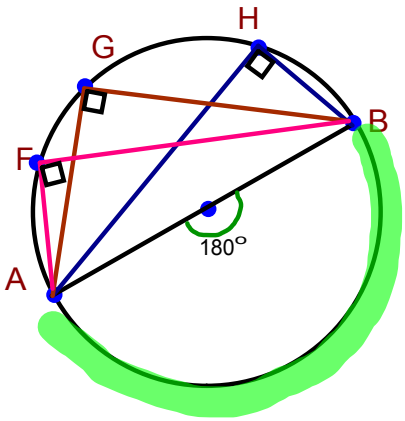
In a circle, all inscribed angles subtended by the same arc are congruent.



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

Angles is a Semicircle Property

All inscribed angles subtended by a semicircle are right angles



Makes sense

Inscribed angles are always half the centre

Center Angle = 180° (Straight Line)

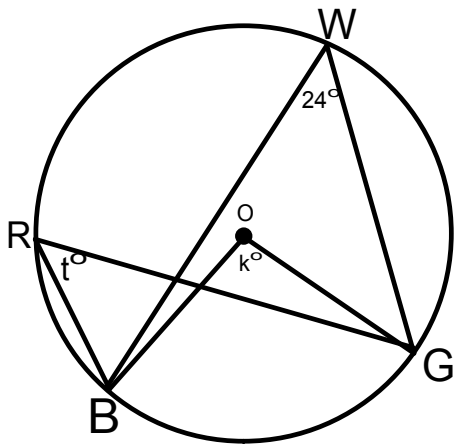
Inscribed angle is half the Central Angle

Inscribed = (1/2) central
=(1/2) 180°
= 90°

Example 1
Using Inscribe and Central Angles

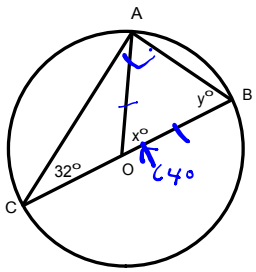
Point O is the center of a circle.
Determine the values of k° and t°.

$k = 2(24)$
$= 48°$
$t = 24°$



Example 2

Applying the Property of an Angle Inscribed in a Semicircle



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

For Y°

$y = \frac{180-64}{2}$ isosceles triangle

$= 58°$

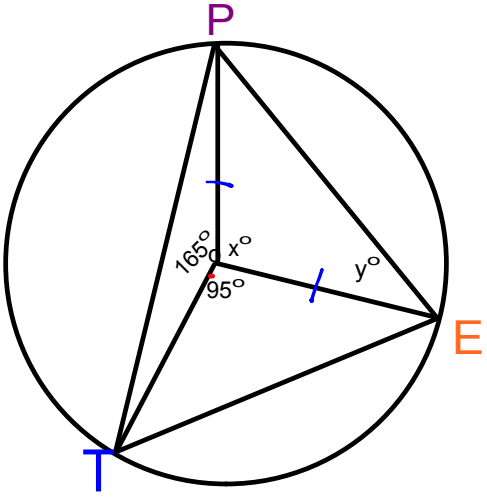
For X°

$x = 64°$ central angle

Example 3

Determining Angles in an Inscribed Triangle

Determining the values of x^o and y^o.



Hint: LOOK AT CENTER ANGLES and Complete the circle for x

$x = 360 - 165 - 95$

$= 100°$

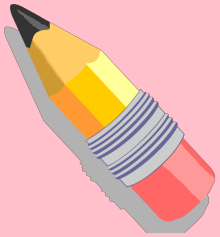
$y = \frac{180-100}{2}$

$= 40°$

Homework:

p. 410 - 412

3
4
5
6
9
11



Attachments

CSI Crime Scene Investigation.mp3