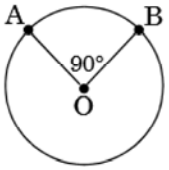
Circles – Arcs 12.09

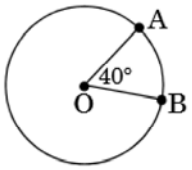
A part of a circle is called an arc. The part of the circle from point A to point B is arc AB and is symbolized $\overset{\frown}{AB}$.



One way to measure arcs is with degrees. The measure of an arc is same number of degrees as the central angle formed by the ends of the arc and the center of the circle, so if ∠AOB = 90°, then $m\overset{\frown}{AB} = 90°$.

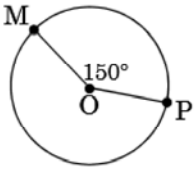
Find the measure of the following arcs:

1.



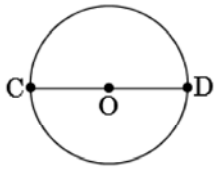
$m\overset{\frown}{AB} =$

2.



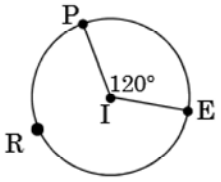
$m\overset{\frown}{MP} =$

3.



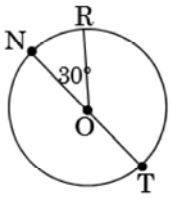
$m\overset{\frown}{CD} =$

4.



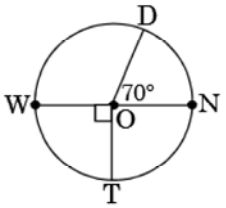
$m\overset{\frown}{PRE} =$

5.



$m\overset{\frown}{RT} =$

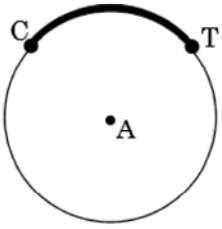
6.



$m\overset{\frown}{DWT} =$

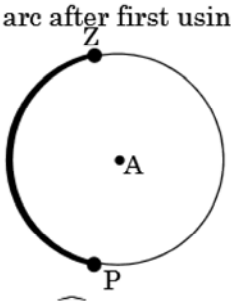
#7-9. Find the measure of the given arc after first using a protractor to draw radii.

7.



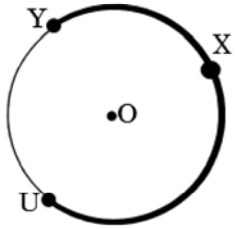
$m\overset{\frown}{CT} =$

8.



$m\overset{\frown}{ZP} =$

9.



$m\overset{\frown}{YXU} =$

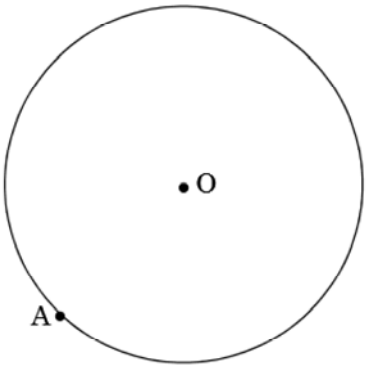
10. Arcs with a measure less than 180° are called **minor arcs**. List all the minor arcs.

11. Arcs with a measure of 180° are called **semicircles**. List all semicircles.

12. Arcs with a measure more than 180° are called **major arcs**. List all major arcs.

Circles – Inscribed Angles 12.10

1. Draw an angle with the vertex at point A and whose sides intersect the circle. Label the points of intersection B and C. Point O should be in the interior of ∠BAC.



Angle BAC is called an **inscribed angle**.
Arc BC is called the **intercepted arc**.

Measure ∠BAC = _____

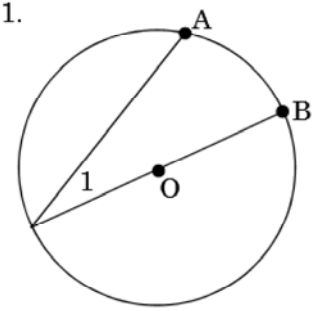
Draw central angle BOC.

Measure ∠BOC = _____

The measure of arc BC in degrees is _____.

Use your protractor to find the following:

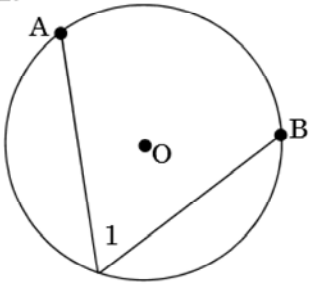
1.



∠1 = ____ ∠AOB = ____

$\overset{\frown}{AB}$ = ____

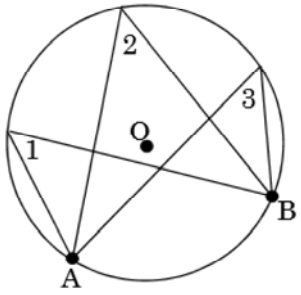
2.



∠1 = ____ ∠AOB = ____

$\overset{\frown}{AB}$ = ____

3.



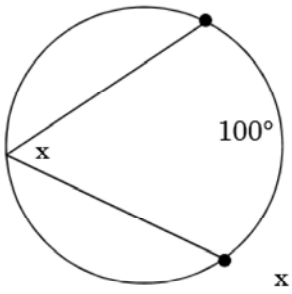
∠AOB = ____ ∠1 = ____

$\overset{\frown}{AB}$ = ____ ∠2 = ____

∠3 = ____

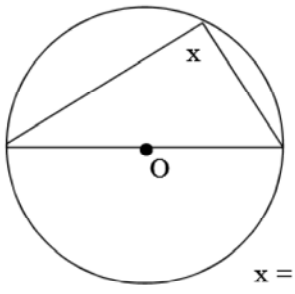
What relationship appears to be true between an inscribed angle and its intercepted arc? _____ Using this conjecture, find the measure of the following angles and arcs.

4.



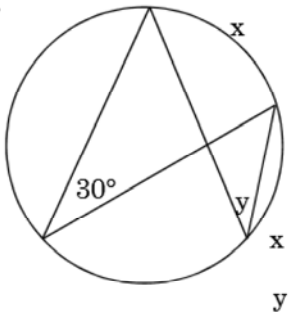
x =

5.



x =

6.



x =

y =