

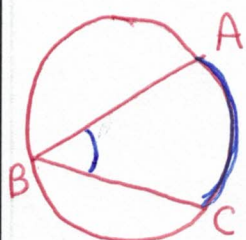
Inscribed Angles

UNIT 6 LESSON _____ INVESTIGATION _____ NOTES

Lesson Vocabulary

Inscribed Angle - An angle within a circle with the vertex on the circle and the sides are chords.

Intercepted Arc - An arc formed by an inscribed angle.



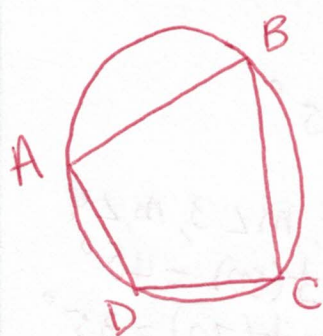
$\angle ABC$ is the inscribed angle

\widehat{AC} is the intercepted arc

Finding measure of an inscribed angle -

The measure of an inscribed angle is $\frac{1}{2}$ the measure of its intercepted arc.

Theorem - Opposite angles of a quadrilateral inscribed in a circle are supplementary.



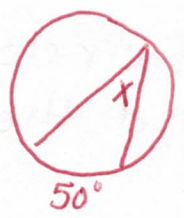
$$m\angle A + m\angle C = 180$$

$$m\angle B + m\angle D = 180$$

* The sum of the angles in a quadrilateral = 360°

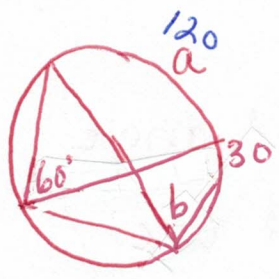
ex.) Find $m\angle x$.

Example Problem(s)



$$m\angle x = \frac{1}{2}(50) = 25^\circ$$

ex.) find a and b.

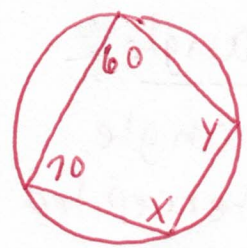


$$a = 2(60) = 120^\circ$$

$$b = \frac{1}{2}(120 + 30)$$

$$b = \frac{1}{2}(150) = 75^\circ$$

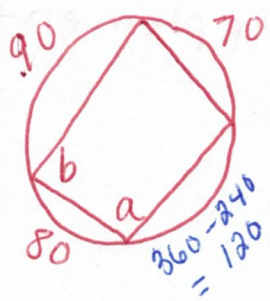
ex.) find x and y.



$$m\angle x = 180 - 60 = 120^\circ$$

$$m\angle y = 180 - 70 = 110^\circ$$

ex.) find a and b.



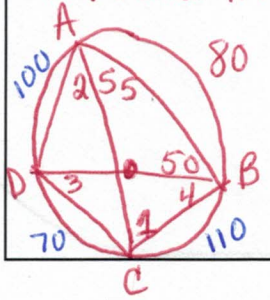
$$m\angle a = \frac{1}{2}(90 + 70)$$

$$m\angle a = \frac{1}{2}(160) = 80^\circ$$

$$m\angle b = \frac{1}{2}(70 + 120)$$

$$m\angle b = \frac{1}{2}(190) = 95^\circ$$

ex.) find $m\widehat{BC}$, $m\widehat{CD}$, $m\widehat{AD}$ and $m\angle 1$, $m\angle 2$, $m\angle 3$, $m\angle 4$



$$m\widehat{BC} = 2(55) = 110^\circ$$

$$m\widehat{CD} = 180 - 110 = 70^\circ$$

$$m\widehat{AD} = 2(50) = 100^\circ$$

$$m\angle 1 = \frac{1}{2}(80) = 40^\circ$$

$$m\angle 2 = \frac{1}{2}(70) = 35^\circ$$

$$m\angle 3 = \frac{1}{2}(110) = 55^\circ$$

$$m\angle 4 = \frac{1}{2}(70) = 35^\circ$$