

**NOTES: MATH 2 HONORS**  
**Unit 10: Inscribed Quadrilaterals**

**Review Problem**

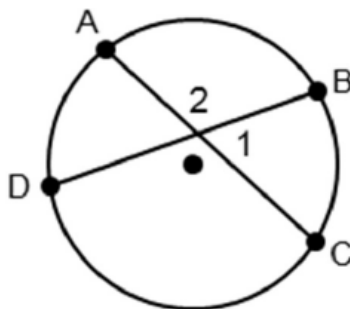
A small car has a tire with a 13-inch diameter. A truck has a tire with a 29-inch diameter. How much farther than the car does the truck have to drive for its tire to complete one revolution?

**THEOREM:**

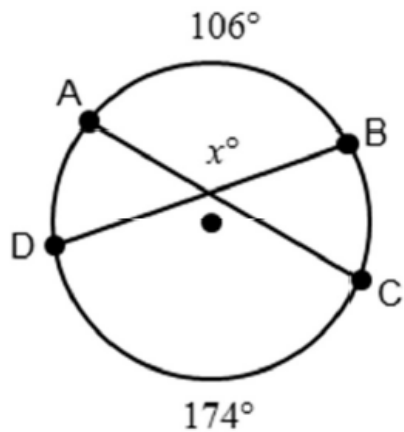
If two chords intersect inside a circle, then the measure of each angle formed is half the sum of the measures of the arcs intercepted.

$$m\angle 2 = \frac{1}{2}(m\widehat{CD} + m\widehat{AB})$$

$$m\angle 1 = \frac{1}{2}(m\widehat{BC} + m\widehat{AD})$$



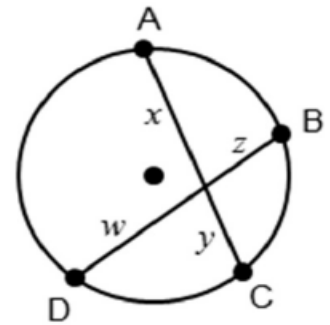
**Example 1:** Find the value of  $x$ .



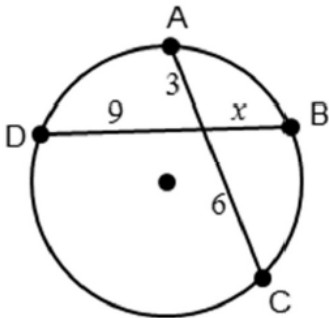
**THEOREM:**

If two chords intersect inside a circle, then the product of the lengths of the segments of one chord is equal to the product of the lengths of the segments of the other chord.

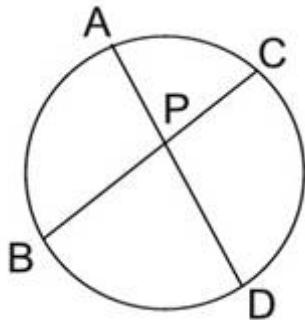
$$xy = wz$$



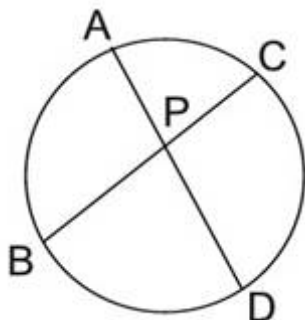
**Example 2:** Find the value of  $x$ .



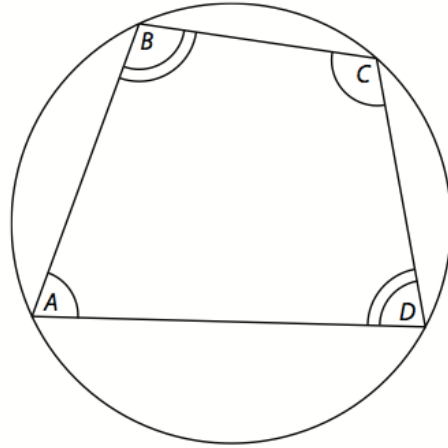
**Example 3:** Find the value of  $x$  if  $AP = x$ ,  $PD = 6$ ,  $BP = 8$ ,  $PC = 3$ .



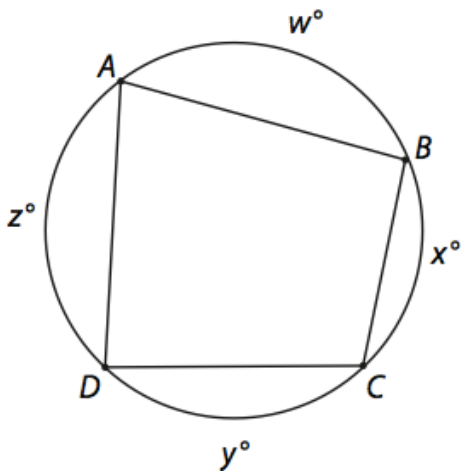
**Example 4:** Find  $m\widehat{AC}$  if  $m\widehat{BD} = 130^\circ$  and  $m\angle BPD = 100^\circ$ .



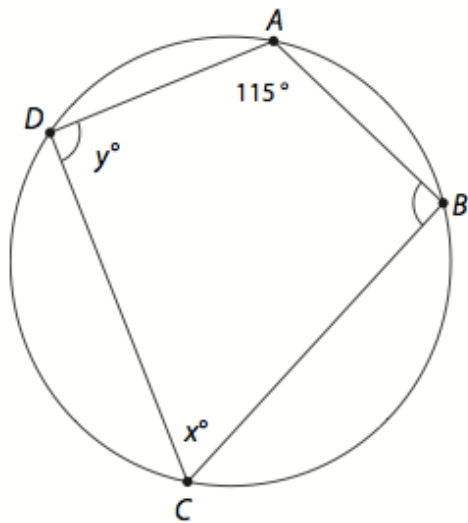
**Inscribed Quadrilateral:** A quadrilateral whose vertices are on a circle and the opposite angles on an inscribed quadrilateral are supplementary.



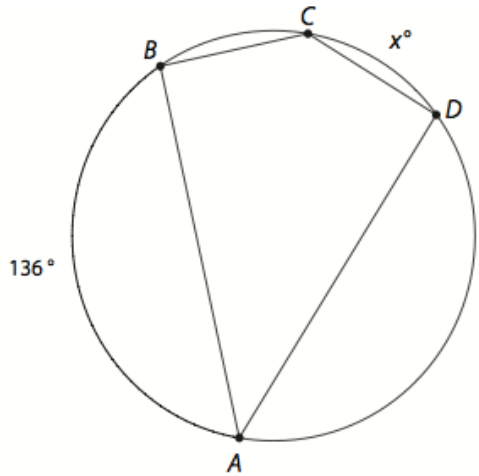
**Example 5:** Prove that the opposite angles of the given quadrilateral are supplementary.



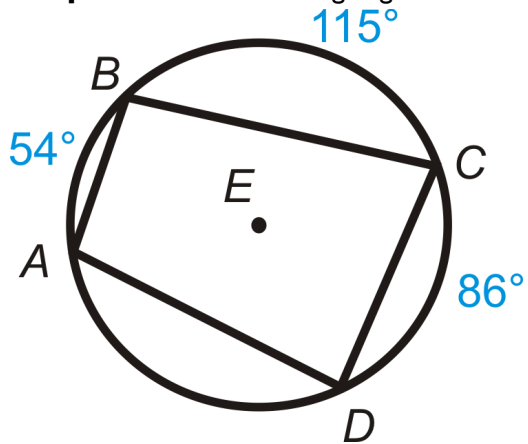
**Example 6:** Find the values of  $x$  and  $y$ .



**Example 7:** Find the values of  $x$ . Assume that quadrilateral  $ABCD$  is a kite.



**Example 8:** Find the missing angle measures in quadrilateral  $ABCD$ .



**Example 9:** Find  $x$ ,  $y$ , and  $z$ .

