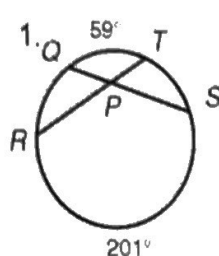
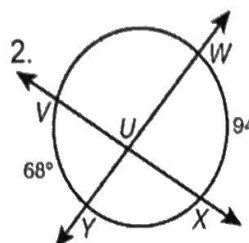


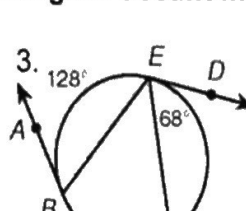
LESSON
15-5 **Angle Relationships in Circles**
Practice and Problem Solving: A/B

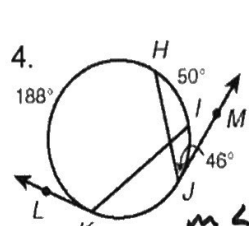
For each figure, determine the measure of the angle by applying the Intersecting Chords Angle Measure Theorem.

1.  $m\angle RPS = \underline{130}$
 $m\angle RPS = \frac{1}{2}(m\widehat{QT} + m\widehat{RS})$
 $= \frac{1}{2}(59 + 201)$

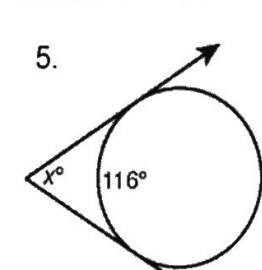
2.  $m\angle YUV = \underline{81}$
 $m\angle YUV = \frac{1}{2}(m\widehat{VY} + m\widehat{WX})$
 $= \frac{1}{2}(68 + 94)$

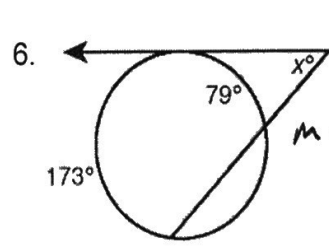
For each figure, determine the measures of the indicated angle and arc by applying the Tangent-Secant Interior Angle Measure Theorem.

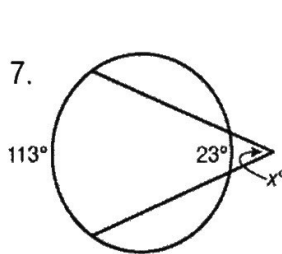
3.  $m\angle ABE = \underline{64^\circ}$
 $m\widehat{CE} = \underline{136^\circ}$
 $m\angle ABE = \frac{1}{2}m\widehat{CE}$
 $= \frac{1}{2}(128)$

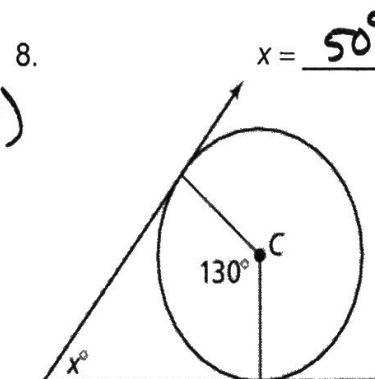
4.  $m\angle LKI = \underline{119^\circ}$
 $m\widehat{J} = \underline{42^\circ}$
 $m\angle LKI = \frac{1}{2}(m\widehat{KH})$
 $= \frac{1}{2}(188 + 50)$
 $m\widehat{J} = 2 \cdot m\angle HJM$
 $= 2(46)$
 $= 92^\circ$
 $\widehat{IJ} + \widehat{HI} = \widehat{HI}$
 $x + 50 = 92$

For each figure, determine the value of x by applying the Tangent-Secant Exterior Angle Measure Theorem.

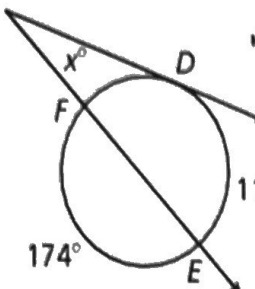
5.  $x = \underline{64^\circ}$
 $m\angle X = \frac{1}{2}(244^\circ - 116^\circ)$
 $= \frac{1}{2}(128^\circ)$
 $= 64^\circ$
 $360 - 116 = 244^\circ$

6.  $x = \underline{47^\circ}$
 $m\angle X = \frac{1}{2}(173^\circ - 79^\circ)$
 $= \frac{1}{2}(94^\circ)$
 $= 47^\circ$

7.  $x = \underline{45^\circ}$
 $m\angle X = \frac{1}{2}(113^\circ - 23^\circ)$
 $= \frac{1}{2}(90^\circ)$
 $= 45^\circ$

8.  $x = \underline{50^\circ}$
 $x + 130 = 180$
 $- 130 - 130$
 $x = 50$

In Exercises 9-16, find the value of x .

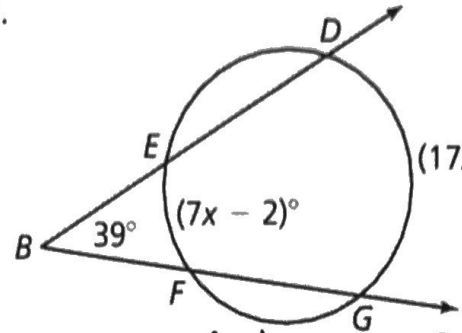
9. 

$$m \widehat{FEO} = 174 + 119 = 293^\circ$$

$$m \widehat{FD} = 360 - 293 = 67^\circ$$

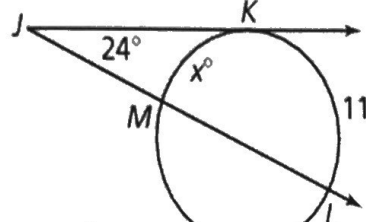
$$\angle X = \frac{1}{2}(m\widehat{DE} - m\widehat{FD})$$

$$\angle X = 26^\circ$$

10. 

$$m \angle B = \frac{1}{2}(m\widehat{DG} - m\widehat{EF})$$

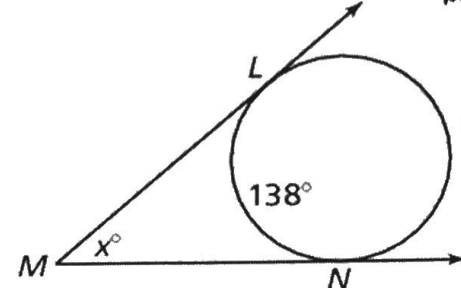
$$x = 7$$

11. 

$$m \angle J = \frac{1}{2}(m\widehat{KL} - m\widehat{ML})$$

$$m \angle J = \frac{1}{2}(118 - x)$$

$$x = 70$$

12. 

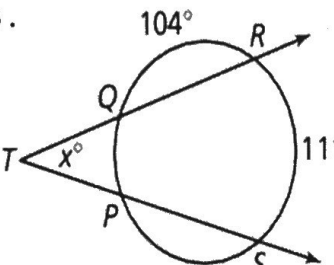
$$m \widehat{LN} = 360 - 138 = 222^\circ$$

$$m \angle M = \frac{1}{2}(m\widehat{LN} - m\widehat{LN})$$

$$= \frac{1}{2}(222 - 138)$$

$$= \frac{1}{2}(84)$$

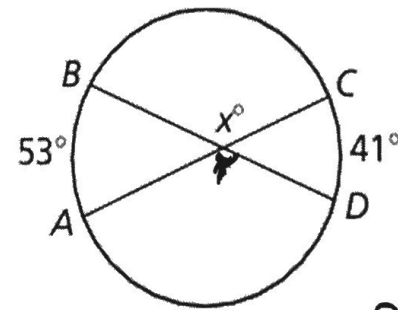
$$= 42$$

13. 

$$m \widehat{QP} = (360 - (111 + 104 + 104)) = 41^\circ$$

$$m \angle T = \frac{1}{2}(111 - 41)$$

$$m \angle T = 35^\circ$$

14. 

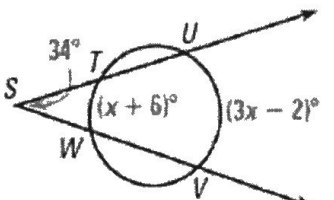
$$m \angle BPA = \frac{1}{2}(m\widehat{BA} + m\widehat{CD})$$

$$= \frac{1}{2}(53 + 41)$$

$$m \angle BPA = \frac{1}{2}(94)$$

$$= 47^\circ$$

$$x = 133$$

15. 

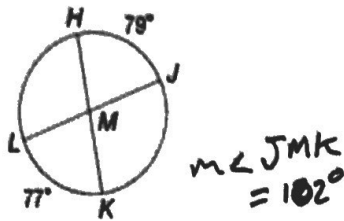
$$\angle S = \frac{1}{2}(m\widehat{UV} - m\widehat{TW})$$

$$x = 38$$

Find each measure.

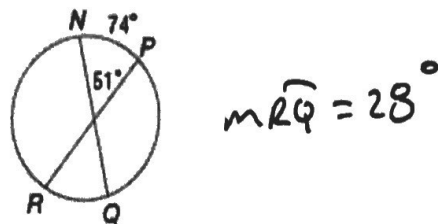
16.

$m\angle JMK$



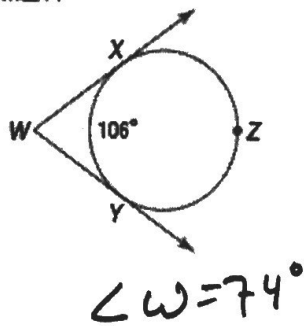
17.

$m\widehat{RQ}$



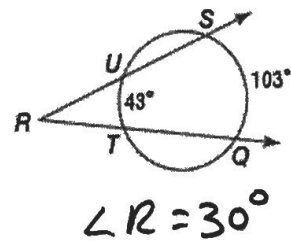
18.

$m\angle W$



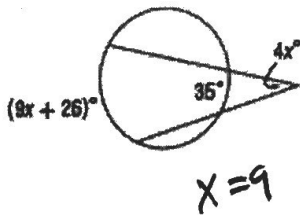
19.

$m\angle R$

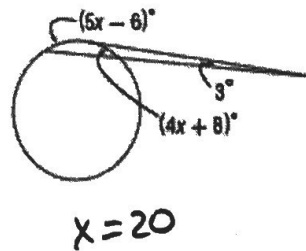


Find the value of x.

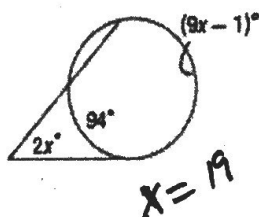
20.



21.



22.



23. A satellite orbits above Earth's equator. Find x , the measure of the Earth's arc, that is visible to the satellite.

$$x = 168^\circ$$

