15-5 Angle Relationships in Circles
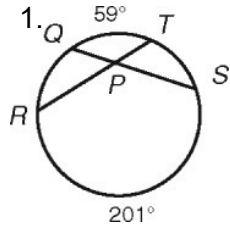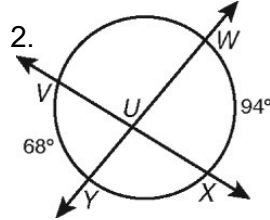
For each figure, determine the measure of the angle by applying the Intersecting Chords Angle Measure Theorem.
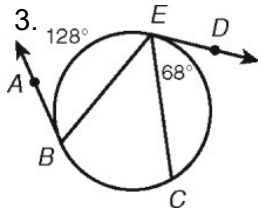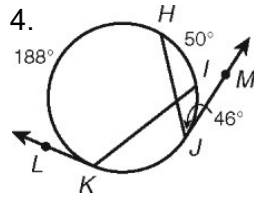
1.

$m\angle RPS =$ _____

2.

$m\angle YUV =$ _____

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

3.

$m\angle ABE =$ _____

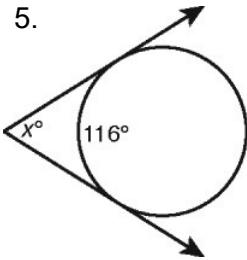$m\overarc{CE} =$ _____

4.

$m\angle LKI =$ _____

$m\overarc{IJ} =$ _____

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

5.

$x =$ _____

6.

$x =$ _____

7.

$x =$ _____

8.

$x =$ _____
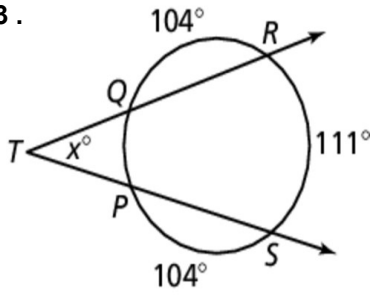
1
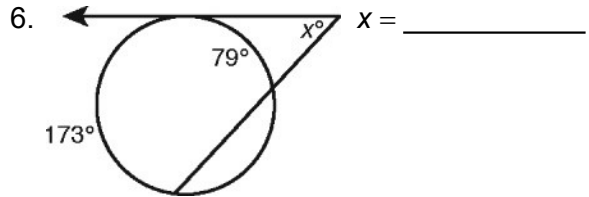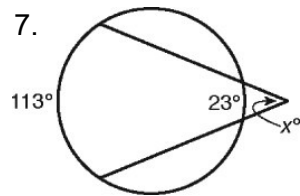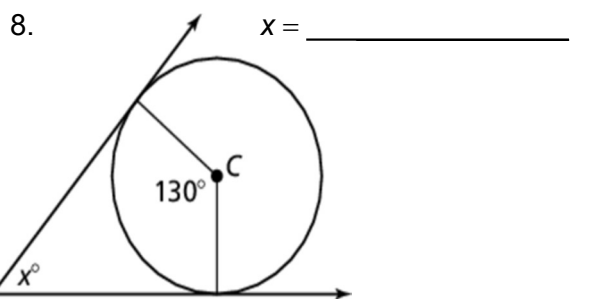
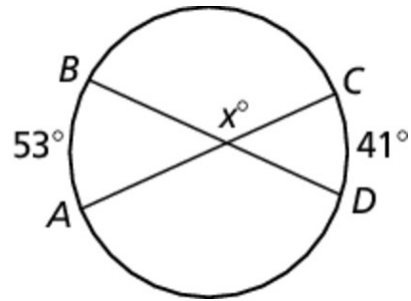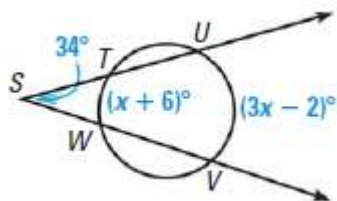**In Exercises 9–16, find the value of x.**

9.

10.

11.

12.

13.

14.

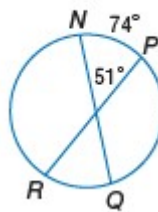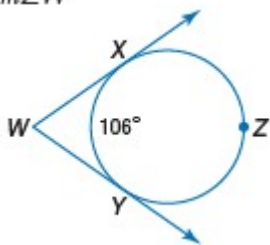15.

2
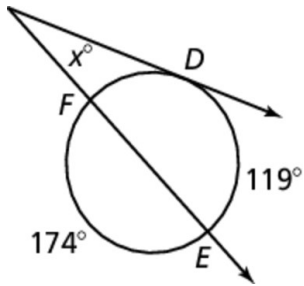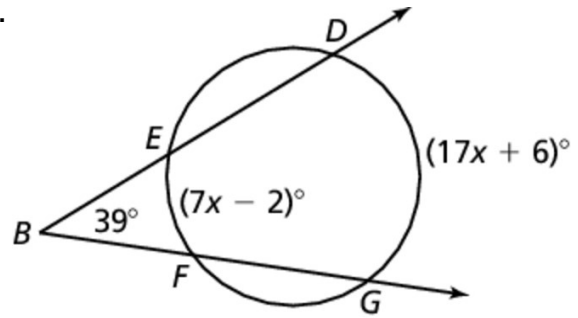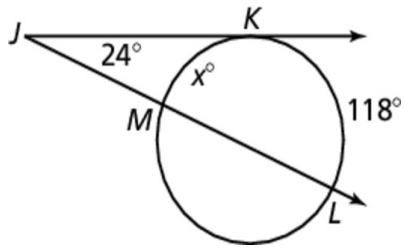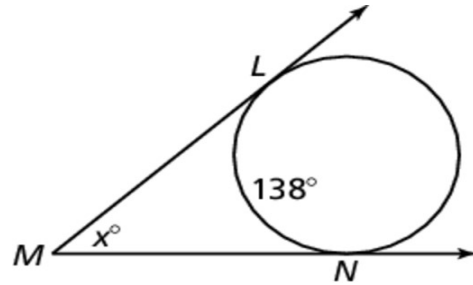
Find each measure.

16.

$m\angle JMK$

H 79°
J
M
L
77° K

17.

$m\overarc{RQ}$

N 74°
P
51°
R Q

18.

$m\angle W$

X
W 106° Z
Y

19.

$m\angle R$

S
U
103°
R
43°
T Q

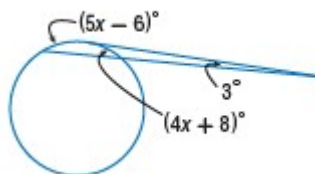Find the value of x.

20.

4x°
35°
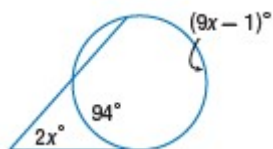(9x + 26)°

21.

(5x − 6)°
3°
(4x + 8)°

22.

(9x − 1)°
94°
2x°
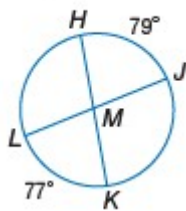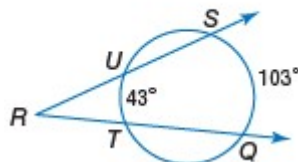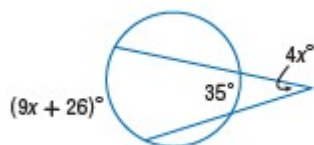
23. A satellite orbits above Earth's equator. Find x, the measure of the Earth's arc, that is visible to the satellite.