Each polygon circumscribes a circle. Find the perimeter of the polygon.

7.

14 in.

6 in.   10 in.

8.

6 cm   B

A

10 cm

$\overline{AB} \cong \overline{AC}$

C

9.

10 m

2 m   6 m

3 m

8 m
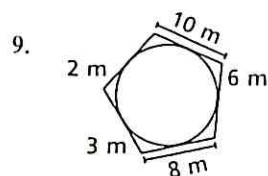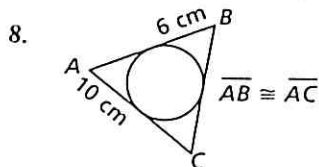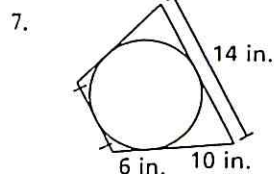
Find the value of each variable. SHOW WORK OR STATE THEOREM

10.

10

8   x
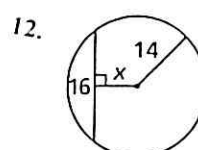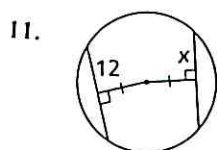
11.

12   x

12.

14

16   x

13.

106°

x°

40°

y°

14.

y°

101°   86°

70°   z°

x°

15.

x°

60°
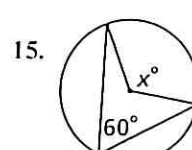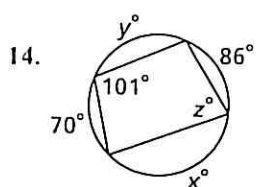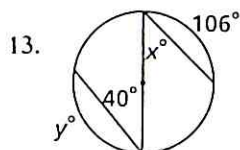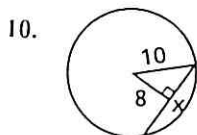
In each diagram, $\overleftrightarrow{ZY}$ is tangent to circles O and P.

16.

Z

25

Y

12

9

O   P

x
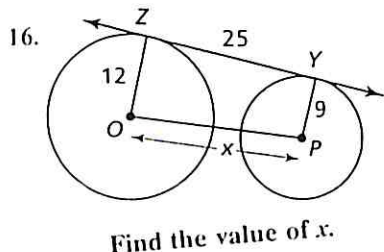
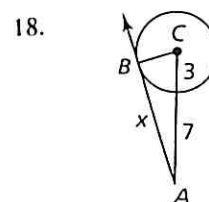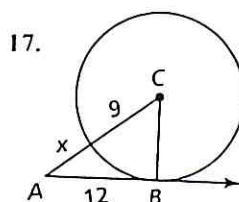**Find the value of x.**

In each diagram, $\overrightarrow{AB}$ is tangent to $\odot C$ at B. Find the value of x.

17.

C

9

x

A   12   B

18.

C

B   3

x   7

A

Write an equation for each circle.

19. center $(0, 1)$; $r = 2$

20. center $(-3, 2)$; through $(5, -4)$

21.

y

O   2   x

(1, −1)

−3

(−1, −3)
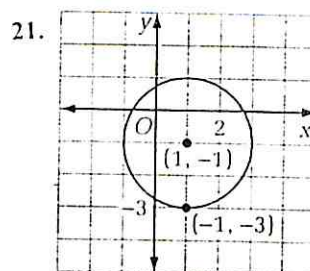
Graph each circle.

22. $x^2 + y^2 = 1$

23. $(x + 4)^2 + (y - 3)^2 = 25$