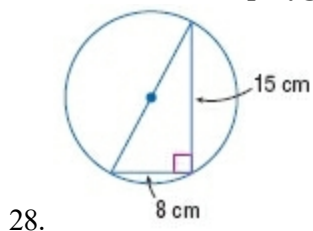**Find the diameter and radius of a circle by with the given circumference. Round to the nearest hundredth.**
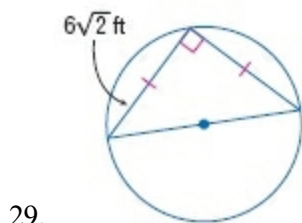
24. $C = 18$ in.

   ANSWER:
   5.73 in.; 2.86 in.

SENSE-MAKING Find the exact circumference of each circle by using the given inscribed or circumscribed polygon.
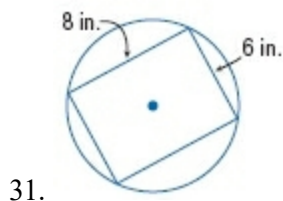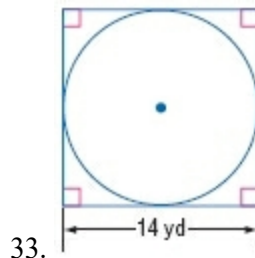
28.

   ANSWER:
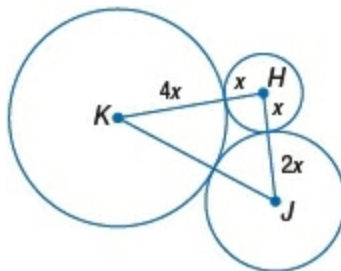 17π cm

29.

   ANSWER:
   12π ft

31.

   ANSWER:
   10π in.

33.
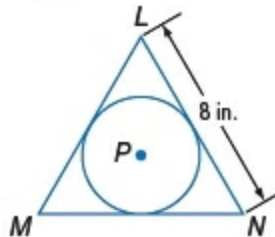

   ANSWER:
   14π yd

50. **CHALLENGE** The sum of the circumferences of circles H, J, and K shown at the right is 56π units. Find KJ.

   ANSWER:
   24 units

53. **CHALLENGE** In the figure, $\odot P$ is inscribed in equilateral triangle LMN. What is the circumference of $\odot P$?
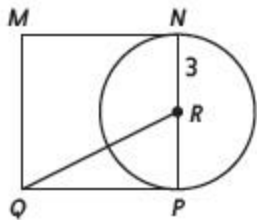

   ANSWER:
   $\dfrac{8\pi}{\sqrt{3}}$ or $\dfrac{8\pi\sqrt{3}}{3}$ in.

56. *MNPQ* is a square. The radius of ⊙*R* is 3.

Which of the following is the length of $\overline{QR}$?

A 3

B $3\sqrt{2}$

C 6

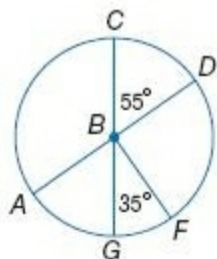**D** $3\sqrt{5}$

ANSWER:

D

$\overline{AD}$ and $\overline{CG}$ are diameters of $\odot B$. Identify each arc as a *major arc, minor arc,* or *semicircle.* Then find its measure.

18. $m\widehat{CD}$

ANSWER:
minor arc; 55

20. $m(\widehat{CFG})$

ANSWER:
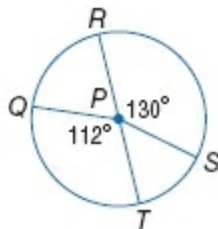semicircle; 180

22. $m\widehat{GCF}$

ANSWER:
major arc; 325

24. $m\widehat{AG}$

ANSWER:
minor arc; 55

Use $\odot P$ to find the length of each arc. Round to the nearest hundredth.

38. $\widehat{RS}$, if the radius is 2 inches

ANSWER:
4.54 in.

39. $\widehat{QT}$, if the diameter is 9 centimeters

ANSWER:
8.80 cm

42. $\widehat{QRS}$, if $RT = 11$ feet
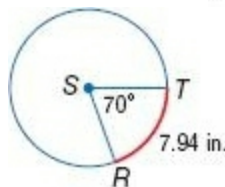
ANSWER:
19.01 ft

43. $\widehat{RTS}$, if $PQ = 3$ meters

ANSWER:
12.04 m

REASONING Find each measure. Round each linear measure to the nearest hundredth and each arc measure to the nearest degree.
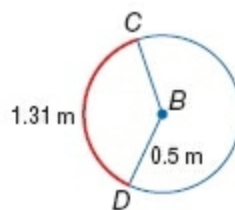
47. circumference of $\odot S$
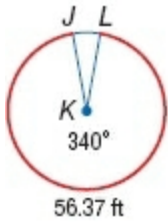
ANSWER:
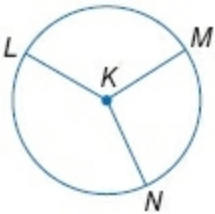40.83 in.

48. $m\widehat{CD}$

ANSWER:
150°

49. radius of ⊙K

56.37 ft

ANSWER:

9.50 ft

61. **CHALLENGE** The measures of $\overset{\frown}{LM}$, $\overset{\frown}{MN}$, and $\overset{\frown}{NL}$ are in the ratio 5:3:4. Find the measure of each arc.

ANSWER:

$m\overset{\frown}{LM} = 150, \; m\overset{\frown}{MN} = 90, \; m\overset{\frown}{NL} = 120$

69. The minute hand of a clock is 3 inches long. Which of the following is the best estimate of the distance the tip of the hand moves as the time changes from 12:30 to 12:45?

A 0.8 in.
B 2.4 in.
C 4.7 in.
D 9.4 in.

ANSWER:

C