Review & Refresh

Find the area of the trapezoid.

1.

6 ft

3 ft

4 ft

2.

5 km

3 km

7 km

3.

3.5 in.

6 in.

9.5 in.
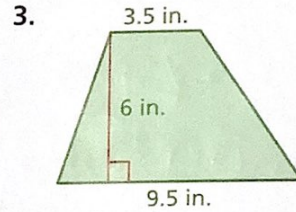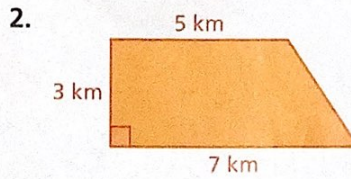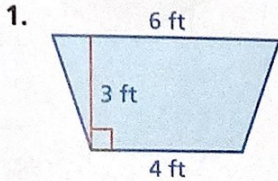
4. Find the percent of change from 24 to 18.
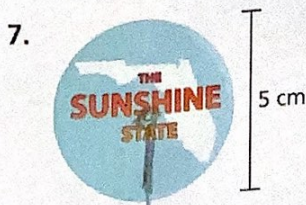
Concepts, Skills, & Problem Solving

EXPLORING DIAMETER AND CIRCUMFERENCE Estimate the circumference of the circular base of the object. (See Exploration 2.)

5. tube of lip balm with radius 0.5 mm

6. D battery with radius 0.65 in.

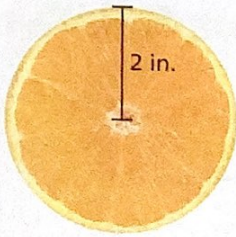**FINDING A RADIUS** Find the radius of the button. (See Example 1.)   *radius is half the diameter*

7.

THE
SUNSHINE
STATE

5 cm

$5 \div 2$

$r = 2.5$ cm

8.

$3\frac{1}{2}$ in.

▶9.

I ♥ My Dog

28 mm

GO DIGITAL

FINDING A DIAMETER Find the diameter of the object.

10.

2 in.

11.

0.8 ft

12.

$\frac{3}{5}$ cm
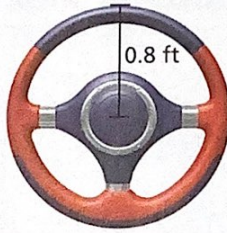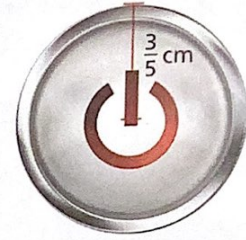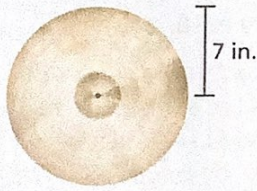
$2 \cdot 2 = 4$

diameter → multiply
radius • 2

FINDING A CIRCUMFERENCE Find the circumference of the object. (See Example 2.)

▶ **13.**

6 cm
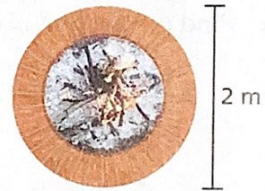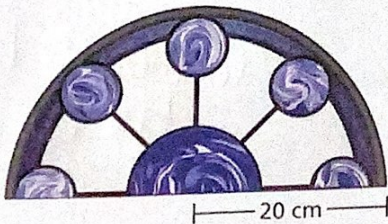
14.

7 in.

15.

2 m

FINDING THE PERIMETER OF A SEMICIRCULAR REGION Find the perimeter of the window.
(See Example 3.)

16.

20 cm

▶ **17.**

3 ft
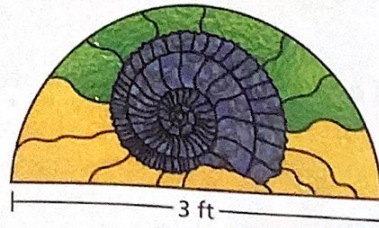
ESTIMATING A RADIUS Estimate the radius of the object.

18.

C = 122 in.

$C = 2\pi r$

$122 = 2 \cdot 3.14 \cdot r$

$6.28 \cdot r$

$r = 19.43$

$122 =$

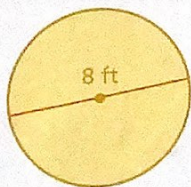$\dfrac{}{6.28}$ $r = 19.4367$

19.

C = 8.9 mm

7 MTR

20. **MODELING REAL LIFE** A circular sinkhole has a circumference of 75.36 meters. A week later, it has a circumference of 150.42 meters. (See Example 4.)
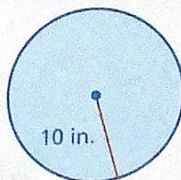
a. Estimate the diameter of the sinkhole each week.

b. How many times greater is the diameter of the sinkhole a week later?
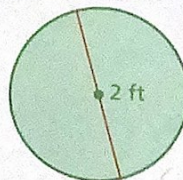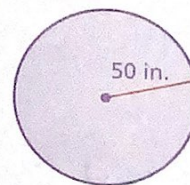
21. **REASONING** Consider the circles A, B, C, and D.
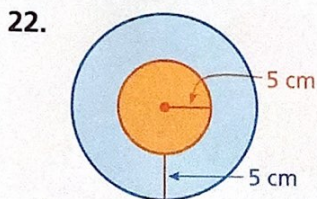
A.

8 ft

B.

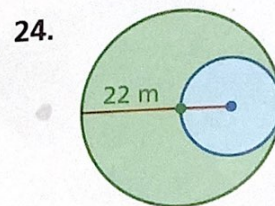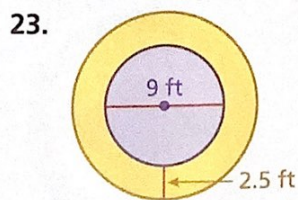10 in.

C.

2 ft

D.

50 in.

a. Without calculating, which circle has the greatest circumference? Explain.

b. Without calculating, which circle has the least circumference? Explain.

FINDING CIRCUMFERENCES Find the circumferences of both circles.

22.

5 cm

5 cm

23.

9 ft

2.5 ft

24.

22 m

orange r=5
2πr = 31.4cm
blue r = 10
2·3.14·10 = 62.8cm

25. **MODELING REAL LIFE** A satellite is in an approximately circular orbit 36,000 kilometers from Earth's surface. The radius of Earth is about 6400 kilometers. What is the circumference of the satellite's orbit?
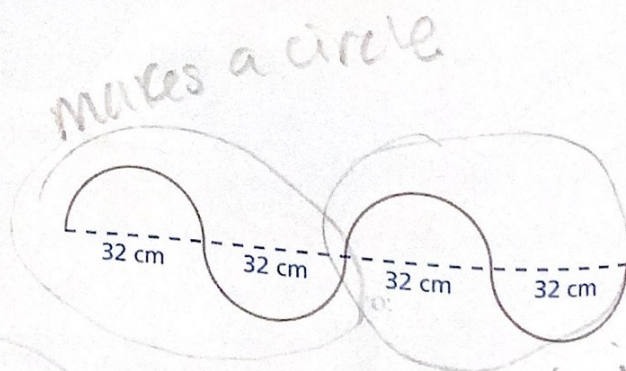
26. **STRUCTURE** The ratio of circumference to diameter is the same for every circle. Is the ratio of circumference to radius the same for every circle? Explain.

makes a circle

27. **PROBLEM SOLVING** A wire is bent to form four semicircles. How long is the wire? Justify your answer.

d=32

$C = πd$

100.48·2 = 200.96cm

32 cm   32 cm   32 cm   32 cm

this is a circle