

MAIN IDEA

- Estimate and find the circumference of circles.

KEY CONCEPT**Radius and Diameter**

The diameter d of a circle is twice its radius r . The radius r of a circle is half of its diameter d .

BUILD YOUR VOCABULARY (pages 241–242)

A **circle** is the set of all in a plane that are the same distance from a called the **center**.

A **chord** is any segment with both on the circle.

The **diameter** is the distance a circle through its center.

The **radius** is the distance from the to any point on a circle.

The **circumference** is the distance a circle.

EXAMPLE Find the Radius

- 1 The diameter of a circle is 48 centimeters. Find the radius.

$$r = \boxed{}$$

Write the formula.

$$r = \boxed{}$$

Replace d with 48.

$$r = \boxed{}$$

Divide.

The radius is centimeters.

Check Your Progress

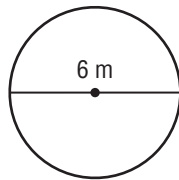
The radius of a circle is 22 centimeters. Find the diameter.

EXAMPLES Estimate the Circumference**KEY CONCEPT**

Circumference The circumference of a circle is equal to π times twice its radius.

Estimate the circumference of each circle.

1



$$C = \boxed{}$$

Circumference of a circle

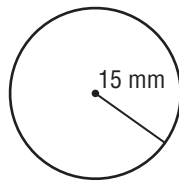
$$C \approx \boxed{} \cdot \boxed{}$$

Replace π with $\boxed{}$ and d with $\boxed{}$.

$$C \approx \boxed{} \text{ m}$$

Multiply.

2



$$C = \boxed{}$$

Circumference of a circle

$$C \approx \boxed{} \cdot \boxed{} \cdot \boxed{}$$

Replace π with $\boxed{}$ and r with $\boxed{}$.

$$C \approx \boxed{} \text{ mm}$$

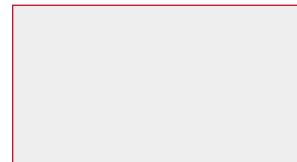
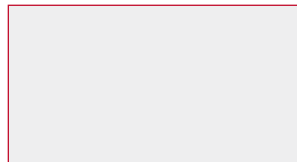
Multiply.

Check Your Progress

Estimate the circumference of each circle.

a. diameter = 4 yd

b. radius = 12 in.

**EXAMPLE****Use a Calculator to Find Circumference**

3

Use a calculator to find the circumference of the circle. Round to the nearest tenth.

$$C = \boxed{}$$

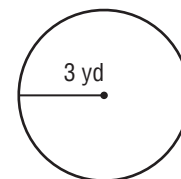
Circumference of a circle

$$C = \boxed{} \cdot \boxed{} \cdot \boxed{}$$

Replace r with 3.

$$2 \times \boxed{\pi} \times 16 \boxed{\text{ENTER}} 18.8495559215$$

The circumference is about $\boxed{}$ yards.



Check Your Progress

Use a calculator to find the circumference of a circle with a diameter of 24 centimeters. Round to the nearest tenth.

EXAMPLE

5 TEST EXAMPLE Anna knows the diameter of a basketball hoop but would like to find the circumference. Which method can she use to find the circumference of the basketball hoop?

- A Divide the diameter by π .
- B Multiply the radius by π .
- C Multiply the diameter by 2, and then multiply by π .
- D Multiply the diameter by π .

Read the Item

You need to determine the method used to find the circumference of the basketball hoop. You know the

of the basketball hoop.

Solve the Item

Use the formula for the circumference of a circle $C =$.

The formula states that the circumference of a circle is equal to

. So, the answer is .

Check Your Progress

MULTIPLE CHOICE A standard baseball has a circumference of 9 inches. Which method can be used to find the radius of the baseball?

- F Divide the circumference by π and then multiply by 2.
- G Divide the circumference by π and then divide by 2.
- H Multiply the circumference by π and then multiply by 2.
- J Multiply the circumference by π and then divide by 2.

HOMEWORK ASSIGNMENT

Page(s):

Exercises: