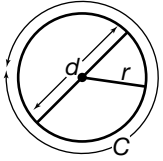


Name \_\_\_\_\_ Date \_\_\_\_\_

## Circles and Circumference (Pages 309–311)

A **circle** is a set of points in a plane that are the same distance from a point called the **center**. The distance from the center to any point on the circle is the **radius** ( $r$ ). The distance across the circle through the center is the **diameter** ( $d$ ). The distance around the circle is the **circumference** ( $C$ ). The diameter is twice the radius, or  $d = 2r$ .

<p><b>Finding the Circumference</b></p>	<p>The circumference of a circle is equal to its diameter times <math>\pi</math>, or 2 times its radius times <math>\pi</math>. <math>C = \pi d</math> or <math>C = 2\pi r</math></p>  <p>Use <math>\frac{22}{7}</math> or 3.14 as an approximate value for <math>\pi</math>.</p>
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### EXAMPLES

- A** Find  $C$  if the radius is 7 inches.

$$C = 2\pi r$$

$$C = 2\left(\frac{22}{7}\right)(7) \text{ Replace } r \text{ with } 7 \text{ and } \pi \text{ with } \frac{22}{7}.$$

$$C = 44 \text{ in. Multiply.}$$

- B** Find  $C$  if the diameter is 4.2 meters.

$$C = \pi d$$

$$C = 3.14(4.2) \text{ Replace } d \text{ with } 4.2 \text{ and } \pi \text{ with } 3.14.$$

$$C = 13.188 \text{ m Multiply.}$$

### Try These Together

1. Find  $C$  if  $d = 18$  yards.

*HINT: Use the formula that contains  $d$ .*

2. Find  $C$  if the radius is 23 centimeters.

*HINT: Use the formula that contains  $r$ .*

### PRACTICE

Find the circumference of each circle to the nearest tenth. Use  $\frac{22}{7}$  or 3.14 for  $\pi$ .

- The radius is  $5\frac{3}{8}$  inches.
- The diameter is 60.2 meters.
- The diameter is 11.3 meters.
- The radius is  $8\frac{1}{2}$  inches.
- The radius is 8.5 meters.
- The diameter is 75.2 meters.
- The diameter is  $16\frac{1}{3}$  yards.
- The radius is 32.1 meters.
- The radius is 19.65 centimeters.
- The diameter is 5.7 meters.



- 13. Standardized Test Practice** What is the circumference of a circle with a radius of 3.6 meters?

**A** 5.7 m

**B** 11.3 m

**C** 22.6 m

**D** 40.7 m

**Answers:** 1. 56.5 yd 2. 144.4 cm 3.  $33\frac{17}{11}$  in. 4. 189.0 m 5. 35.5 m 6.  $53\frac{7}{3}$  in. 7. 53.4 m 8. 236.1 m 9.  $51\frac{3}{8}$  yd 10. 201.6 m 11. 123.4 cm 12. 17.9 m 13. C