

Chapter 6 | Circles I: Radius, Diameter, Circumference, and Pi

Worksheet B | Independent Practice

Name: _____ Grade: _____ Date: _____

Warm-up: Worked Examples

Example 1: Foundational

Problem: A circle has a radius of 9 cm. Find the diameter.

Double the radius

$$2 \times 9 = 18$$

Answer

18 cm

Example 2: Typical

Problem: A circular mat has a diameter of 2.6 m. Find its circumference. Use $\pi \approx 3.14$.

$$C = \pi d$$

$$3.14 \times 2.6 = 8.164$$

Answer

≈ 8.16 m

Example 3: Common-Trap

Problem: A circle has a radius of 6 cm. A student writes $C = 3.14(6) = 18.84$ cm. Explain the error. Then find the correct circumference.

Wrong (uses radius as d)

$$3.14 \times 6 = 18.84$$

Correct (doubles first)

$$3.14 \times 12 = 37.68$$

Example 4: Circumference From a Radius

Problem: A circular planter has a radius of 3.2 m. Find the distance around it. Use $\pi \approx 3.14$.

$$C = 2\pi r$$

$$2 \times 3.14 \times 3.2 = 20.096$$

Answer

≈ 20.10 m

Example 5: Working Backward From Circumference

Problem: A circular wheel has circumference 94.2 cm. Estimate its diameter and radius. Use $\pi \approx 3.14$.

Divide by π

$$94.2 \div 3.14 = 30$$

Halve for radius

$$30 \div 2 = 15$$

Practice

1. Find the circumference of a circle with diameter 18 cm.

2. Find the circumference of a circle with diameter 3.5 m.

3. A circle has radius 16 cm. Find the diameter.

4. Find the circumference of a circle with diameter 120 cm.

5. Find the circumference of a circle with radius 11 cm.

6. A circle has diameter 45 m. Find the radius.

7. Find the circumference of a circle with radius 2.25 m.

8. Find the circumference of a circle with radius 0.6 km.

9. A circle has radius 2.4 km. Find the diameter.

10. A circular clock has diameter 30 cm. Find the length around its edge.

11. A circular pond has radius 14 m. Find the distance around the pond.

12. A circle has diameter 9.8 cm. Find the radius.

13. A bicycle wheel has diameter 66 cm. How far does it travel in one full turn?

14. A round rug has radius 1.8 m. Binding is sewn around its edge. How much binding is needed?

15. A circular running track has circumference 157 m. Estimate its diameter.
