

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

Worksheet A | Guided Practice

Name: _____ Grade: _____ Date: _____

Warm-up: Worked Examples

Example 1: Foundational

Problem: A circle has a radius of 7 cm. Find the diameter.

Double the radius

$$2 \times 7 = 14$$

Answer

14 cm

Example 2: Typical

Problem: A circular table has a diameter of 1.4 m. Find its circumference. Use $\pi \approx 3.14$.

$$C = \pi d$$

$$3.14 \times 1.4 = 4.396$$

Answer

≈ 4.40 m

Example 3: Common-Trap

Problem: A circle has a radius of 8 cm. A student writes $C = 3.14(8) = 25.12$ cm. Explain the error. Then find the correct circumference.

Wrong (uses radius as d)

$$3.14 \times 8 = 25.12$$

Correct (doubles first)

$$3.14 \times 16 = 50.24$$

Example 4: Circumference From a Radius

Problem: A circular garden has a radius of 4.5 m. A border will be placed around the garden. Find the length of border needed. Use $\pi \approx 3.14$.

$$C = 2\pi r$$

$$2 \times 3.14 \times 4.5 = 28.26$$

Answer

28.26 m

Example 5: Working Backward From Circumference

Problem: A circular hoop has circumference 62.8 cm. Estimate its diameter and radius. Use $\pi \approx 3.14$.

Divide by π

$$62.8 \div 3.14 = 20$$

Halve for radius

$$20 \div 2 = 10$$

Practice

1. The point in the middle of a circle is the _____.

2. The distance from the centre to the edge of a circle is the _____.

3. A circle has radius 5 cm. Find its diameter.

4. The distance across a circle through its centre is the _____.

5. A circle has diameter 22 cm. Find its radius.

6. The distance around a circle is the _____.

7. A circle has radius 13 m. Find its diameter.

8. The number represented by π is approximately _____.

9. A circle has diameter 3.6 m. Find its radius.

10. Find the circumference of a circle with diameter 6 cm.

11. Find the circumference of a circle with diameter 17 m.

12. Find the circumference of a circle with diameter 0.8 km.

13. A circle has radius 4 cm. First find the diameter. Then find the circumference.

14. A circle has radius 7.5 m. Find the circumference.

15. A circular lid has a radius of 20 cm. How much material is needed to go around the edge?
