

Circle Power

Use $\pi = 3.14$ to find distances around and spaces inside circles.

GRADE 6 • 6.MG.1

6.MG.1 "The student will identify the characteristics of circles and solve problems, including those in context, involving circumference and area. Identify and describe chord, diameter, radius, circumference, and area of a circle..."

NAME _____

DATE _____

CIRCLE RULES

A radius goes from the center to the circle. A diameter goes across the center and is twice the radius, while a chord has both endpoints on the circle. Circumference is the distance around a circle, $C = \pi \times d$ or $C = 2 \times \pi \times r$, and area is the space inside a circle, $A = \pi \times r^2$.

WORKED EXAMPLE

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

1. Use $C = 2 \times \pi \times r$.
2. Substitute: $C = 2 \times 3.14 \times 11$.
3. Multiply: $C = 69.08$.

Answer: 69.08 cm

PRACTICE 6 problems

- 1** Find the circumference of a circle with a diameter of 10 cm.

ANSWER _____

- 2** Find the circumference of a circle with a radius of 6 cm.

ANSWER _____

- 3** Find the area of a circle with a diameter of 12 cm.

ANSWER _____

- 4** A circle has a circumference of 43.96 cm. Find its diameter.

ANSWER _____

- 5** A circle has an area of 78.5 cm^2 . Find its radius.

ANSWER _____

- 6** A circle has a radius of 8 cm. Find its circumference and its area.

ANSWER _____

APPLY IT Show your work

- 1** A bike club measures a wheel with a diameter of 12 inches. During a test, the wheel makes 5 complete turns. How far does the bike travel?

WORK SPACE

ANSWER _____

- 2** For a school esports event, students cover a circular stage logo with colored paper. The logo has a radius of 9 feet. What area of paper is needed?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A circular tabletop has a circumference of 62.8 cm. Find its radius and its area. Show equations.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Find the circumference of a circle with a diameter of 10 cm.	31.4 cm
2	Find the circumference of a circle with a radius of 6 cm.	37.68 cm
3	Find the area of a circle with a diameter of 12 cm.	113.04 cm²
4	A circle has a circumference of 43.96 cm. Find its diameter.	14 cm
5	A circle has an area of 78.5 cm ² . Find its radius.	5 cm
6	A circle has a radius of 8 cm. Find its circumference and its area.	Circumference: 50.24 cm; area: 200.96 cm²

PART 2 • APPLY IT

- 188.4 inches** One turn covers the circumference: $3.14 \times 12 = 37.68$ inches. Multiply 37.68 by 5 turns to get 188.4 inches.
- 254.34 ft²** Use $A = \pi \times r^2$. Multiply $3.14 \times 9 \times 9$ to get 254.34 square feet.

CHALLENGE

$$d = 62.8 / 3.14 = 20 \text{ cm}; r = 20 / 2 = 10 \text{ cm}; A = 3.14 \times 10^2 = 314 \text{ cm}^2$$

Accept 188.40 inches as equivalent to 188.4 inches. Require linear units for circumference and square units for area.