

Circle Power

Find circle area and circumference with π .

GRADE 6 • 6.MG.1.e

6.MG.1.e "Solve problems, including those in context, involving circumference and area of a circle when given the length of the diameter or radius."

NAME _____

DATE _____

CIRCLE RULES

Use $C = \pi d$ to find circumference, and use $A = \pi r^2$ to find area. The radius is half the diameter. Leave answers in terms of π unless the problem tells you to use a decimal.

WORKED EXAMPLE

A circle has a radius of 5 cm. Find its area.

1. $A = \pi r^2$
2. $A = \pi(5)^2$
3. $A = 25\pi \text{ cm}^2$

Answer: $25\pi \text{ cm}^2$

PRACTICE 6 problems

- 1** Find the circumference of a circle with a diameter of 8 m.

ANSWER _____

- 2** Find the area of a circle with a radius of 4 cm.

ANSWER _____

- 3** Find the circumference of a circle with a radius of 9 in.

ANSWER _____

- 4** Find the area of a circle with a diameter of 12 yd.

ANSWER _____

- 5** Find the circumference of a circle with a diameter of 14 ft.

ANSWER _____

- 6** Find the area of a circle with a radius of 3 mm.

ANSWER _____

APPLY IT Show your work

- 1** A round game-table mat has a diameter of 16 inches. How much edging is needed to go all the way around the mat? Give your answer in terms of pi.

WORK SPACE

ANSWER _____

- 2** The garden club is making a circular flower bed with a radius of 7 feet. What area will the flowers cover? Give your answer in terms of pi.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A circular art display has an area of 81π square inches. Find its radius and its circumference. Explain how the area helped you find the radius.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Find the circumference of a circle with a diameter of 8 m.	8pi m
2	Find the area of a circle with a radius of 4 cm.	16pi cm²
3	Find the circumference of a circle with a radius of 9 in.	18pi in.
4	Find the area of a circle with a diameter of 12 yd.	36pi yd²
5	Find the circumference of a circle with a diameter of 14 ft.	14pi ft
6	Find the area of a circle with a radius of 3 mm.	9pi mm²

PART 2 • APPLY IT

- 16pi inches** Edging goes around the outside, so find circumference. Use $C = \pi d = \pi(16) = 16\pi$ inches.
- 49pi ft²** A flower bed covers the inside of the circle, so find area. Use $A = \pi r^2 = \pi(7)^2 = 49\pi$ ft².

CHALLENGE

The radius is 9 inches because $9^2 = 81$. The circumference is 18pi inches because $C = 2\pi(9)$.

Accept equivalent forms such as $\pi(8)$ for 8π . Require square units for area and linear units for circumference.