LESSON MAKER PRO

Circle Power

Find areas and distances around circles.

GRADE 7 · NY-7.G.4

NY-7.G.4 "Apply the formulas for the area and circumference of a circle to solve problems."

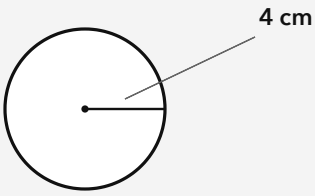
NAME _____ DATE _____

CIRCLE FORMULAS

For a circle with radius r, use $A = \pi r^2$ to find area. Circumference is the distance around a circle, so use $C = 2\pi r$ or $C = \pi d$. Leave answers in terms of π unless the problem asks for a decimal.

WORKED EXAMPLE

Find the area of the circle shown.

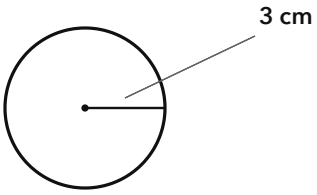


1. The radius is 4 cm.
2. Use $A = \pi r^2$.
3. $A = \pi(4)^2 = 16\pi$.

Answer: 16π cm^2

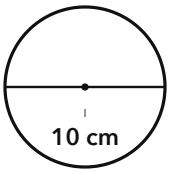
PRACTICE 6 problems

1 Find the area of the circle shown.



ANSWER _____

2 Find the circumference of the circle shown.



ANSWER _____

3 A round table has a radius of 6 cm. What is its area?

ANSWER _____

4 A circle has a radius of 8 m. What is its circumference?

ANSWER _____

5 A circle has a diameter of 14 inches. What is its area?

ANSWER _____

6 A circle has an area of 81π m^2. Find its radius and its circumference.

ANSWER _____

_____

APPLY IT Show your work

1 A student is making a round button with a diameter of 12 cm. What area of material is needed for the front of the button?

WORK SPACE

ANSWER _____

2 A robotics club marks off a round practice area with a radius of 15 feet. How much safety tape is needed to go once around the area?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A circular fountain has a radius of 11 m. A circular planting bed with a radius of 7 m is centered inside it. The space between the planting bed and the fountain will be covered with tiles. What area will the tiles cover? Show how you used both circle areas.

WORK SPACE AND ANSWER

ANSWER KEY # Circle Power

GRADE 7 · NY-7.G.4

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the area of the circle shown.	**9π cm^2**
2	Find the circumference of the circle shown.	**10π cm**
3	A round table has a radius of 6 cm. What is its area?	**36π cm^2**
4	A circle has a radius of 8 m. What is its circumference?	**16π m**
5	A circle has a diameter of 14 inches. What is its area?	**49π in^2**
6	A circle has an area of 81π m^2. Find its radius and its circumference.	**radius = 9 m; circumference = 18π m**

PART 2 · APPLY IT

1. **36π cm^2** The radius is half of 12 cm, or 6 cm. Use $A = \pi(6)^2$.
2. **30π ft** Use the circumference formula $C = 2\pi r$. Substitute 15 for r.

CHALLENGE

72π m^2; $\pi(11)^2 - \pi(7)^2 = 121\pi - 49\pi = 72\pi$

Accept equivalent area expressions such as $16 \times \pi$ cm^2. For the challenge, students must subtract the smaller circle area from the larger circle area.