LESSON MAKER PRO

Circle Quest

Use radius and diameter to solve circle problems.

GRADE 7 · 7.GSR.5.5

7.GSR.5.5 "Given the formula for the area and circumference of a circle, solve problems that exist in everyday life."

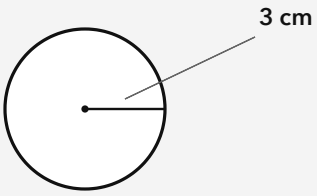
NAME _____ DATE _____

CIRCLE FORMULAS

Use $C = 2\pi r$ to find circumference, the distance around a circle. Use $A = \pi r^2$ to find area, the space inside a circle. If you know the diameter, divide it by 2 to find the radius.

WORKED EXAMPLE

Find the circumference of the circle.

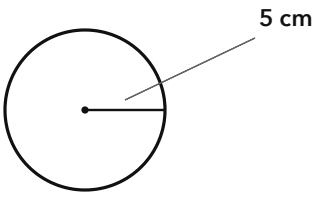


1. The radius is 3 cm.
2. $C = 2\pi r = 2\pi(3)$.
3. $C = 6\pi$ cm.

Answer: 6π cm

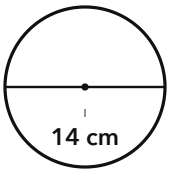
PRACTICE 6 problems

1 Find the circumference of the circle.



ANSWER _____

2 Find the area of the circle.



ANSWER _____

3 A round table has a diameter of 16 in. What is its circumference?

ANSWER _____

4 A circular coaster has a radius of 6 cm. What is its area?

ANSWER _____

5 A circle has a circumference of 18π ft. What is its radius?

ANSWER _____

6 A circular pool has an area of 81π m^2. What is its diameter?

ANSWER _____

APPLY IT Show your work

1 Your club is making a circular vinyl cover for a team logo. The logo has a radius of 12 in. How many square inches of vinyl are needed to cover it?

WORK SPACE

ANSWER _____

2 A scooter wheel has a radius of 10 cm. It makes 15 full rotations without slipping. How far does the scooter travel?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A circular patch has a diameter of 20 cm. A centered circular hole with a radius of 4 cm is cut from the patch. What is the area of the patch that remains? Show the subtraction of the two circle areas.

WORK SPACE AND ANSWER

ANSWER KEY

Circle Quest

GRADE 7 · 7.GSR.5.5

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the circumference of the circle.	**10π cm**
2	Find the area of the circle.	**49π cm^2**
3	A round table has a diameter of 16 in. What is its circumference?	**16π in.**
4	A circular coaster has a radius of 6 cm. What is its area?	**36π cm^2**
5	A circle has a circumference of 18π ft. What is its radius?	**9 ft**
6	A circular pool has an area of 81π m^2. What is its diameter?	**18 m**

PART 2 · APPLY IT

1. **144π in^2** Use $A = \pi r^2$. Substitute 12 for r: $A = \pi(12)^2 = 144\pi$ in^2.
2. **300π cm** One rotation travels one circumference, $2\pi(10) = 20\pi$ cm. Multiply by 15 rotations to get 300π cm.

CHALLENGE

84π cm^2

Accept equivalent exact forms, such as $\pi(12)^2$ for 144π. Students should keep answers in terms of π unless a decimal approximation is specifically requested.