LESSON MAKER PRO

Circle Size Sleuth

Find the distance around and the space inside circles.

GRADE 7 · 7.G.4c

7.G.4c "Investigate the concept of circles. Given the formulas for circumference and area of circles, solve real-world and mathematical problems."

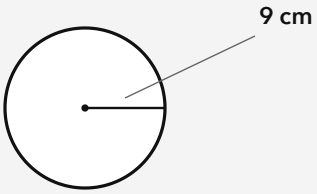
NAME _____ DATE _____

TWO CIRCLE MEASURES

The diameter goes across a circle through its center, and the radius is half the diameter. Use $C = 2\pi r$ or $C = \pi d$ for circumference, and $A = \pi r^2$ for area. Leave π in your answers to keep them exact.

WORKED EXAMPLE

Find the circumference and area of the circle shown.

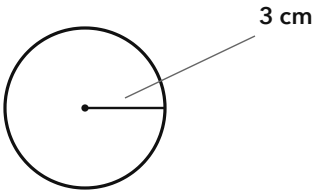


1. $C = 2\pi r = 2\pi(9) = 18\pi$ cm
2. $A = \pi r^2 = \pi(9)^2 = 81\pi$ cm^2

Answer: Circumference: 18π cm. Area: 81π cm^2.

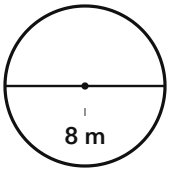
PRACTICE 6 problems

1 Find the circumference of the circle shown.



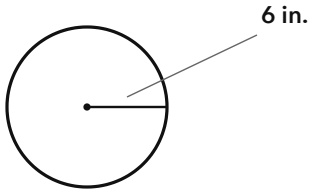
ANSWER _____

2 Find the area of the circle shown.



ANSWER _____

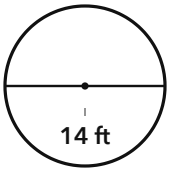
3 Find both the circumference and the area of the circle shown.



ANSWER _____

_____

4 Find both the circumference and the area of the circle shown.



ANSWER _____

_____

5 A circle has a circumference of 20π cm. What is its radius?

ANSWER _____

6 A circle has an area of 25π m^2. What is its diameter?

ANSWER _____

APPLY IT Show your work

1 You make 2 circular stickers for your laptop. Each sticker has a radius of 7 cm. What is the total area of the 2 stickers?

WORK SPACE

ANSWER _____

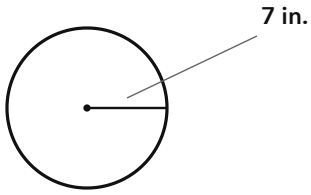
2 A bike wheel has a diameter of 28 in. How far does the bike travel when the wheel makes 5 full turns?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A second pizza has twice the radius of the pizza shown. How many times as much area does the second pizza have? Explain using the area of each pizza.



WORK SPACE AND ANSWER

ANSWER KEY

Circle Size Sleuth

GRADE 7 · 7.G.4c

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the circumference of the circle shown.	**6π cm**
2	Find the area of the circle shown.	**16π m^2**
3	Find both the circumference and the area of the circle shown.	**Circumference: 12π in. Area: 36π in^2.**
4	Find both the circumference and the area of the circle shown.	**Circumference: 14π ft. Area: 49π ft^2.**
5	A circle has a circumference of 20π cm. What is its radius?	**10 cm**
6	A circle has an area of 25π m^2. What is its diameter?	**10 m**

PART 2 · APPLY IT

1. **98π cm^2** Each sticker has an area of $\pi(7)^2 = 49\pi$ cm^2. Multiply by 2.
2. **140π in.** One turn covers the wheel's circumference, $\pi(28) = 28\pi$ in. Multiply by 5 turns.

CHALLENGE

The second pizza has 4 times the area. The pizza shown has an area of 49π in^2, and the second pizza has an area of 196π in^2.

Accept equivalent exact expressions containing π and correct units. For the challenge, accept any explanation showing that doubling the radius makes the area 4 times as large.