LESSON MAKER PRO

# Circle Math in Action

*Keep answers in terms of π and include units.*

**GRADE 7 · 7.GM.B.20.b**

**7.GM.B.20.b** "Solve area and circumference problems in real-world and mathematical situations involving circles."

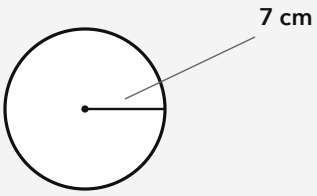
NAME _____ DATE _____

## AROUND AND INSIDE

The radius is half the diameter. Use $C = 2\pi r$ or $C = \pi d$ to find the distance around a circle, and use $A = \pi r^2$ to find the space inside it.

### WORKED EXAMPLE

Find the circumference and area of the circle shown.

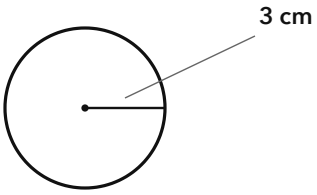



1. The radius is 7 cm.
2. $C = 2\pi r = 2\pi(7) = 14\pi$ cm.
3. $A = \pi r^2 = \pi(7)^2 = 49\pi$ cm$^2$.

**Answer: Circumference: 14π cm; area: 49π cm$^2$**

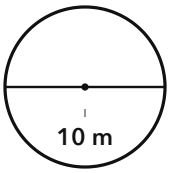
## PRACTICE 6 problems

**1** Find the area of the circle shown.



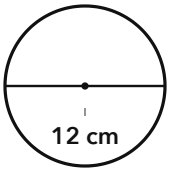

ANSWER _____

**2** Find the circumference of the circle shown.




ANSWER _____

**3** Find the area of the circle shown.




**ANSWER** _____

**4** Find the circumference of a circle with a radius of 4 in.

**ANSWER** _____

**5** A circle has a circumference of 16π ft. Find its radius.

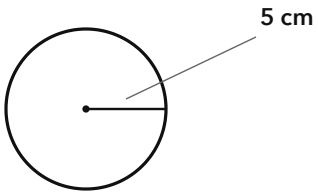
**ANSWER** _____

**6** A circle has an area of 25π $in^2$. Find its diameter.

**ANSWER** _____

## APPLY IT Show your work

**1** A game spinner has the shape and size shown. How far does a point on its edge travel in one full turn?




**ANSWER** _____

**2** A student is making a circular sticker with a diameter of 20 cm. How much paper does one sticker cover?

WORK SPACE

**ANSWER** _____

## CHALLENGE One step up

A circular garden has a radius of 6 m. A path that is 2 m wide goes all the way around it. What is the area of the path? Show how you found it.

WORK SPACE AND ANSWER

**ANSWER KEY**

# Circle Math in Action

**GRADE 7 · 7.GM.B.20.b**

## PART 1 · PRACTICE

| # | PROBLEM | ANSWER |
|---|---|---|
| 1 | Find the area of the circle shown. | **9π cm²** |
| 2 | Find the circumference of the circle shown. | **10π m** |
| 3 | Find the area of the circle shown. | **36π cm²** |
| 4 | Find the circumference of a circle with a radius of 4 in. | **8π in.** |
| 5 | A circle has a circumference of 16π ft. Find its radius. | **8 ft** |
| 6 | A circle has an area of 25π $in^2$. Find its diameter. | **10 in.** |

## PART 2 · APPLY IT

1. **10π cm** The point travels one circumference. C = 2π(5) = 10π cm.
2. **100π $cm^2$** The radius is 10 cm. A = π$(10)^2$ = 100π $cm^2$.

## CHALLENGE

**The outer radius is 6 + 2 = 8 m. Subtract the garden's area from the larger circle's area: π$(8)^2$ − π$(6)^2$ = 64π − 36π = 28π $m^2$.**

Accept equivalent expressions in terms of π with correct units. For the challenge, the student must subtract the garden's area from the area of the larger circle.