LESSON MAKER PRO

Circle Math Moves

Find exact distances and areas.

GRADE 7 · 7.GR.B.3

7.GR.B.3 "Apply the formulas for the area and circumference of a circle to solve problems in context. Use informal reasoning and visual models to explain the relationship between the circumference and area of a circle."

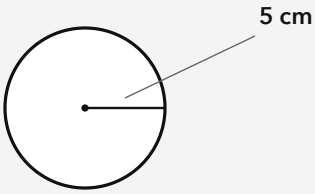
NAME _____ DATE _____

TWO CIRCLE FORMULAS

Circumference is the distance around a circle: $C = \pi d$ or $C = 2\pi r$. Area is the space inside a circle: $A = \pi r^2$. Leave π in your answers to keep them exact.

WORKED EXAMPLE

Find the circumference and area of the circle.



1. The radius is 5 cm.
2. $C = 2\pi(5) = 10\pi$ cm.
3. $A = \pi(5)^2 = 25\pi$ cm^2.

Answer: Circumference: 10π cm; area: 25π cm^2

PRACTICE 4 problems

1 Find the area of a circle with radius 3 cm.

ANSWER _____

2 Find the circumference of a circle with radius 6 m.

ANSWER _____

3 Find the circumference of a circle with diameter 8 cm.

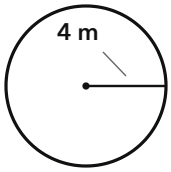
ANSWER _____

4 Find the area of a circle with diameter 12 m.

ANSWER _____

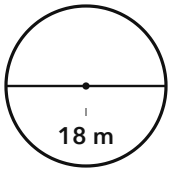
APPLY IT Show your work

1 A school dance uses the circular floor space shown. How much floor space does it use?



ANSWER _____

2 A skating route follows the edge of the circular plaza shown. How far is 3 laps?



ANSWER _____

CHALLENGE One step up

A circle's radius doubles. How do its circumference and area change? Explain using the formulas.

WORK SPACE AND ANSWER

ANSWER KEY

Circle Math Moves

GRADE 7 · 7.GR.B.3

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the area of a circle with radius 3 cm.	**9π cm^2**
2	Find the circumference of a circle with radius 6 m.	**12π m**
3	Find the circumference of a circle with diameter 8 cm.	**8π cm**
4	Find the area of a circle with diameter 12 m.	**36π m^2**

PART 2 · APPLY IT

1. **16π m^2** Use $A = \pi r^2$ with $r = 4$ m.
2. **54π m** One lap is $\pi d = 18\pi$ m. Multiply by 3 laps.

CHALLENGE

Circumference doubles because $C = 2\pi r$. Area quadruples because $A = \pi r^2$.

Accept equivalent exact forms, such as $2(8\pi)$ m^2 for 16π m^2. In the challenge, accept a numerical example that correctly shows both changes.