LESSON MAKER PRO

Circle Sense

Find distances around circles and the space inside them.

GRADE 7 · 7.G.4

7.G.4 "Investigate the concept of circles. Demonstrate an understanding of the proportional relationships between diameter, radius, and circumference of a circle..."

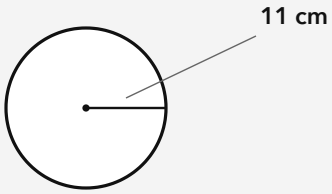
NAME _____ DATE _____

CIRCLE RULES

The diameter is twice the radius. For every circle, π is the ratio of circumference to diameter, so $C = \pi d = 2\pi r$. To find area, use $A = \pi r^2$; leave π in your answer for an exact value.

WORKED EXAMPLE

Use the circle to find its circumference and area.

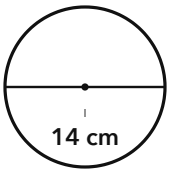


1. $d = 2r = 2(11) = 22$ cm
2. $C = \pi d = 22\pi$ cm
3. $A = \pi r^2 = \pi(11)^2 = 121\pi$ cm^2

Answer: Circumference: 22π cm; area: 121π cm^2

PRACTICE 6 problems

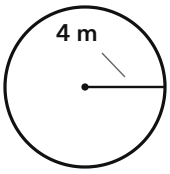
1 Use the circle to find its radius and circumference.



ANSWER _____

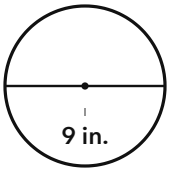
_____

2 Find the area of the circle.



ANSWER _____

3 Find the circumference of the circle.



ANSWER _____

4 A circle has a circumference of 30π cm. Find its diameter and radius.

ANSWER _____

_____

5 A circle has an area of 49π m^2. Find its radius.

ANSWER _____

6 Complete the table. Then find the ratio of circumference to diameter for either row.

TWO CIRCLES

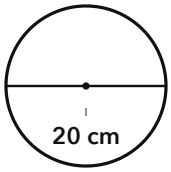
Diameter (cm)	Circumference (cm)
6	6π
18	?

ANSWER _____

_____

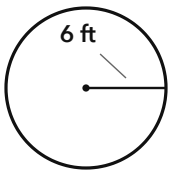
APPLY IT Show your work

1 A scooter wheel makes 5 full turns without slipping. Use the wheel's diagram to find how far the scooter moves. Give an exact answer.



ANSWER _____

2 A gaming club is making a circular floor decal. One pack of vinyl covers 12π ft^2. Use the diagram to find how many packs the club needs.



ANSWER _____

CHALLENGE One step up

A circular game mat has a radius of 7 inches. A larger mat has twice that radius. How many times as large is the larger mat's area? Show both areas to explain.

WORK SPACE AND ANSWER

ANSWER KEY

Circle Sense

GRADE 7 · 7.G.4

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Use the circle to find its radius and circumference.	**Radius: 7 cm; circumference: 14π cm**
2	Find the area of the circle.	**16π m^2**
3	Find the circumference of the circle.	**9π in.**
4	A circle has a circumference of 30π cm. Find its diameter and radius.	**Diameter: 30 cm; radius: 15 cm**
5	A circle has an area of 49π m^2. Find its radius.	**7 m**
6	Complete the table. Then find the ratio of circumference to diameter for either row.	**Missing circumference: 18π cm; ratio: π**

PART 2 · APPLY IT

1. **100π cm** One turn moves the scooter one circumference, or 20π cm. Multiply by 5 turns to get 100π cm.
2. **3 packs** The decal's area is $π(6)^2 = 36π$ ft^2. Divide by 12π ft^2 per pack to get 3 packs.

CHALLENGE

The first area is 49π $in.^2$. The larger radius is 14 inches, so its area is 196π $in.^2$. Since 196π ÷ 49π = 4, the larger mat's area is 4 times as large.

Accept equivalent exact expressions containing π and correct units. The table's ratio is π because circumference divided by diameter is π for either row.