

Circle Area Quest

Find the space inside every circle.

GRADE 7 • MA.7.GR.1.4

MA.7.GR.1.4 "Explore and apply a formula to find the area of a circle to solve mathematical and real-world problems."

NAME _____

DATE _____

AREA OF A CIRCLE

The area of a circle is the space inside it. Use $A = \pi r^2$, where r is the radius. The r^2 means $r \times r$, and use 3.14 for π in this worksheet.

WORKED EXAMPLE

Find the area of a circle with a radius of 8 cm.

1. $A = 3.14 \times 8 \times 8$

2. $8 \times 8 = 64$

3. $A = 3.14 \times 64 = 200.96$

Answer: 200.96 square cm

PRACTICE 6 problems

- 1** Find the area of a circle with a radius of 2 cm.

ANSWER _____

- 2** Find the area of a circle with a diameter of 6 inches.

ANSWER _____

- 3** Find the area of a circle with a radius of 4 yards.

ANSWER _____

- 4** Find the area of a circle with a diameter of 10 meters.

ANSWER _____

- 5** Find the area of a circle with a radius of 6 mm.

ANSWER _____

- 6** Find the area of a circle with a diameter of 18 cm.

ANSWER _____

APPLY IT Show your work

- 1** A student designs circular laptop stickers with a radius of 5 cm. They print 12 stickers. What total area of sticker material is needed?

WORK SPACE

ANSWER _____

- 2** A gaming club makes a circular profile-picture badge with a diameter of 14 cm. What area of card stock does one badge use?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A circle has an area of 314 square cm. Use 3.14 for π . What is its diameter? Explain your reasoning with calculations.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Find the area of a circle with a radius of 2 cm.	12.56 square cm
2	Find the area of a circle with a diameter of 6 inches.	28.26 square inches
3	Find the area of a circle with a radius of 4 yards.	50.24 square yards
4	Find the area of a circle with a diameter of 10 meters.	78.5 square meters
5	Find the area of a circle with a radius of 6 mm.	113.04 square mm
6	Find the area of a circle with a diameter of 18 cm.	254.34 square cm

PART 2 • APPLY IT

1. **942 square cm** One sticker has an area of $3.14 \times 5 \times 5 = 78.5$ square cm. Multiply 78.5 by 12 to get 942 square cm.
2. **153.86 square cm** The radius is $14 / 2 = 7$ cm. Use $3.14 \times 7 \times 7$ to get 153.86 square cm.

CHALLENGE

20 cm; $314 / 3.14 = 100$, so $r \times r = 100$ and $r = 10$ cm. The diameter is $2 \times 10 = 20$ cm.

Accept equivalent decimal forms such as 78.50 square meters. Students should divide a given diameter by 2 before using the area formula.