

Circle Size Sleuths

Use radius and diameter to solve circle clues.

GRADE 6 • 6.MG.1.b.i

6.MG.1.b.i "Investigate and describe the relationship between: diameter and radius;"

NAME _____

DATE _____

RADIUS AND DIAMETER

The radius goes from the center of a circle to its edge. The diameter goes across the circle through the center, so the diameter is 2 times the radius and the radius is half the diameter.

WORKED EXAMPLE

A circle has a radius of 11 cm. What is its diameter?

1. Diameter = $2 \times$ radius.
2. Diameter = 2×11 cm.
3. Diameter = 22 cm.

Answer: 22 cm

PRACTICE 6 problems

- 1** A circle has a radius of 7 cm. What is its diameter?

ANSWER _____

- 2** A circle has a diameter of 18 m. What is its radius?

ANSWER _____

- 3** A circle has a radius of $4 \frac{1}{2}$ inches. What is its diameter?

ANSWER _____

- 4** A circle has a diameter of 25 cm. What is its radius?

ANSWER _____

- 5** A circle has a radius of $\frac{3}{4}$ foot. What is its diameter?

ANSWER _____

- 6** A circle has a diameter of $1 \frac{1}{4}$ yards. What is its radius?

ANSWER _____

APPLY IT Show your work

- 1** The wheel on Maya's roller skate has a diameter of 16 cm. What is the radius of the wheel?

WORK SPACE

ANSWER _____

- 2** A circular pool float has a radius of 14 inches. What is the diameter of the float?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Circle A has a radius of 9 cm. Circle B has a diameter of 24 cm. Which circle has the greater diameter? How much greater is it? Explain your reasoning.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A circle has a radius of 7 cm. What is its diameter?	14 cm
2	A circle has a diameter of 18 m. What is its radius?	9 m
3	A circle has a radius of 4 $\frac{1}{2}$ inches. What is its diameter?	9 inches
4	A circle has a diameter of 25 cm. What is its radius?	12 $\frac{1}{2}$ cm
5	A circle has a radius of $\frac{3}{4}$ foot. What is its diameter?	1 $\frac{1}{2}$ feet
6	A circle has a diameter of 1 $\frac{1}{4}$ yards. What is its radius?	$\frac{5}{8}$ yard

PART 2 • APPLY IT

1. **8 cm** The radius is half the diameter. Divide 16 cm by 2 to get 8 cm.
2. **28 inches** The diameter is 2 times the radius. Multiply 14 inches by 2 to get 28 inches.

CHALLENGE

Circle B. Circle A has a diameter of 18 cm, so Circle B's diameter is 6 cm greater.

Accept equivalent fraction forms, such as $\frac{3}{2}$ for $1 \frac{1}{2}$. Students should show that they doubled a radius or halved a diameter.