

Circle Around

Use diameter to find the distance around a circle.

GRADE 6 • 6.MG.1.b.iii

6.MG.1.b.iii "Investigate and describe the relationship between: diameter and circumference."

NAME _____

DATE _____

DIAMETER AND CIRCUMFERENCE

Circumference is the distance around a circle. Multiply the diameter by pi to find circumference: $C = \pi \cdot d$. Since $C/d = \pi$ for every circle, doubling the diameter doubles the circumference.

WORKED EXAMPLE

A circle has a diameter of 8 cm.
Find its circumference in terms of pi.

1. $C = \pi \cdot d$
2. $C = \pi \cdot 8$
3. $C = 8\pi$ cm

Answer: 8π cm

PRACTICE 6 problems

- 1** A circle has a diameter of 12 cm. Find its circumference in terms of pi.

ANSWER _____

- 2** A circle has a diameter of 15 m. Find its circumference in terms of pi.

ANSWER _____

- 3** A circle has a circumference of 36π inches. Find its diameter.

ANSWER _____

- 4** A circle has a circumference of 25π cm. Find its diameter.

ANSWER _____

- 5** Circle A has a diameter of 9 cm. Circle B has twice Circle A's diameter. Find Circle B's circumference in terms of pi.

ANSWER _____

- 6** A circle has a circumference of 42π feet. Find its diameter.

ANSWER _____

APPLY IT Show your work

- 1** A robotics club is making a round sign with a diameter of 21 cm. Use $\pi = \frac{22}{7}$. What is the distance around the edge of the sign?

WORK SPACE

ANSWER _____

- 2** The rim of a circular basketball hoop has a circumference of 31.4 inches. Use $\pi = 3.14$. What is the hoop's diameter?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Circle A has a diameter of 24 cm. Circle B's diameter is $\frac{3}{4}$ of Circle A's diameter. Find Circle B's circumference in terms of π . Explain your reasoning.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A circle has a diameter of 12 cm. Find its circumference in terms of pi.	12pi cm
2	A circle has a diameter of 15 m. Find its circumference in terms of pi.	15pi m
3	A circle has a circumference of 36pi inches. Find its diameter.	36 inches
4	A circle has a circumference of 25pi cm. Find its diameter.	25 cm
5	Circle A has a diameter of 9 cm. Circle B has twice Circle A's diameter. Find Circle B's circumference in terms of pi.	18pi cm
6	A circle has a circumference of 42pi feet. Find its diameter.	42 feet

PART 2 • APPLY IT

1. **66 cm** Use $C = \pi \cdot d$. Multiply 22/7 by 21 to get 66 cm.
2. **10 inches** Use $d = C/\pi$. Divide 31.4 by 3.14 to get 10 inches.

CHALLENGE

18pi cm. Circle B's diameter is 3/4 of 24 cm, which is 18 cm. Its circumference is $\pi \cdot 18$, or 18pi cm.

Accept equivalent multiplication forms such as $\pi \cdot 12$ for 12pi. For answers stated in terms of pi, do not require a decimal approximation.