LESSON MAKER PRO

Circle Connections

Use diameter to make sense of circumference.

GRADE 7 · 7.G.4b

7.G.4b "Investigate the concept of circles. Understand that π is defined by the constant of proportionality between the circumference and diameter."

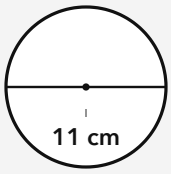
NAME _____ DATE _____

THE CIRCLE RULE

For every circle, circumference divided by diameter equals π, so $C/d = \pi$. To find a circumference, multiply the diameter by π. If you know the radius, double it to get the diameter.

WORKED EXAMPLE

Find the circumference of the circle shown. Give your answer in terms of π.

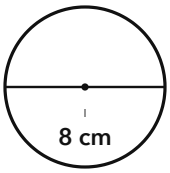


1. $C/d = \pi$
2. $C = \pi \times d$
3. $C = \pi \times 11 = 11\pi$ cm

Answer: 11π cm

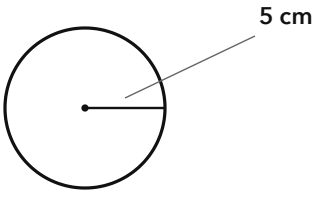
PRACTICE 6 problems

1 Find the circumference of the circle shown. Give your answer in terms of π.



ANSWER _____

2 Find the circumference of the circle shown. Give your answer in terms of π.



ANSWER _____

3 A circle has a circumference of 14π cm. What is its diameter?

ANSWER _____

4 A circle has a circumference of 18π m. What is its radius?

ANSWER _____

5 For each circle in the table, find C/d. What do you notice?

CIRCLE MEASUREMENTS

Circle	Diameter (cm)	Circumference (cm)
A	4	4π
B	12	12π

ANSWER _____

_____

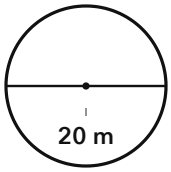
6 One circle has a diameter of 15 cm. Another has a diameter of 45 cm. How many times as large is the second circumference? Explain using $C = \pi d$.

ANSWER _____

_____

APPLY IT Show your work

1 You skate 3 laps around the edge of the circular path shown. How far do you skate? Give your answer in terms of π.



ANSWER _____

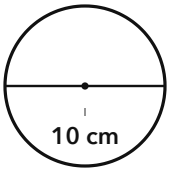
2 A bike wheel has a diameter of 60 cm. If it rolls 300π cm without slipping, how many full turns does it make?

WORK SPACE

ANSWER _____

CHALLENGE One step up

A second circle has a diameter 3 times the diameter of the circle shown. What is the second circle's circumference? Explain why C/d is still π.



WORK SPACE AND ANSWER

ANSWER KEY

Circle Connections

GRADE 7 · 7.G.4b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the circumference of the circle shown. Give your answer in terms of π.	**8π cm**
2	Find the circumference of the circle shown. Give your answer in terms of π.	**10π cm**
3	A circle has a circumference of 14π cm. What is its diameter?	**14 cm**
4	A circle has a circumference of 18π m. What is its radius?	**9 m**
5	For each circle in the table, find C/d. What do you notice?	**A: π; B: π. The ratio C/d is the same for both circles.**
6	One circle has a diameter of 15 cm. Another has a diameter of 45 cm. How many times as large is the second circumference? Explain using C = πd.	**3 times as large. The circumferences are 15π cm and 45π cm, and 45π/15π = 3.**

PART 2 · APPLY IT

1. **60π m** One lap is 20π m. Multiply by 3 laps to get 60π m.
2. **5 full turns** Each full turn moves the bike 60π cm. Divide 300π by 60π to get 5 turns.

CHALLENGE

The second diameter is 30 cm, so its circumference is 30π cm. Its ratio is C/d = 30π/30 = π.

Accept equivalent exact expressions, such as π × 8 cm for 8π cm. Do not require decimal approximations of π.