LESSON MAKER PRO

Circle Connection

Use radius to find and compare circumference.

GRADE 6 · 6.MG.1.b.ii

6.MG.1.b.ii "Investigate and describe the relationship between: radius and circumference; and"

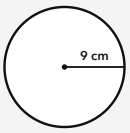
NAME _____ DATE _____

RADIUS AND CIRCUMFERENCE

A circle's circumference is C = 2πr, where r is the radius. When the radius is multiplied by a factor, the circumference is multiplied by that same factor.

WORKED EXAMPLE

Find the circumference of the circle shown in terms of π.

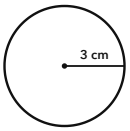


1. Use C = 2πr.
2. Substitute 9 for r: C = 2π(9).
3. Multiply: C = 18π cm.

Answer: 18π cm

PRACTICE 6 problems

1 Find the circumference of the circle shown in terms of π.



ANSWER _____

2 A circle has a radius of 7 cm. Find its circumference in terms of π.

ANSWER _____

3 A circle has a diameter of 16 cm. Find its radius and its circumference in terms of π.

ANSWER _____

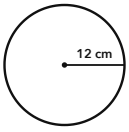
4 A circle has a circumference of 20π cm. What is its radius?

ANSWER _____

5 Circle P has a radius of 2 cm. Circle Q has a radius of 5 cm. How much greater is the circumference of Circle Q than Circle P? Write your answer in terms of π.

ANSWER _____

6 Use π ≈ 3.14. Find the circumference of the circle shown.



ANSWER _____

APPLY IT Show your work

1 A skateboard wheel has a radius of 5 cm. Use π ≈ 3.14. How far does the wheel travel in one complete rotation?

WORK SPACE

ANSWER _____

2 A robotics team is making a circular cover with a circumference of 28π cm. The material has a radius of 15 cm. What radius will the cover have, and will it fit on the material?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Circle A has a radius of 4 cm. Circle B has a radius of 12 cm. Find each circumference in terms of π. Then explain how the change in radius affects the circumference.

WORK SPACE AND ANSWER

ANSWER KEY

Circle Connection

GRADE 6 · 6.MG.1.b.ii

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the circumference of the circle shown in terms of π.	**6π cm**
2	A circle has a radius of 7 cm. Find its circumference in terms of π.	**14π cm**
3	A circle has a diameter of 16 cm. Find its radius and its circumference in terms of π.	**Radius: 8 cm; circumference: 16π cm**
4	A circle has a circumference of 20π cm. What is its radius?	**10 cm**
5	Circle P has a radius of 2 cm. Circle Q has a radius of 5 cm. How much greater is the circumference of Circle Q than Circle P? Write your answer in terms of π.	**6π cm**
6	Use π ≈ 3.14. Find the circumference of the circle shown.	**75.36 cm**

PART 2 · APPLY IT

1. **31.4 cm** One complete rotation is one circumference. Compute C = 2(3.14)(5) = 31.4 cm.
2. **The cover has a radius of 14 cm, so it will fit on the material.** Use 28π = 2πr, so r = 14 cm. Since 14 cm is less than 15 cm, the cover fits.

CHALLENGE

Circle A: 8π cm. Circle B: 24π cm. Circle B has 3 times the radius of Circle A, so it has 3 times the circumference.

Accept equivalent forms such as π(14) for 14π. For the decimal problem and skateboard problem, accept 75.36 cm and 31.4 cm only when π is approximated as 3.14.