LESSON MAKER PRO

Circle Size Secrets

Use diameter to predict distance around a circle.

GRADE 7 · 7.GM.3.2

7.GM.3.2 "Demonstrate an understanding of the proportional relationship between the diameter and circumference of a circle and that the unit rate (constant of proportionality) is pi (π) and can be approximated by rational numbers such as 22/7 and..."

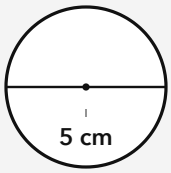
NAME _____ DATE _____

THE CIRCLE RULE

For every circle, circumference divided by diameter is π. To find the distance around a circle, use C = πd. You can use 3.14 or 22/7 to approximate π.

WORKED EXAMPLE

Find the circumference of the circle. Use 3.14 for π.

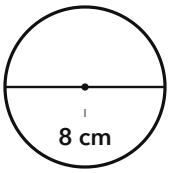


1. C = πd
2. C ≈ 3.14 × 5
3. C ≈ 15.7 cm

Answer: 15.7 cm

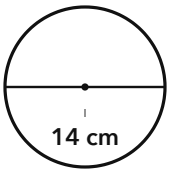
PRACTICE 6 problems

1 Find the circumference of the circle. Use 3.14 for π.



ANSWER _____

2 Find the circumference of the circle. Use 22/7 for π.

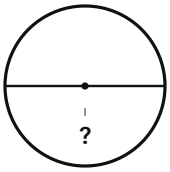


ANSWER _____

3 A circle has a diameter of 12 m. Find its circumference. Use 3.14 for π.

ANSWER _____

4 The circle shown has a circumference of 62.8 cm. Find the diameter marked ?. Use 3.14 for π.



ANSWER _____

5 Complete the table using 3.14 for π. Then find the unit rate, circumference divided by diameter.

CIRCLE MEASUREMENTS

Diameter (cm)	Circumference (cm)
2	6.28
4	12.56
6	?

ANSWER _____

_____

6 A circle's diameter grows from 9 cm to 18 cm. By what factor does its circumference grow? Explain using C = πd.

ANSWER _____

_____

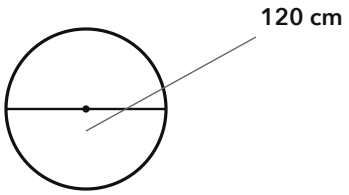
APPLY IT Show your work

1 A skateboard wheel has a diameter of 56 mm. It makes 10 full turns without slipping. How far does the board roll? Use 22/7 for π.

WORK SPACE

ANSWER _____

2 You want to put an LED strip around the edge of this circular gaming table. How many centimeters of strip do you need? Use 3.14 for π.



ANSWER _____

CHALLENGE One step up

Two circular running paths have diameters of 28 m and 42 m. How much farther is one lap on the larger path? Use 22/7 for π, and explain how you can use the difference between the diameters.

WORK SPACE AND ANSWER

ANSWER KEY

Circle Size Secrets

GRADE 7 · 7.GM.3.2

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the circumference of the circle. Use 3.14 for π.	**25.12 cm**
2	Find the circumference of the circle. Use 22/7 for π.	**44 cm**
3	A circle has a diameter of 12 m. Find its circumference. Use 3.14 for π.	**37.68 m**
4	The circle shown has a circumference of 62.8 cm. Find the diameter marked ?. Use 3.14 for π.	**20 cm**
5	Complete the table using 3.14 for π. Then find the unit rate, circumference divided by diameter.	**18.84 cm; unit rate: 3.14**
6	A circle's diameter grows from 9 cm to 18 cm. By what factor does its circumference grow? Explain using C = πd.	**Factor of 2. The diameter doubles, so πd doubles.**

PART 2 · APPLY IT

1. **1,760 mm** One turn moves the board one wheel circumference: (22/7) × 56 = 176 mm. For 10 turns, 176 × 10 = 1,760 mm.
2. **376.8 cm** The strip goes around the circumference. Calculate 3.14 × 120 = 376.8 cm.

CHALLENGE

44 m. The diameters differ by 14 m, so the circumferences differ by (22/7) × 14 = 44 m.

Accept equivalent units, such as 1.76 m for the skateboard distance. In explanations, accept any clear statement that circumference changes in the same proportion as diameter.