LESSON MAKER PRO

Circle Calculations

Find distances around circles and areas inside them.

HIGH SCHOOL · G.C.1.1

G.C.1.1 "Apply the properties of circles to solve problems involving circumference and area, using approximate values and in terms of pi, using algebraic and logical reasoning."

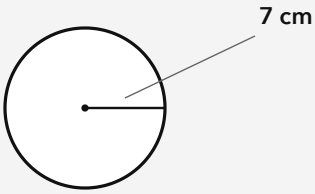
NAME _____ **DATE** _____

TWO CIRCLE RULES

Circumference is the distance around a circle: C = 2pi r or C = pi d. Area is the space inside: A = pi r^2. Use 3.14 for pi when an estimate is requested.

WORKED EXAMPLE

Find the area of the circle in terms of pi and using 3.14.



1. A = pi r^2
2. A = pi$(7)^2$ = 49pi cm^2
3. 49(3.14) = 153.86 cm^2

Answer: 49pi cm^2; about 153.86 cm^2

PRACTICE 4 problems

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

ANSWER _____

2 A circle has a radius of 5 cm. Find its area in terms of pi.

ANSWER _____

3 A circle has a diameter of 20 ft. Find its area in terms of pi.

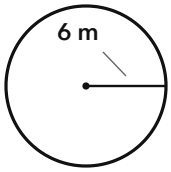
ANSWER _____

4 A circle has a radius of 9 mm. Estimate its circumference using 3.14.

ANSWER _____

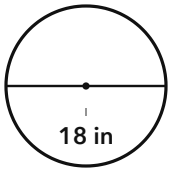
APPLY IT Show your work

1 At a school concert, LED tape goes around the circular stage shown. How much tape is needed? Give an exact answer and an estimate using 3.14.



ANSWER _____

2 A café sells the round pizza shown. What is its area? Give an exact answer and an estimate using 3.14.



ANSWER _____

CHALLENGE One step up

A circular mural has an area of 144π ft^2. Find its circumference in terms of pi. Explain how you found it.

WORK SPACE AND ANSWER

ANSWER KEY

Circle Calculations

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A circle has a diameter of 8 m. Find its circumference in terms of pi.	**8pi m**
2	A circle has a radius of 5 cm. Find its area in terms of pi.	**25pi cm^2**
3	A circle has a diameter of 20 ft. Find its area in terms of pi.	**100pi ft^2**
4	A circle has a radius of 9 mm. Estimate its circumference using 3.14.	**56.52 mm**

PART 2 · APPLY IT

1. **12pi m; about 37.68 m** Use C = 2pi r to get 12pi m. Then calculate 12(3.14) = 37.68 m.
2. **81pi in^2; about 254.34 in^2** Half the diameter gives a radius of 9 in. Use A = pi r^2, then calculate 81(3.14) = 254.34.

CHALLENGE

24pi ft. Since pi r^2 = 144pi, the radius is 12 ft, so C = 2pi(12) = 24pi ft.

Accept equivalent exact forms, such as pi × 8 m. Estimates use 3.14 for pi.