Area of Circles Introduction

Introduction to circle area: Applications and decisions

Name _____ **Date** _____ **Score** _____ / 6

QUICK REVIEW

Circle area is $A = \pi r^2$. The radius goes from center to edge; diameter $d = 2r$. Use $\pi \approx 3.14$ here. Doubling radius multiplies area by 4, not 2. A length times a length gives square units. Sketches are not to scale.

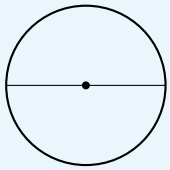
Worked example

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

1. Radius is half the diameter: $r = 7/2 = \frac{7}{2}$ cm.

2. $A \approx 3.14 \times \frac{7}{2}^2 = 3.14 \times \frac{49}{4} = \frac{7693}{200}$ cm^2.

Answer: Approximately 38.465 cm^2.

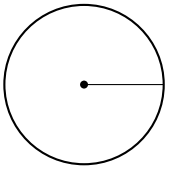


$d = 7$ cm

Practice Problems

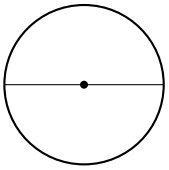
Show your thinking.

1. Find material area for a circular mat. Use 3.14 for π.



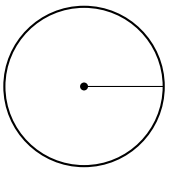
$r = 8$ cm

2. A round tabletop is measured across its center. Find area to cover. Use 3.14 for π.



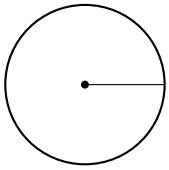
$d = 10$ cm

3. Design the radius of a circular label with the stated area. Area is approximately $\frac{1413}{50}$ cm^2 using 3.14 for π; find radius. Use 3.14 for π.



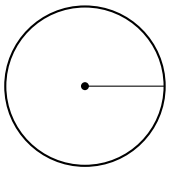
r cm

4. A proposed area is 37.68 square cm. Correct the circular-sign label. Use 3.14 for π.



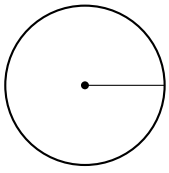
$r = 6$ cm

5. Recover a circular garden radius from its area. Area is approximately $\frac{12717}{50}$ cm^2 using 3.14 for π; find radius. Use 3.14 for π.



r cm

6. Find circle area and compare it with a 55-square-cm material allowance. Use 3.14 for π.



$r = 4$ cm

Answer Key

1. Approximately 200.96 cm^2.
2. Approximately 78.5 cm^2.
3. 3 cm.
4. Approximately 113.04 cm^2.
5. 9 cm.
6. Approximately 50.24 cm^2. Enough by area, with 4.76 cm^2 extra.

Step-by-Step Solutions

Follow each calculation, then check your own work.

Problem 1

1. Square the radius: $8^2 = 64$ cm^2.
2. $A \approx 3.14 \times 64 = \frac{5024}{25}$ cm^2.

Problem 2

1. Radius is half the diameter: $r = 10/2 = 5$ cm.
2. $A \approx 3.14 \times 5^2 = 3.14 \times 25 = \frac{157}{2}$ cm^2.

Problem 3

1. $r^2 = \frac{1413}{50}/3.14 = 9$.
2. The nonnegative radius is 3 cm because $3 \times 3 = 9$.

Problem 4

1. Square the radius: $6^2 = 36$ cm^2.
2. $A \approx 3.14 \times 36 = \frac{2826}{25}$ cm^2.

Problem 5

1. $r^2 = \frac{12717}{50}/3.14 = 81$.
2. The nonnegative radius is 9 cm because $9 \times 9 = 81$.

Problem 6

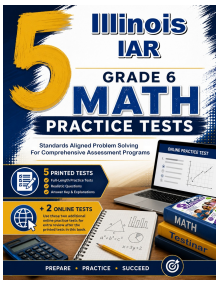
1. Square the radius: $4^2 = 16$ cm^2.
2. $A \approx 3.14 \times 16 = \frac{1256}{25}$ cm^2.
3. $55 - 50.24 = 4.76$ cm^2 remains; this area check does not prove a particular shape will fit.

TESTINAR

Keep Building Grade 6 Math Skills

Choose the practice book matched to your state assessment and turn worksheet practice into a complete test-prep plan.

All Grade 6 books



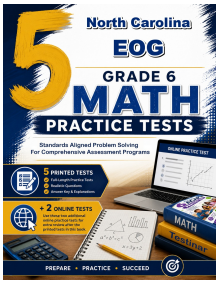
ILLINOIS IAR

5 Full-Length Math Practice Tests

Build Grade 6 accuracy, confidence, and test stamina with 5 printable practice tests.

Printable eBook • Instant PDF access

View eBook



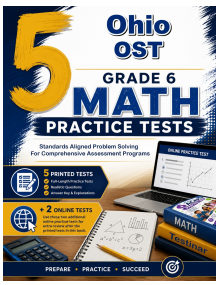
NORTH CAROLINA EOG

5 Full-Length Math Practice Tests

Build Grade 6 accuracy, confidence, and test stamina with 5 printable practice tests.

Printable eBook • Instant PDF access

View eBook



OHIO OST

5 Full-Length Math Practice Tests

Build Grade 6 accuracy, confidence, and test stamina with 5 printable practice tests.

Printable eBook • Instant PDF access

View eBook

Need a different state?
Testinar has Grade 6 math practice books for state assessments across the country.

TESTINAR.COM/GRADES/6