MATHEMATICS · GRADES 7-9

# Circumference and Circle Area

### Difficulty level: Intermediate

### Mathematics: Grades 7-9

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## *Overview of the concept*

This is how you work out how much fencing a circular garden needs and how much grass seed covers the ground inside it. You only need the radius to find both, the fence from the distance around and the seed from the area inside. It is the circle version of measuring a garden, and it stops you from buying too much or too little of either.



## *Rule*

### Circumference: C = 2 × pi × r.

Area: A = pi × $r^2$. The circumference is the distance around the circle and the area is the surface inside it. Both come from the radius, r, and pi.

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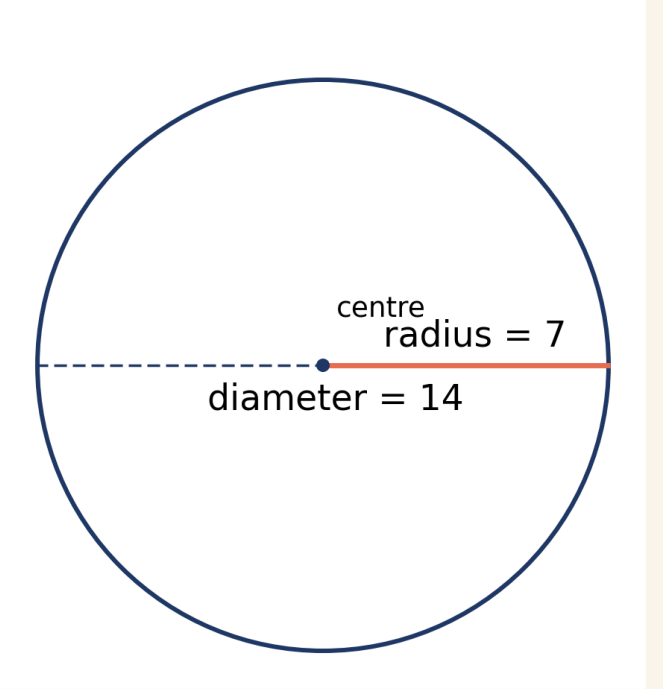
## Worked examples

EXAMPLE 1

**Q** Find the circumference of a circle with radius 7 cm, using pi = $\frac{22}{7}$




### SOLUTION

Circumference = 2 × pi × radius

$2 \times (\frac{22}{7}) \times 7 = 44$

The circumference is 44 cm.

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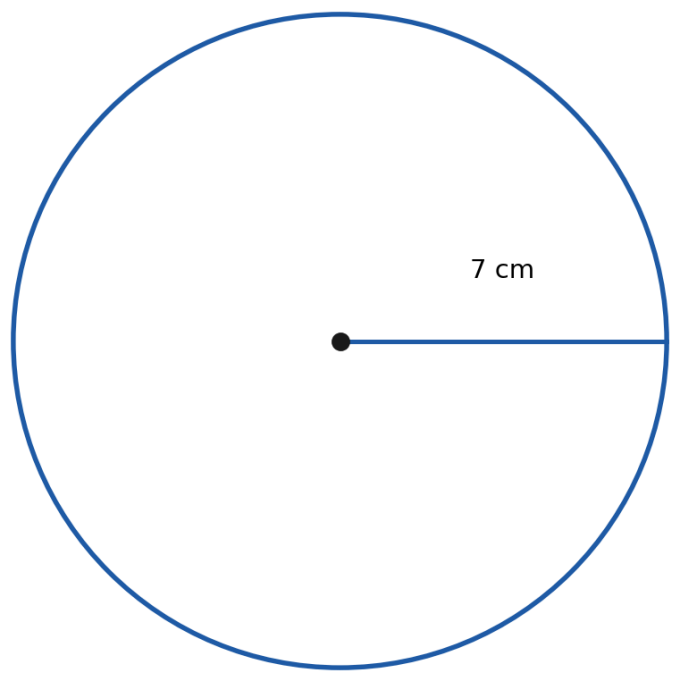
EXAMPLE 2

**Q** Find the area of a circle with radius 7 cm, using pi = $\frac{22}{7}$




**SOLUTION**

Area = pi × radius$^2$

$(\frac{22}{7}) \times 49 = 154$

The area is 154 cm$^2$.

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## Practice questions

**1** A circle has radius 14 cm. Find its circumference, using pi $= \frac{22}{7}$

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**2** A circle has radius 14 cm. Find its area, using pi $= \frac{22}{7}$

A. 88 cm²

B. 308 cm²

C. 616 cm²

D. 1232 cm²

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**3** A circle has radius 5 cm. How far is it around the edge? Use pi = 3.14

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**4** A circle has radius 10 cm. What is its area? Use pi = 3.14

A. 31.4 $cm^2$

B. 62.8 $cm^2$

C. 314 $cm^2$

D. 628 $cm^2$

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**5** A circle has radius 35 cm. How far is it around the edge? Use pi = $\frac{22}{7}$

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**6** A circle has radius 35 cm. What is its area? Use pi = $\frac{22}{7}$

A. 220 cm²

B. 1925 cm²

C. 3850 cm²

D. 7700 cm²

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**7** A circle has radius 21 cm. Find its circumference, using pi = $\frac{22}{7}$

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**8** A circle has radius 21 cm. What is its area? Use pi = $\frac{22}{7}$

A. 132 cm²

B. 693 cm²

C. 1386 cm²

D. 2772 cm²

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**9** A circle has radius 1 cm. How far is it around the edge? Give the answer to 2 decimal places. Use pi = 3.14

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**10** A circle has radius 1 cm. What is its area? Use pi = 3.14

A. 1.57 $cm^2$

B. 3.14 $cm^2$

C. 6.28 $cm^2$

D. 12.56 $cm^2$

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## ANSWER KEY

**1.** 88 cm

**2.** 616 $cm^2$

**3.** 31.4 cm

**4.** 314 $cm^2$

**5.** 220 cm

**6.** 3850 $cm^2$

**7.** 132 cm

**8.** 1386 $cm^2$

**9.** 6.28 cm

**10.** 3.14 $cm^2$

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