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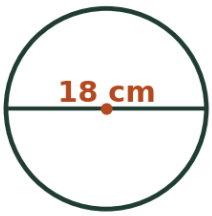
Area and Circumference of Circles

Grade 3 topic · Foundation and Higher · Edexcel and AQA

How to use this pack
20 questions that get harder as you go. Foundation students: aim for Questions 1–15 (47 marks) and have a go at the rest. Higher students: complete all 20. Show your working on the lines and write your final answer on the answer line, then mark yourself with the answers at the back. Diagrams are not drawn accurately. Total: 72 marks.

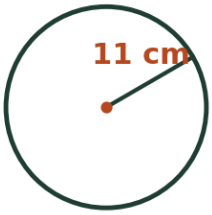
Warm-up

1 A circle has diameter 18 cm. Work out its circumference. Give your answer in terms of π. **[2 marks]**



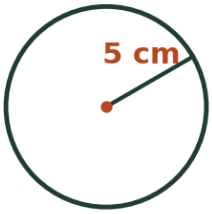
Answer _____

2 A circle has radius 11 cm. Work out its area. Give your answer in terms of π. **[2 marks]**



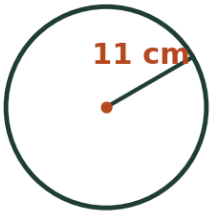
Answer _____

3 A circle has radius 5 cm. Work out its circumference. Give your answer to 3 significant figures. **[2 marks]**



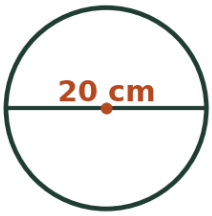
Answer _____

4 A circle has radius 11 cm. Work out its area to 3 significant figures. **[2 marks]**



Answer _____

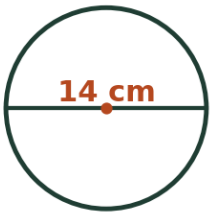
5 A circle has diameter 20 cm. Work out its area to 3 significant figures. **[3 marks]**



Answer _____

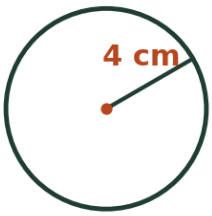
Core

6 Work out the perimeter of a semicircle of diameter 14 cm. Give your answer to 3 significant figures. **[3 marks]**



Answer _____

7 Work out the area of a semicircle of radius 4 cm. Give your answer in terms of π. **[3 marks]**



Answer _____

8 Work out the area of a quarter circle of radius 10 cm. Give your answer in terms of π. **[3 marks]**

Answer _____

9 The circumference of a circle is 12π cm. Work out its radius. **[3 marks]**

Answer _____

10 A wheel has diameter 120 cm. How far does it travel in 12 complete turns? Give your answer in metres to 3 significant figures. **[4 marks]**

Answer _____

Stretch

11 A circular pond of radius 6 m has a circular island of radius 4 m in the middle. Work out the area of water. Give your answer in terms of π. **[4 marks]**

Answer _____

12 A circle has area 25π cm². Work out its circumference in terms of π. **[4 marks]**

Answer _____

13 A bicycle wheel has diameter 80 cm. How many complete turns does it make in 79 m? **[4 marks]**

Answer _____

14 A circle has circumference 29 cm. Work out its radius to 3 significant figures. **[4 marks]**

Answer _____

15 A circle has area 171 cm². Work out its radius to 3 significant figures. **[4 marks]**

Answer _____

Challenge

16 A window is a rectangle 10 m wide and 7 m high with a semicircle on top (diameter 10 m). Work out the total area to 3 significant figures. **[5 marks]**

Answer _____

17 A window is a rectangle 6 m wide and 7 m high with a semicircle on top (diameter 6 m). Work out the perimeter of the whole window (not including the bottom edge) to 3 significant figures. **[5 marks]**

Answer _____

18 A circle of the largest possible size is cut from a square of side 8 cm. Work out the area of the square that is left. Give your answer to 3 significant figures. **[5 marks]**

Answer _____

19 A sector of a circle has radius 8 cm and angle 60°. Work out its area to 3 significant figures. **[5 marks]**

Answer _____

20 A running track has two straight sides each 100 m long and two semicircular ends of diameter 60 m. Work out the total length of the track to 3 significant figures. **[5 marks]**

Answer _____