

Name:

Date:

Circles (Area and Circumference)

GCSE

Edexcel
Mathematics
Grade (9-1)

Mark

Score (%)

— 64

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Materials

For this paper you must have:

- Ruler
- Pencil, Rubber, Protractor and Compass
- Scientific calculator, which you are expected to use when appropriate

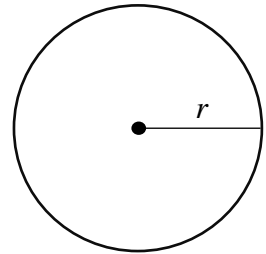
Instructions

- Answer all questions
- Answer questions in the space provided
- All working must be shown
- Do all rough work in this book. Cross out any rough work you don't want to be marked

Information

- The marks for the questions are shown in brackets

- 1 Given that $r = 5$ cm, find the area of the circle.
Give your answer in terms of π .

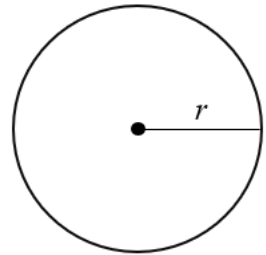


Leave
blank

..... cm^2

(Total for question 1 is 3 marks)

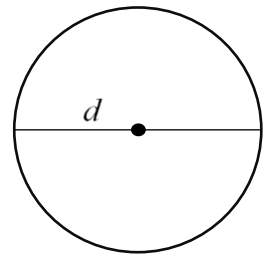
- 2 Given that $r = 2.8$ m, find the circumference of the circle.
Give your answer correct to 1 decimal place.



..... m

(Total for question 2 is 3 marks)

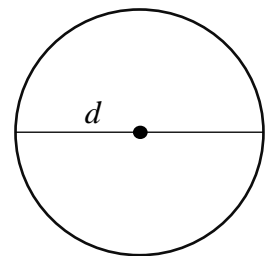
- 3 The diameter, d , of a circle is 12 m.
Work out the circumference of the circle.
Give your answer to 3 significant figures.



..... cm

(Total for question 3 is 3 marks)

- 4 The diameter, d , of a circle is 4.8 cm.
Work out its area correct to the nearest cm^2 .

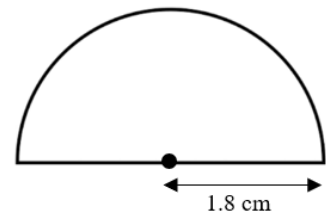


..... cm^2

(Total for question 4 is 3 marks)

Leave blank

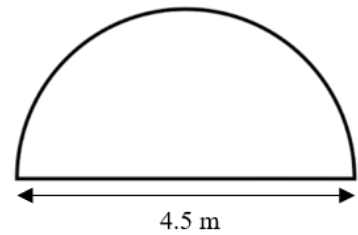
5 Work out the area of the semicircle with radius 1.8 cm.
Give your answer to 3 significant figures.



..... m²

(Total for question 7 is 3 marks)

6 Work out the perimeter of the semicircle shown.
Give your answer correct to 1 decimal place.



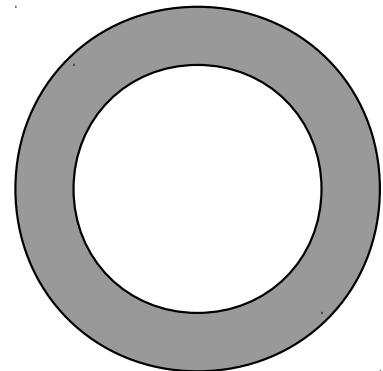
..... cm

(Total for question 8 is 3 marks)

7 The diagram shows a shaded ring formed by cutting a smaller circle out of a larger circle.

The radius of the smaller circle is 12 cm.
The diameter of the larger circle is 30 cm.

Find the area of the shaded ring.



..... cm²

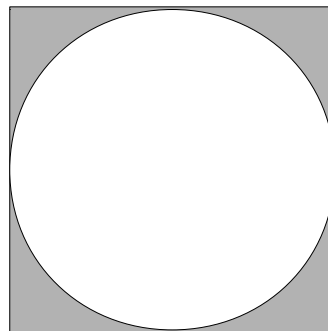
(Total for question 8 is 4 marks)

8 A circle is enclosed by a square as shown in the diagram.

Each side of the square measures 10cm.

Find the area of the shaded region.

Give your answer correct to 1 decimal place.



..... cm²

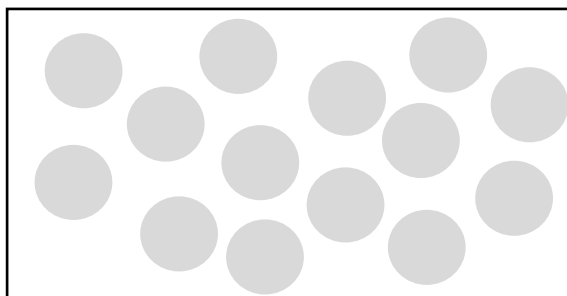
(Total for question 8 is 4 marks)

9 Aimen is painting circles on a wall.
She paints 14 identical circles as shown.

Each circle has a radius of 0.7 m.

Work out the area, in m², that she paints on the wall.

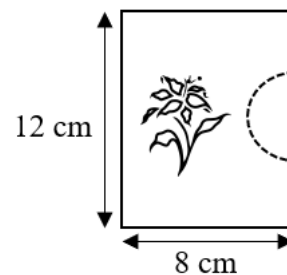
Give your answer correct to 2 decimal places.



..... m²

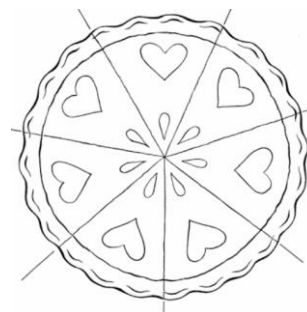
(Total for question 9 is 4 marks)

- 10** Sam is making a card.
She cuts the semicircle with radius 2 cm on the side along the dotted line.
Work out the perimeter of the front of the card.
Give your answer to 1 decimal place.



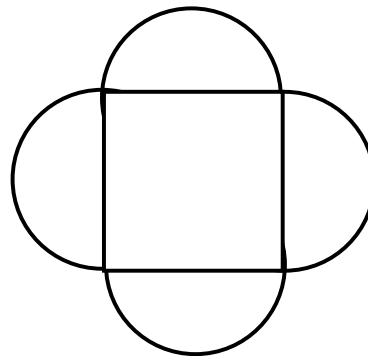
..... cm
(Total for question 10 is 4 marks)

- 11** A pie is cut into 7 equal pieces.
The diameter of the pie is 14 cm.
Find the perimeter of each piece of pie.
Give your answer to 1 decimal place.



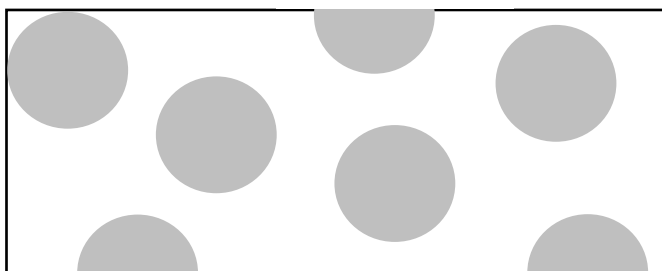
..... cm
(Total for question 11 is 5 marks)

12 A pattern is made using 5 tiles as shown.
 The area of the square tile is 4 cm^2 .
 Work out the total area of the tiles.
 Give your answer correct to 1 decimal place.



..... cm^2
(Total for question 12 is 4 marks)

13 Sara paints a pattern on a wall made up of semicircles and circles as shown.



The semicircles and the circle both have a radius of 6 cm.
 The cost of painting each cm^2 is £2.50.

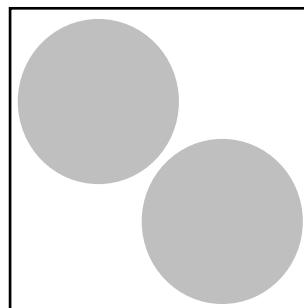
Work out the cost of painting the figure shown.
 Give your answer correct to the nearest cent.

£.....
(Total for question 13 is 5 marks)

14 Jenny owns a square field.

The sprinklers in the field can only spray the field in circles with diameter 5m.
She installs 2 sprinklers and only plants seeds in the area covered by sprinklers.

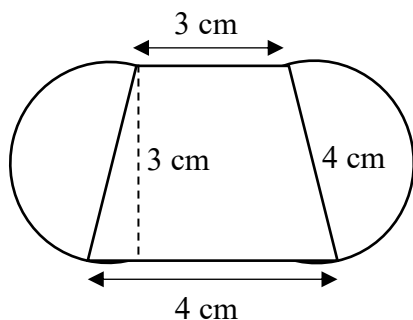
The cost of planting seeds per m^2 is £6.
Work out the total cost planting seeds.
Give your answer correct to the nearest dollar.



£.....

(Total for question 14 is 5 marks)

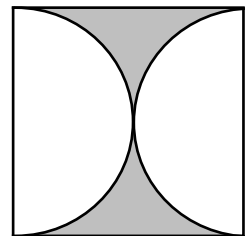
15 Work out the perimeter of the following pattern.
Give your answer to 2 decimal places.



..... cm

(Total for question 15 is 5 marks)

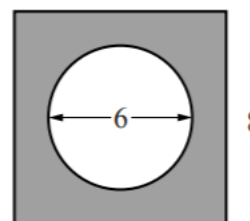
16 The length of each side of the square is 4 cm.
Find the shaded area and give your answer in terms of π .



..... cm^2

(Total for question 16 is 3 marks)

17 A circle of diameter 6 cm is cut from a square of side 8 cm.
Find an expression, in terms of π , for the shaded area



..... cm^2

(Total for question 17 is 3 marks)