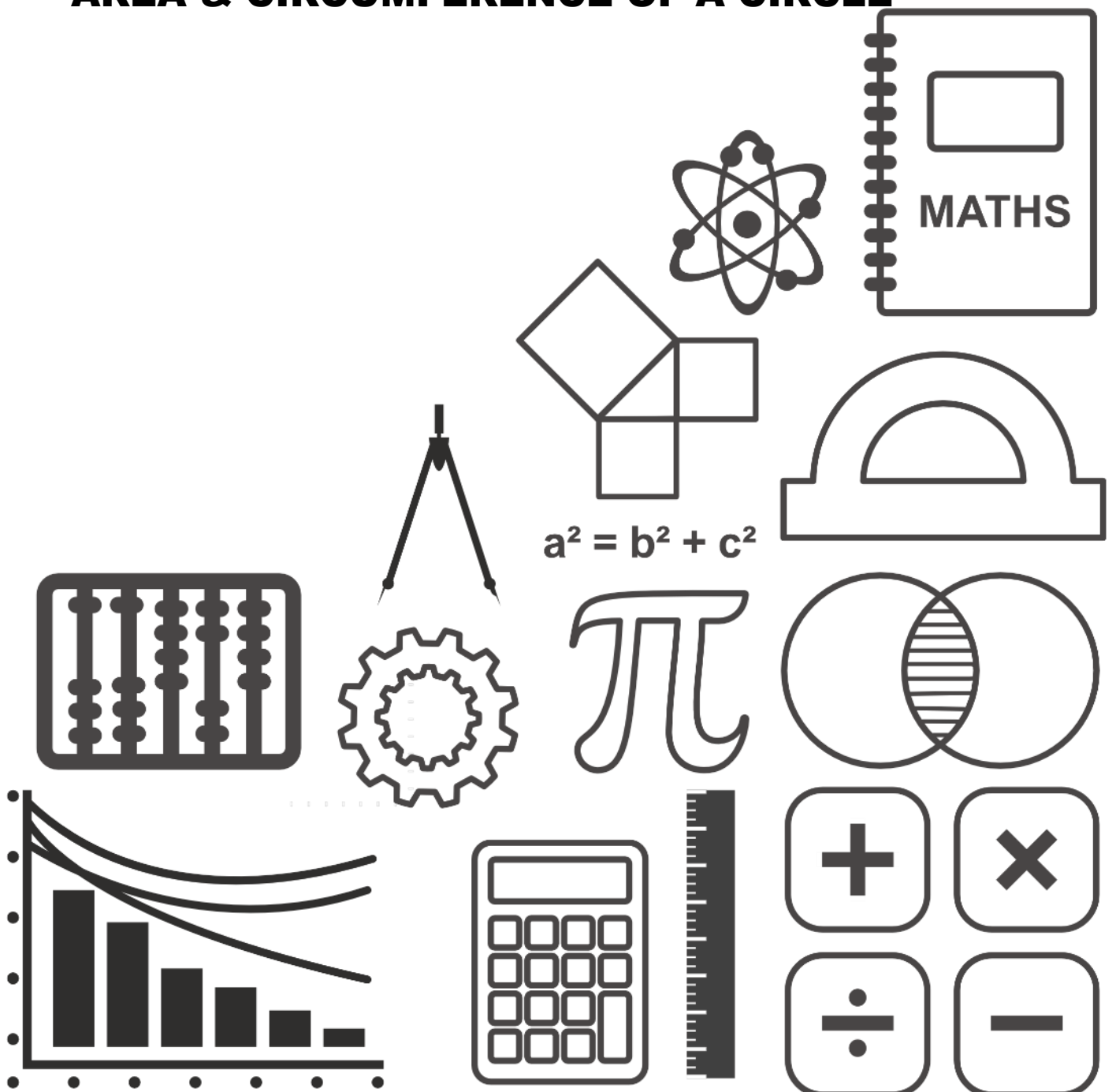


GCSE TOPIC BOOKLET

AREA & CIRCUMFERENCE OF A CIRCLE



1. A circular mat has a radius of 9cm.

a) Calculate the area of one surface of the table mat.

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(2)

b) Calculate the perimeter of the table mat.

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(2)

2. Elliot measures the diameter of a £2 coin and finds it to be 28mm. Clearly stating the units of your answers, calculate

a) the circumference of his £2 coin, giving your answer to an appropriate degree of accuracy.

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(3)

b) the area of one circular face of his £2 coin.

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(3)

3. A circular pond has a radius of 6.5m.

a) Find the circumference of the pond, giving your answer to an appropriate degree of accuracy.

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(3)

b) Calculate the area of the surface of the pond, stating clearly the units of your answer.

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(3)

4. In both parts (a) and (b) of this question you should state the units of your answer and give your answer to an appropriate degree of accuracy.

A circular pond has a radius of 8.2m.

a) Find the perimeter of the pond.

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(3)

b) Calculate the area of the surface of the pond.

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(3)

5. Jonathan measures the radius of a circular pond as 4.6m. Calculate the circumference of the pond, giving your answer to an appropriate degree of accuracy.

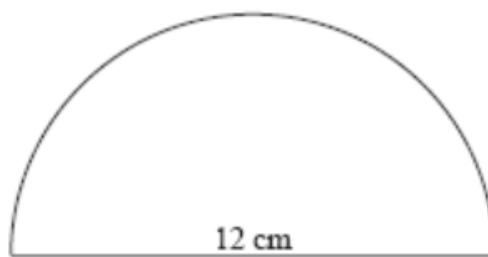
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(3)

6. Calculate the perimeter of this shape.



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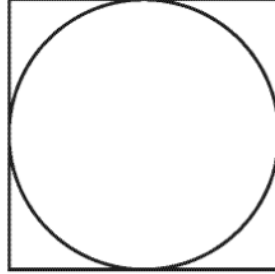
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(3)

7.

A square has a perimeter of 80 cm.
 A circle fits exactly inside the square, as shown in the diagram.



Calculate the circumference of the circle.
 Give your answer correct to 1 decimal place.
 You must show your working.

[4]

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(a) The shape below shows a semi circle attached to a rectangle.

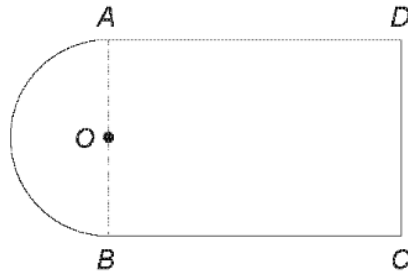


Diagram not drawn to scale

The radius of the semi circle is 6.1 cm and the length $BC = 16.7$ cm.
Calculate the area of the shape.

[6]

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(b) A circle has a circumference of 24π cm.
Calculate the radius of the circle.

[2]

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9.

A company has a large semicircle as part of its logo.
 The company plans to paint the logo onto one of the walls of its headquarters.
 One tin of paint covers 15 m^2 .

Calculate the number of tins of paint that the company needs to buy to paint a semicircle of radius 6.3 m onto the wall. [4]

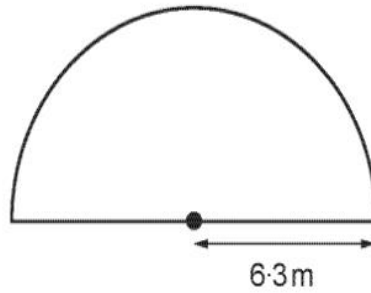


Diagram not drawn to scale

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10.

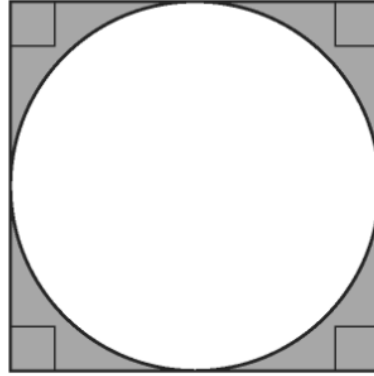


Diagram not drawn to scale

In the diagram above, the circle has a diameter of 12 cm.
Calculate the area of the shaded part.

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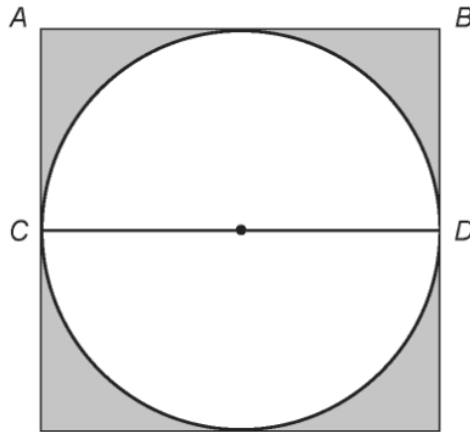
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[4]

11. The following shape is a circle within a square.



- (a) The line AB is a side of the square.
It also has a special name in relation to the circle.
Fill in the blank below.

The line AB is a to the circle. [1]

- (b) What is the special name given to the line CD ? [1]

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- (c) The length of AB is 20cm.
Calculate the area of the shaded region in the diagram above. [4]

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Area = cm^2