



# Area and Circumference of Circles



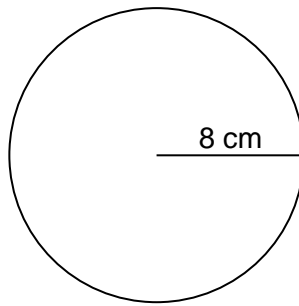
SCAN ME

REVISE THIS TOPIC

CHECK YOUR ANSWERS

SCAN ME

1 A circle has a radius of 8 cm.



Not drawn accurately

1 (a) Work out the area of the circle. Give your answer to 1 decimal place. [2 marks]

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Answer \_\_\_\_\_ cm<sup>2</sup>

1 (b) Work out the circumference of the circle. Give your answer to 1 decimal place. [2 marks]

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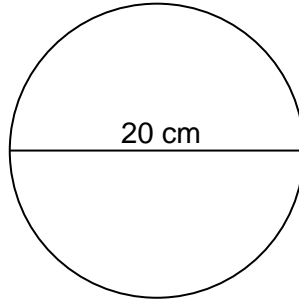
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Answer \_\_\_\_\_ cm

$\frac{\quad}{4}$



2 A circle has a diameter of 20 cm.



Not drawn accurately

2 (a) Work out the area of the circle.  
Give your answer to 1 decimal place. [2 marks]

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Answer \_\_\_\_\_ cm<sup>2</sup>

2 (b) Work out the circumference of the circle.  
Give your answer to 1 decimal place. [2 marks]

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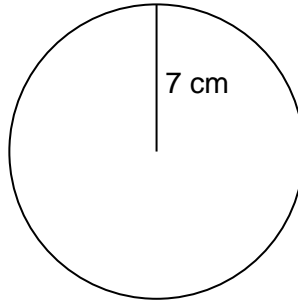
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Answer \_\_\_\_\_ cm



3 A circle has a radius of 7 cm.



Not drawn accurately

3 (a) Work out the area of the circle.  
Give your answer in terms of  $\pi$

[2 marks]

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Answer \_\_\_\_\_ cm<sup>2</sup>

3 (b) Work out the circumference of the circle.  
Give your answer in terms of  $\pi$

[2 marks]

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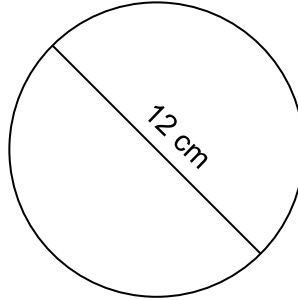
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Answer \_\_\_\_\_ cm

Turn over ►



4 A circle has a diameter of 12 cm.



Not drawn accurately

4 (a) Work out the area of the circle.  
Give your answer in terms of  $\pi$

[2 marks]

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Answer \_\_\_\_\_  $\text{cm}^2$

4 (b) Work out the circumference of the circle.  
Give your answer in terms of  $\pi$

[2 marks]

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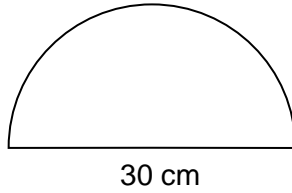
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Answer \_\_\_\_\_ cm





5 Here is a semicircle with a diameter of 30 cm.



Not drawn accurately

5 (a) Work out the area of the semicircle.  
Give your answer to 1 decimal place. [3 marks]

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Answer \_\_\_\_\_ cm<sup>2</sup>

5 (b) Work out the perimeter of the semicircle.  
Give your answer to 1 decimal place. [3 marks]

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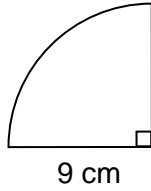
Answer \_\_\_\_\_ cm



Turn over ►



6 Here is a quarter circle with a radius of 9 cm.



Not drawn accurately

6 (a) Work out the area of the quarter circle.  
Give your answer to 1 decimal place.

[3 marks]

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Answer \_\_\_\_\_ cm<sup>2</sup>

6 (b) Work out the perimeter of the quarter circle.  
Give your answer to 1 decimal place.

[3 marks]

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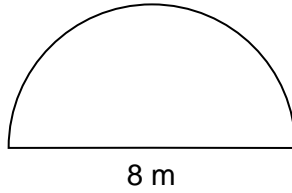
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Answer \_\_\_\_\_ cm





7 Here is a semicircle with a diameter of 8 m.



Not drawn accurately

7 (a) Work out the area of the semicircle.  
Give your answer in terms of  $\pi$

[3 marks]

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Answer \_\_\_\_\_  $\text{m}^2$

7 (b) Work out the perimeter of the semicircle.  
Give your answer in terms of  $\pi$

[3 marks]

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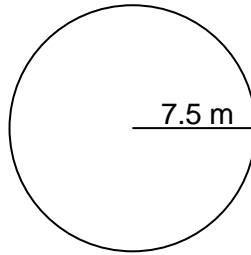
Answer \_\_\_\_\_ m



Turn over ►



8 The diagram below shows a circular shaped garden with a radius of 7.5 m



8 (a) A gardener plans to cover the garden in grass seed.  
A box of grass seed will cover 40 square metres of the garden.  
Work out how many boxes of grass seed the gardener will need. **[3 marks]**

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Answer \_\_\_\_\_

8 (b) The gardener also wishes to put a fence around the outside of the garden.  
The fencing costs £30 per metre.  
Work out the total cost of putting a fence around the out of the garden.  
Give your answer to the nearest pound. **[3 marks]**

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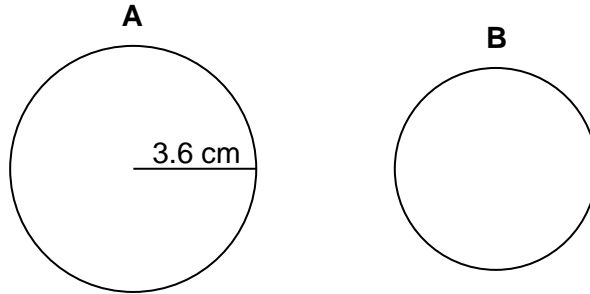
Answer £ \_\_\_\_\_







9 Here is circle **A** and circle **B**.



Radius of circle **A** : Radius of circle **B** = 3 : 2

Work out the circumference of circle **B**  
Give your answer to 1 decimal place.

[3 marks]

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Answer \_\_\_\_\_ cm

10 The circumference of a circle is 200 cm.  
Work out the radius of the circle.  
Give your answer to 2 decimal places.

[3 marks]

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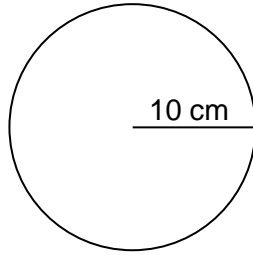
Answer \_\_\_\_\_ cm



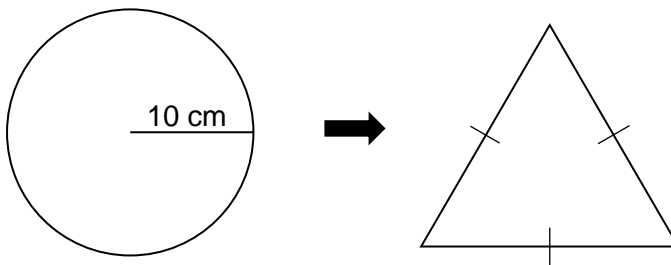
Turn over ►



11 Here is a circular wire with a radius of 10 cm.



The circular wire is bent to form an equilateral triangle.



11 (a) Work out the length of one side of the equilateral triangle.  
Give your answer to 1 decimal place.

[3 marks]

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Answer \_\_\_\_\_ cm



11 (b) Instead, the circular wire is bent into the shape of a square.

What does this mean about the length of one side of the square?

Tick **one** box.

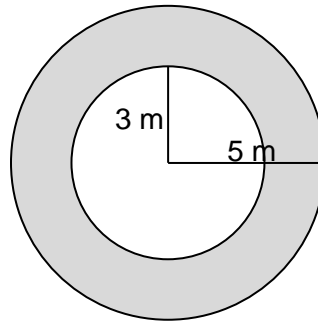
[1 mark]

It is more than the answer to part (a)

It is the same the answer to part (a)

It is less than the answer to part (a)

12 The shaded region below is made from two circles.



The radius of the smaller circle is 3 m.

The radius of the larger circle is 5 m.

Calculate the area of the shaded region.

[3 marks]

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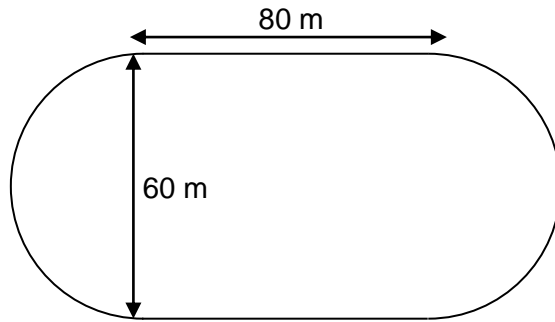
Answer \_\_\_\_\_ m<sup>2</sup>

$\frac{\quad}{7}$

Turn over ►



- 13 A running track is made from two straight sections and two semicircles.



The straight sections are 80 m long.  
The semicircles both have a diameter of 60 m.

- 13 (a) Work out the total length of the running track.  
Give your answer to the nearest metre.

[3 marks]

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Answer \_\_\_\_\_ m

- 13 (b) The inside of the running track is covered with grass.  
Work out the area of the grass on the inside of the running track.  
Give your answer to 1 decimal place.

[3 marks]

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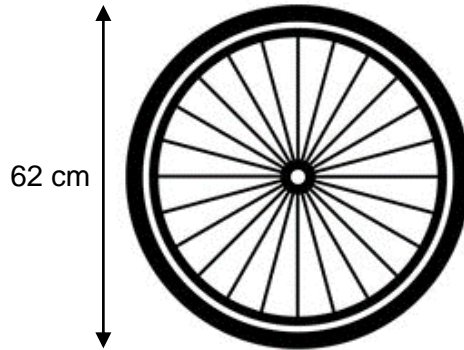
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Answer \_\_\_\_\_ m<sup>2</sup>





14 The diameter of Lenny's bike wheel is 62 cm.



Lenny rides his bike 800 metres.

Work out how many complete revolutions his bike wheel will complete. **[4 marks]**

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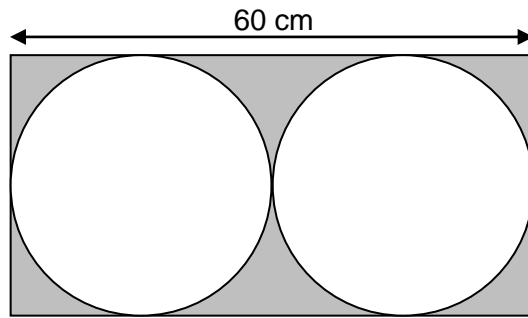
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Answer \_\_\_\_\_



15 Two touching circles fit exactly inside this rectangle.



15 (a) Work out the circumference of one of the circles.  
Give your answer to the nearest centimetre.

[2 marks]

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Answer \_\_\_\_\_ cm

15 (b) Work out the area of the shaded region.  
Give your answer to 1 decimal place.

[4 marks]

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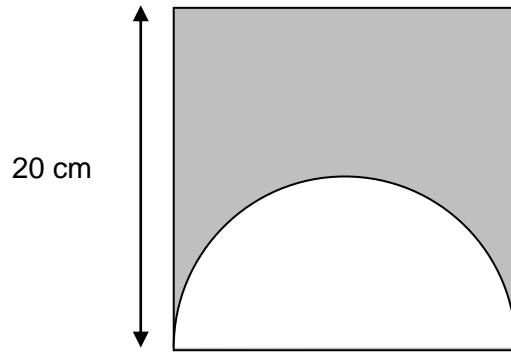
Answer \_\_\_\_\_ cm<sup>2</sup>





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A semicircle is cut from a square as shown.



Work out the area of the shaded region.  
Give your answer in terms of  $\pi$

[4 marks]

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Answer \_\_\_\_\_  $\text{cm}^2$

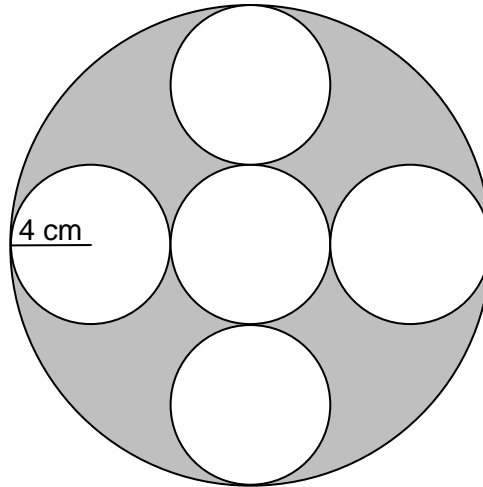


Turn over ►



17

5 congruent circles of radius 4 cm fit inside a larger circle.



Work out the area of the shaded region.

Give your answer in terms of  $\pi$ **[4 marks]**

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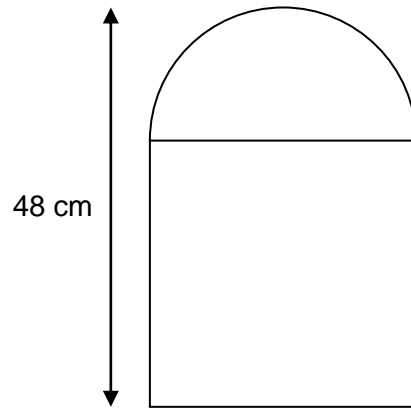
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Answer \_\_\_\_\_  $\text{cm}^2$ 



18

A design is made by placing a semicircle on top of a square.



The total height of the design is 48 cm.  
Work out the total area of the design.  
Give your answer to 1 decimal place.

**[4 marks]**

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Answer \_\_\_\_\_ cm<sup>2</sup>