GCSE MATHEMATICS

AQA | Edexcel | OCR | WJEC

(Level 4 - 7)

Circles Sectors and Arcs

Please write clearly in block capitals

Forename:
Surname:

Materials

For this paper you must have:
- mathematical instruments

You **can** use a calculator.

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer all questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.
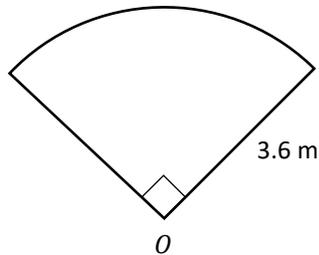
Information

- The marks for questions are shown in brackets.
- You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.

Advice

- In all calculations, show clearly how you work out your answer.

1   Consider the following quarter-circle with centre O.,   *(Level 4)*

The radius is 3.6 m.

Not drawn
accurately

3.6 m

O

Find the area of the quarter-circle.

Give your answer to 2 decimal places.

[3 marks]

_____

_____

_____

_____

_____

_____

Answer   _____

Turn over for next question

3

Turn over ►

2   The diagram shows the sector of a circle with centre *O*   *(Level 4)*

Not drawn
accurately

5 m

50°

O
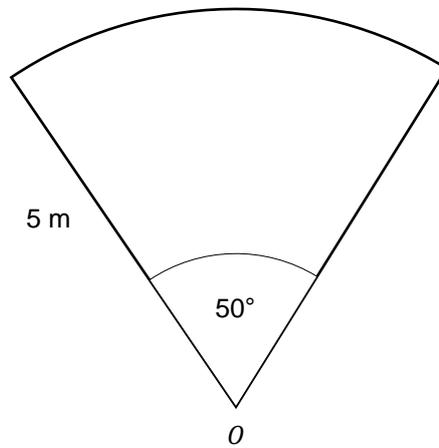
The radius of the circle is 5 m and the angle of the sector is 50°

Calculate the area of the sector.

Give your answer to one decimal place.

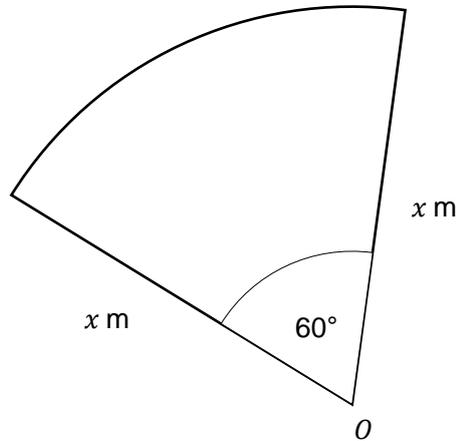**[3 marks]**

_____

_____

_____

_____

_____

_____

_____

Answer   _____

Turn over for next question

3

Turn over ▶

3   The diagram shows the sector of a circle with centre O.   *(Level 5)*

Not drawn
accurately

x m

x m   60°

O

The area of the sector is 18.4 m^2 to 1 decimal place and the angle is 60°

Calculate the radius of the sector.

Give your answer to one decimal place.

[3 marks]
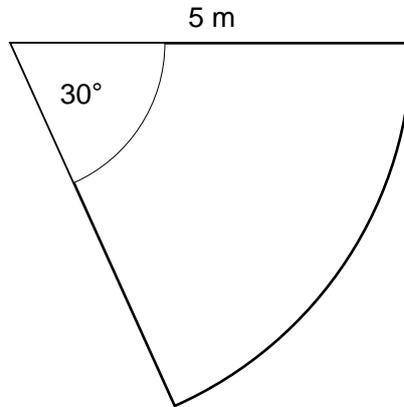
Answer   m

3

Turn over ▶

4   The sector of a circle below has a radius of 5m and the angle at the centre is 30°   *(Level 5)*

Not drawn
accurately

5 m

30°

4(a)   Find the area of the sector

Give your answer to one decimal place.

[2 marks]

Answer _____ cm²

4(b)   Find the arc length of the sector.
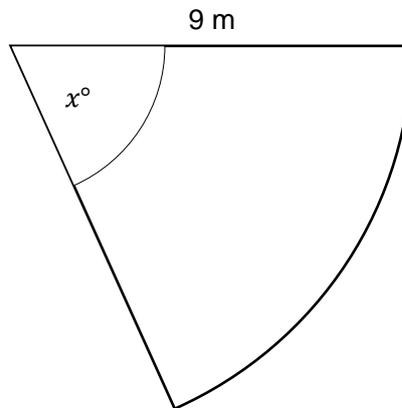
Give your answer to one decimal place.

[2 marks]

Answer _____ cm

Turn over for next question

4

Turn over ►

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5   The area of the sector below is $26.15\ m^2$ *(Level 5)*

9 m

$x°$

Not drawn
accurately

Calculate the value of the angle x

Give your answer to one decimal place.

[2 marks]

Answer

2

Turn over ▶

6   The diagram shows an equilateral triangle with side lengths of 9 cm   *(Level 6)*

Not drawn
accurately

9 cm

9 cm

A

x°

O

B   9 cm
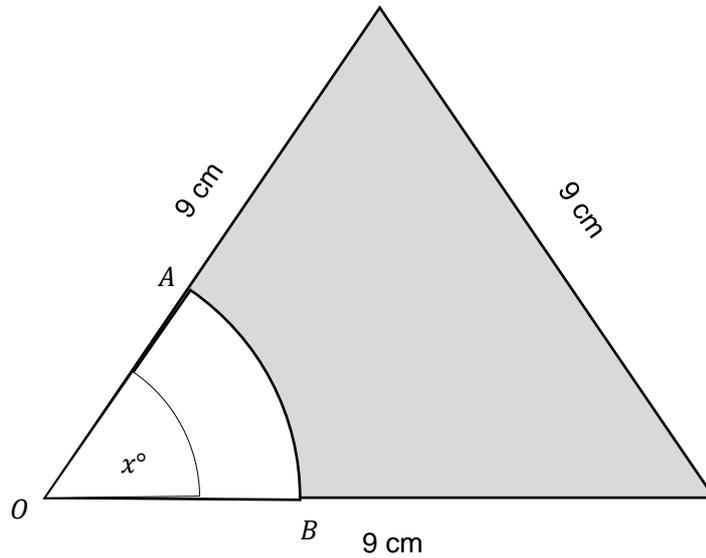
Given O is the centre of a circle and OAB is a sector of that circle where $OA = 3\ cm$

Find the perimeter of the shaded region.
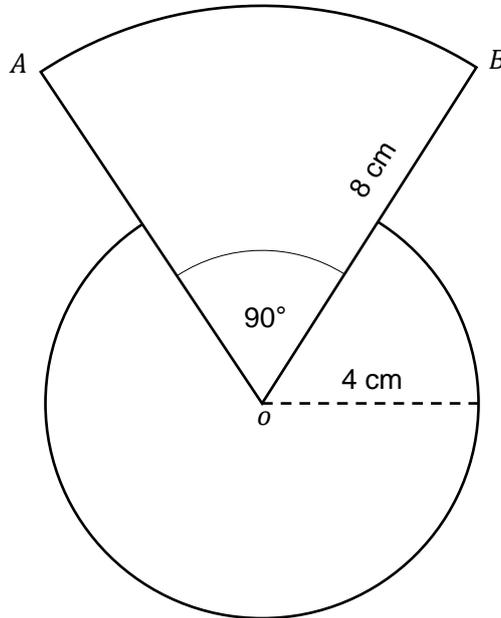
Give your answer to one decimal place.

[3 marks]

_____

_____

_____

_____

_____

Answer   _____

A

3

Turn over ▶

7 OAB is a circle segment of radius $8\ cm$ *(Level 7)*

O is a circle of radius $4\ cm$

A

B

8 cm

90°

4 cm

O

Not drawn
accurately

Calculate the total area of the shape shown above.

Give your answer to one decimal place.

[3 marks]

_____

_____

_____

_____

_____

Answer   _____

End of questions

3

END

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