JP Maths Revision

Attempt the paper before watching the solutions!

https://www.youtube.com/@JPMathsRevision

HIGHER TIER

Sectors

INSTRUCTIONS

- Use **black ink** or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You must **show all your working.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

INFORMATION

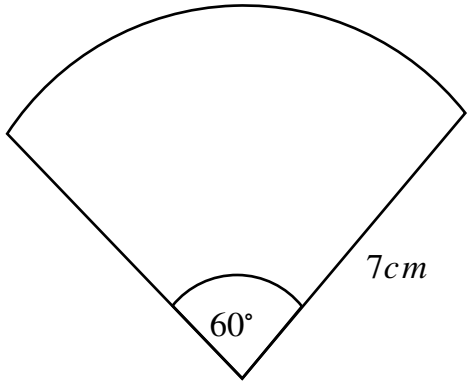
- The marks for **each** question are shown in brackets– *use this as a guide as to how much time to spend on each question.*

ADVICE

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.

You've got this!

1. The diagram shows a sector of a circle with centre O. The radius is 7 cm and the angle is 60°.



Calculate the area of the sector.
Give your answer in terms of π.

(Total for Question 1 is 2 marks)

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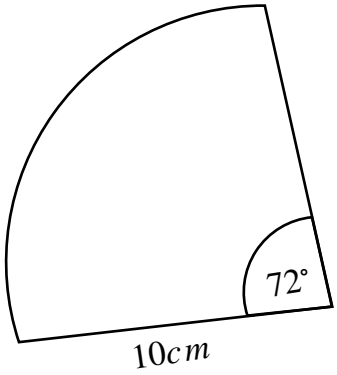
2. The diagram shows a sector of a circle with centre O. The radius is 7 cm and the angle is



Calculate the length of the arc.
Give your answer in terms of π.

(Total for Question 2 is 2 marks)

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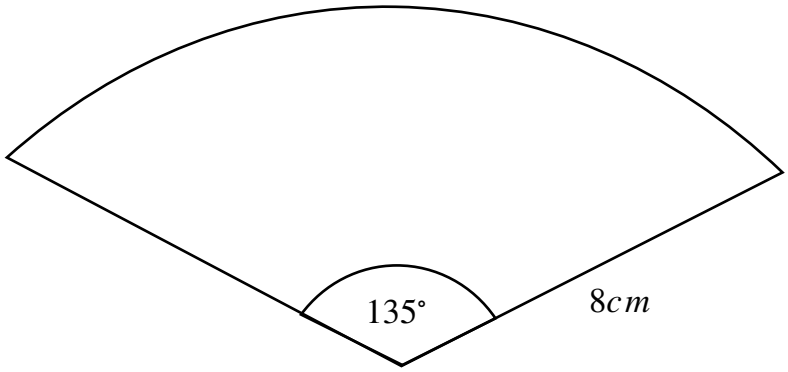
3. The diagram shows a sector of a circle with radius 8 cm and the angle is 135°.

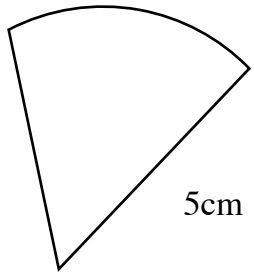


(a) Calculate the area of the sector.

(b) Calculate the perimeter of the sector.

(Total for Question 3 is 5 marks)

4. The diagram shows a sector with radius of 5 cm. The area of the sector is $20\pi \ cm^2$.



Calculate the length of the arc.

(Total for Question 4 is 4 marks)

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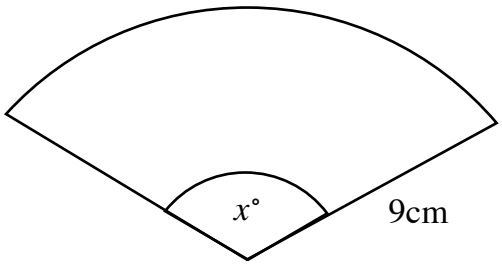
5. The diagram shows a sector of a circle with radius of 9 cm. The length of the arc is $6\pi \ cm$.



Calculate the size of the angle marked $x°$.

(Total for Question 5 is 3 marks)

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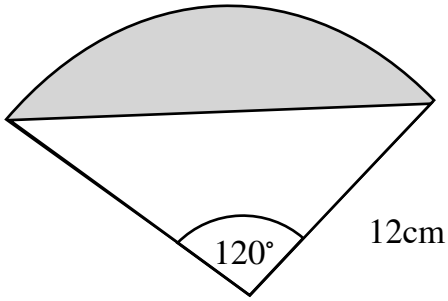
6. The diagram below shows a sector with centre O.

The radius is 12 cm and the angle is 120°.

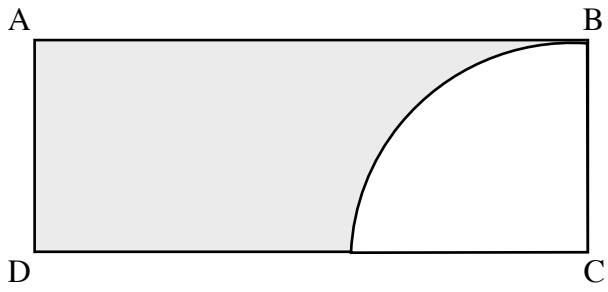
Triangle OAB is formed by joining the radii.

Calculate the area of the shaded region between the arc and the triangle OAB.



(Total for Question 6 is 4 marks)

7. The diagram shows a rectangular garden ABCD.



AB = 20 m

BC = 12 m

The shaded region will be covered with artificial grass.

Artificial grass is sold in packs that each cover 8 m^2.

Each pack costs £45.

Calculate the cost of covering the shaded region, giving your answer to the nearest pound.

(Total for Question 7 is 4 marks)