



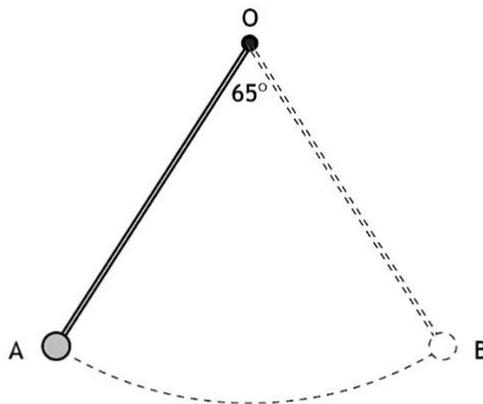
National 5 Mathematics

Arcs & Sectors - Questions

Marks are indicated in brackets after each question number

2015 Paper 2 Question 10, (4)

The pendulum of a clock swings along an arc of a circle, centre O.



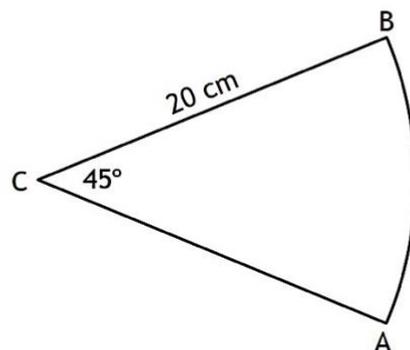
The pendulum swings through an angle of 65° , travelling from A to B.

The length of the arc AB is 28.4 centimetres.

Calculate the length of the pendulum.

2016 Paper 1 Question 3, (3)

The diagram shows a sector of a circle, centre C.



The radius of the circle is 20 centimetres and angle ACB is 45° .

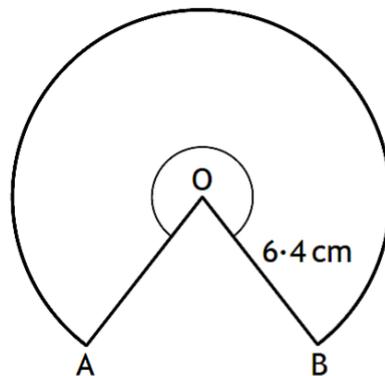
Calculate the area of the sector.

Take $\pi = 3.14$.



2017 Paper 2 Question 14, (3)

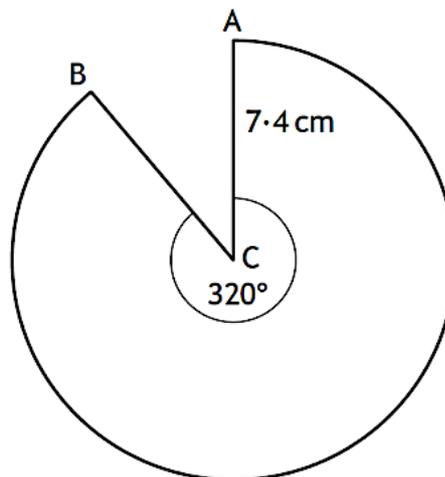
The diagram below shows part of a circle, centre O.



The radius of the circle is 6.4 centimetres.
Major arc AB has length 31.5 centimetres.
Calculate the size of the reflex angle AOB.

2018 Paper 2 Question 2, (3)

The diagram below shows a sector of a circle, centre C.

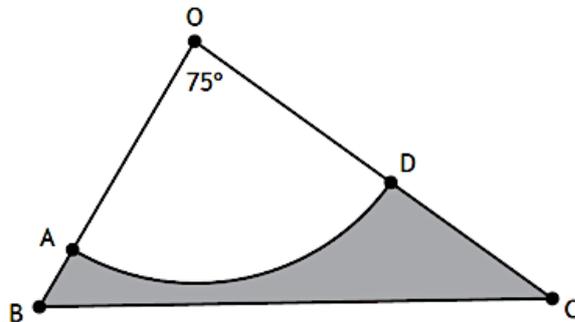


The radius of the circle is 7.4 centimetres.
Calculate the length of the major arc AB.



2018 Paper 2 Question 17, (5)

In the diagram below AOD is a sector of a circle, with centre O, and BOC is a triangle.



In sector AOD:

- radius = 30 centimetres
- angle AOD = 75° .

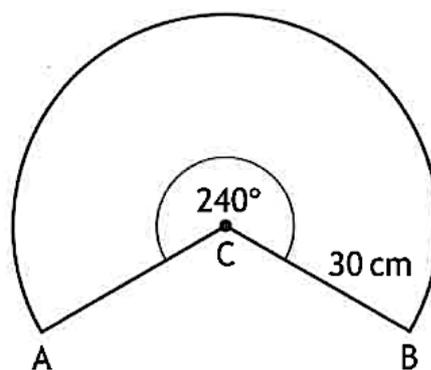
In triangle OBC:

- OB = 38 centimetres
- OC = 55 centimetres.

Calculate the area of the shaded region, ABCD.

2019 Paper 1 Question 4, (3)

The diagram below shows a sector of a circle, centre C.



The radius of the circle is 30 centimetres.

Calculate the length of the major arc AB.

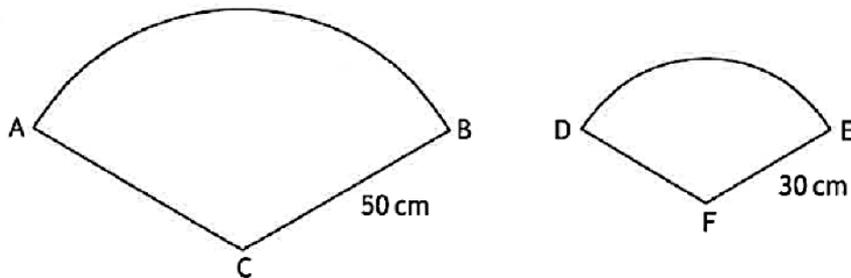
Take $\pi = 3.14$.



2019 Paper 2 Question 12, (3) (3)

In the diagram

- ABC is a sector of a circle, centre C
- DEF is a sector of a circle, centre F.



The sectors are mathematically similar.

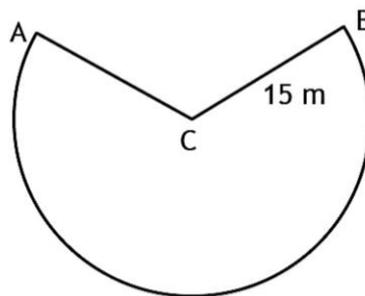
The area of the larger sector, ABC, is 2750 square centimetres.

(a) Calculate the area of the smaller sector, DEF.

(b) Calculate the size of angle ACB.

2022 Paper 2 Question 10, (3)

The arm swings from A to B along the arc of a circle, centre C, as shown in the diagram below.



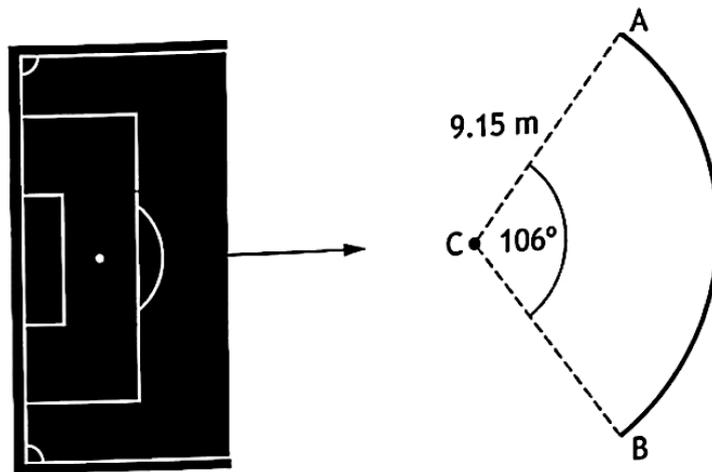
- The length of the arm, CB, is 15 metres.
- The length of the major arc, AB, is 69.4 metres.

Calculate the size of the reflex angle ACB.



2023 Paper 2 Question 3, (3)

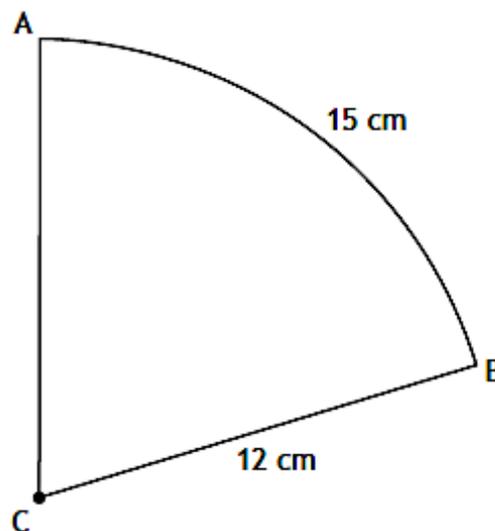
The diagram shows part of a football pitch.



The penalty spot is marked at point C.
AB is an arc of a circle, centre C, radius 9.15 metres.
Calculate the length of the arc AB.

2024 Paper 2 Question 16, (3)

The diagram shows a sector of a circle, centre C.



The radius of the circle is 12 centimetres.
The length of arc AB is 15 centimetres.
Calculate the area of the sector.

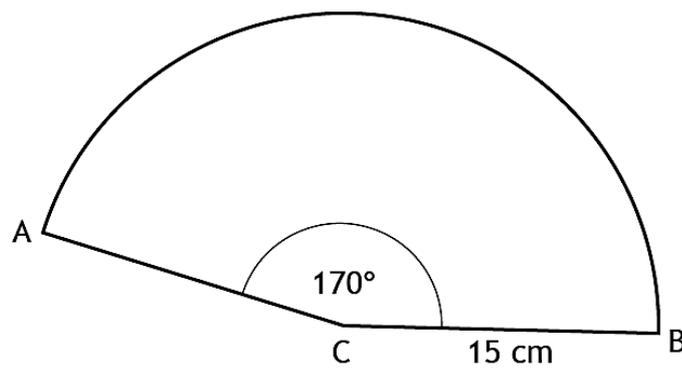


2025 Paper 2 Question 6, (3)

A party hat is made in the shape of a cone, as shown.



The piece of card used for making the hat is a sector of a circle, centre C.



The radius of the circle is 15 centimetres and angle ACB is 170° .
Calculate the area of the sector.