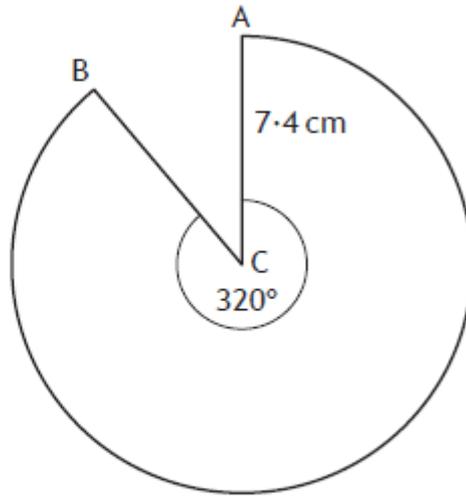


2018 P2 Q2

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



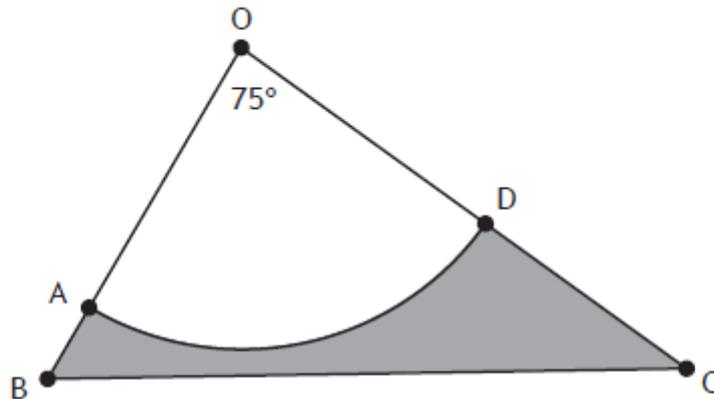
The radius of the circle is 7.4 centimetres.
Calculate the length of the major arc AB.

3

Ans 41.3 cm

2018 P2 Q17

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.

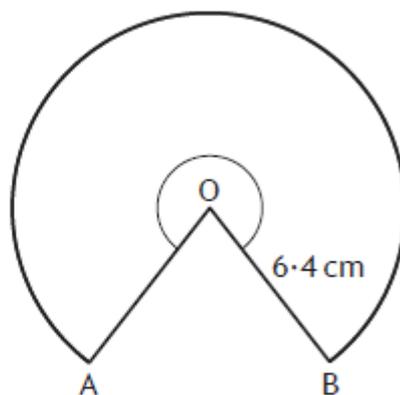
Calculate the area of the shaded region, ABCD.

5

Ans 420 cm^2

2017 P2 Q14

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.

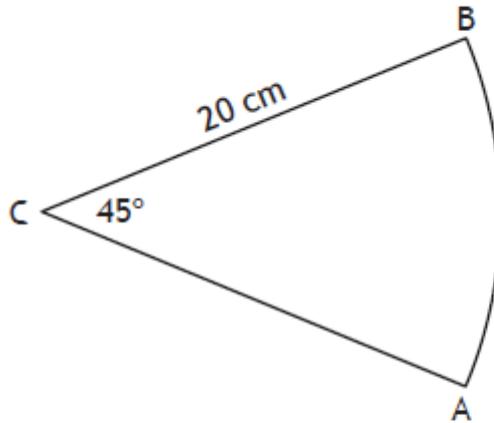
Calculate the size of the reflex angle AOB.

3

Ans 282°

2016 P1 Q3

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.

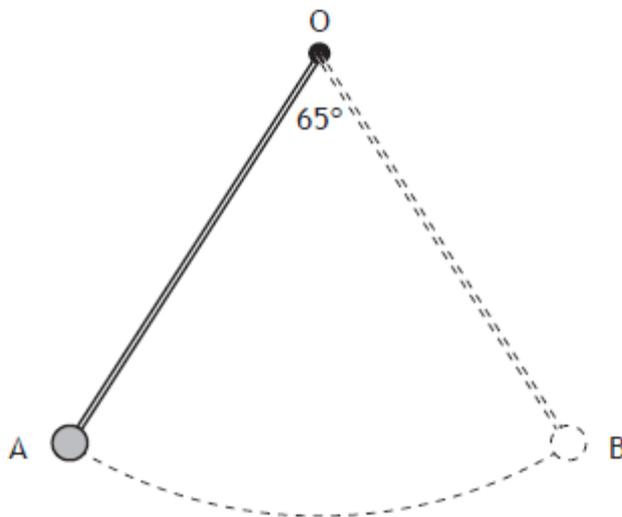
Take $\pi = 3.14$.

3

Ans 157cm²

2015 P2 Q10

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.

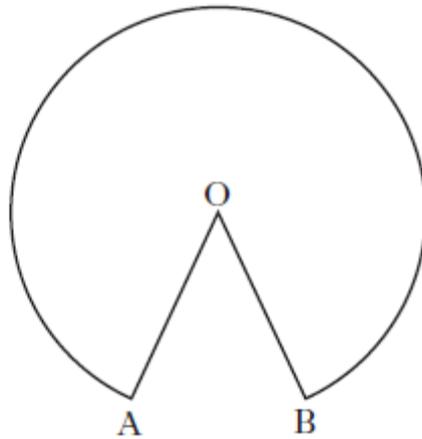
Calculate the length of the pendulum.

4

Ans 25cm

2015 P2 Q15

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



The radius of the circle is 6.4 centimetres.

Major arc AB has length 34.6 centimetres.

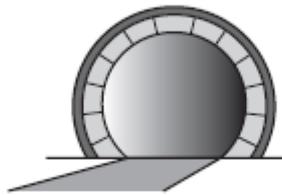
Calculate the size of reflex angle AOB.

4

Ans 310°

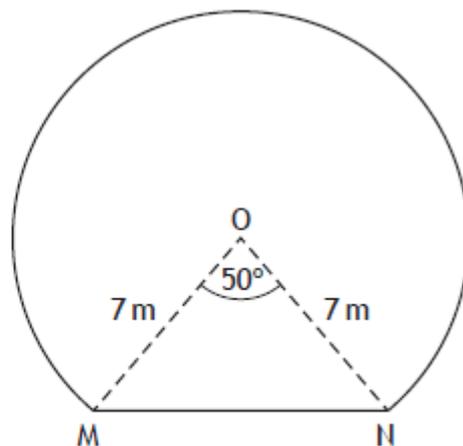
2014 P2 Q13

The picture shows the entrance to a tunnel which is in the shape of part of a circle.



The diagram below represents the cross-section of the tunnel.

- The centre of the circle is O.
- MN is a chord of the circle.
- Angle MON is 50° .
- The radius of the circle is 7 metres.



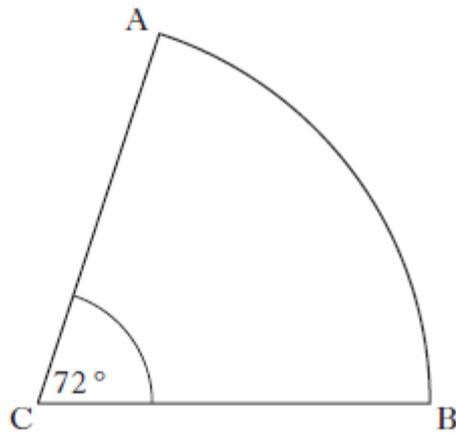
Calculate the area of the cross-section of the tunnel.

5

Ans $151.3m^2$

2013 P1 Q3

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



The radius of the circle is 5 centimetres and angle ACB is 72° .

Calculate the length of arc AB.

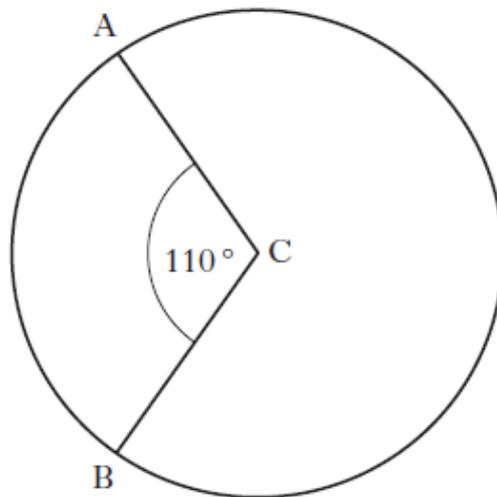
Take $\pi = 3.14$.

3

Ans 6.28cm

2012 P2 Q1

The diagram below shows a circle, centre C.

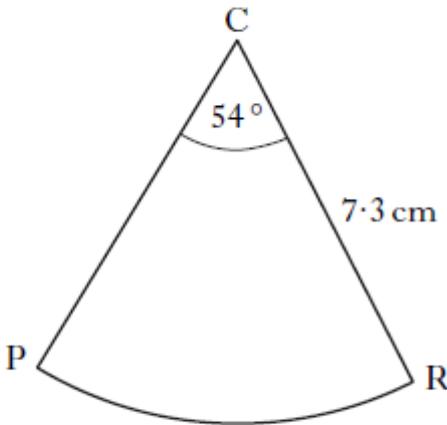
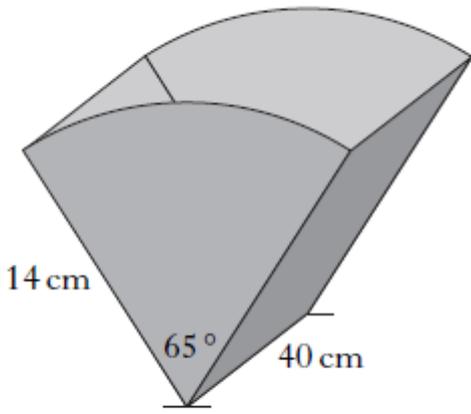


The circumference of the circle is 40.8 centimetres.

Calculate the length of the minor arc AB.

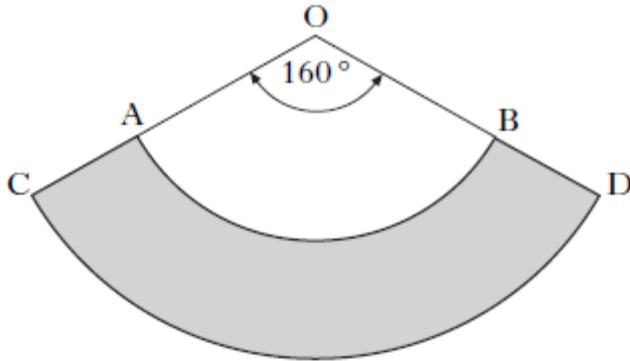
2

Ans 12.5cm

2011 P2 Q5	<p>The diagram below shows a sector of a circle, centre C.</p>  <p>The radius of the circle is 7.3 centimetres and angle PCR is 54°. Calculate the area of the sector PCR.</p>	3
Ans	25.1cm^2	
2010 P2 Q9	<p>The ends of a magazine rack are identical.</p> <p>Each end is a sector of a circle with radius 14 centimetres.</p> <p>The angle in each sector is 65°.</p> <p>The sectors are joined by two rectangles, each with length 40 centimetres.</p> <p>The exterior is covered by material. What area of material is required?</p> 	4
Ans	1342.35cm^2	

2009 P2 Q5

A pet shop manufactures protective dog collars.
In the diagram below the shaded area represents one of these collars.



AB and CD are arcs of the circles with centres at O.
The radius, OA, is 10 inches and the radius, OC, is 18 inches.
Angle AOB is 160° .

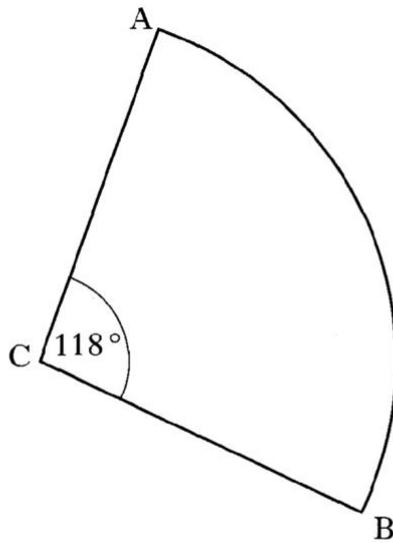
Calculate the area of a collar.

4

Ans 313 square inches

2007 P2 Q2

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



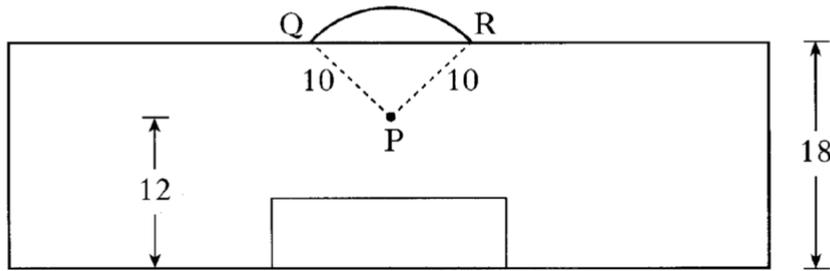
The radius of the circle is 10.5 centimetres and angle ACB is 118° .
Calculate the length of arc AB.

3

Ans 21.6cm

2006 P2 Q8

The diagram shows the penalty area in a football pitch.
All measurements are given in yards.



The penalty spot is marked at point P.

QR is an arc of a circle, centre P, radius 10 yards.

The width of the penalty area is 18 yards and the distance of the penalty spot from the goal line is 12 yards, as shown.

- (a) Calculate the size of angle QPR.
(b) Calculate the length of arc QR.

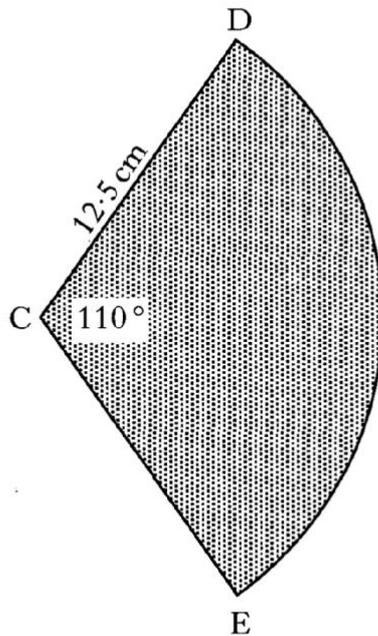
3

2

Ans (a) 106.3° (b) 18.6 yards

2005 P2 Q5

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

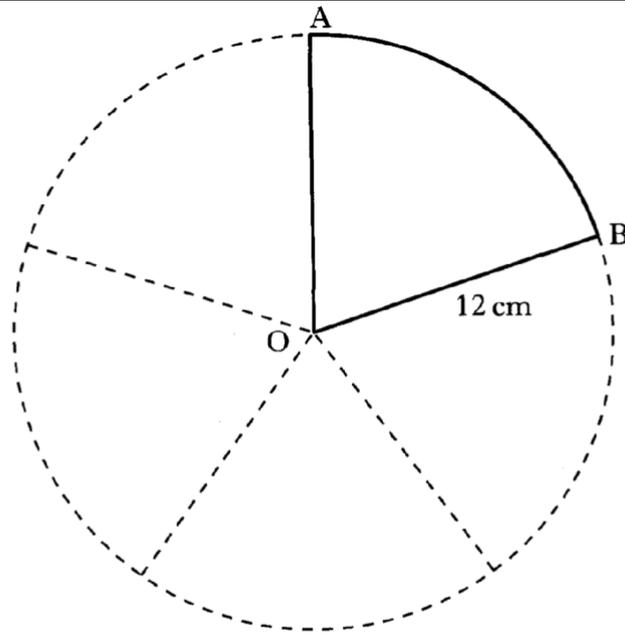


The radius of the circle is 12.5 centimetres and angle DCE is 110° .
Calculate the area of the sector CDE.

3

Ans 149.9cm^2

2004 P2 Q4



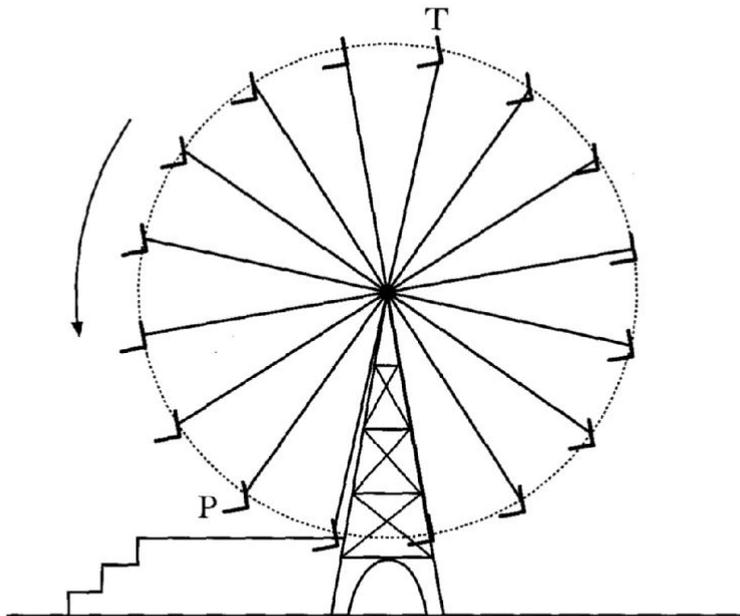
A circle, with centre O and radius 12 centimetres, is cut into 5 equal sectors.
Calculate the perimeter of sector OAB.

3

Ans 39.1cm

2003 P2 Q8

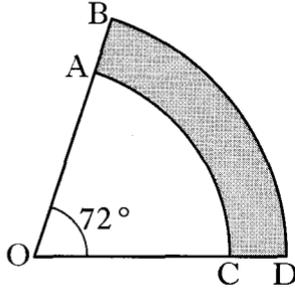
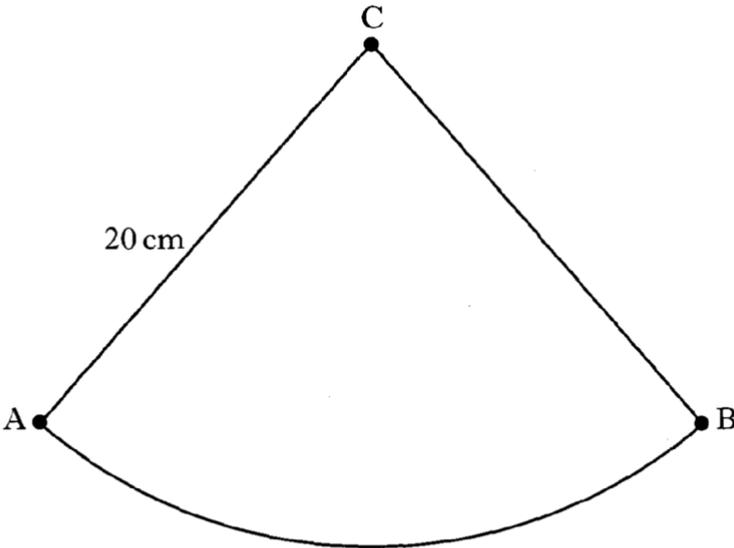
The diagram below shows a big wheel at a fairground.



The wheel has sixteen chairs equally spaced on its circumference.
The radius of the wheel is 9 metres.
As the wheel rotates in an anticlockwise direction, find the distance a chair travels in moving from position T to position P in the diagram.

4

Ans 24.7m

2002W P2 Q2	<p>In the diagram opposite AC and BD are arcs of circles with centres at O.</p> <p>The radius, OA, is 8 metres and the radius, OB, is 10 metres.</p> <p>Angle AOC = 72°.</p> <p>Find the shaded area.</p>		4
Ans	$22.6m^2$		
2002 P2 Q4	<p>A pendulum travels along an arc of a circle, centre C.</p>  <p>The length of the pendulum is 20 centimetres.</p> <p>The pendulum swings from A to B.</p> <p>The length of the arc AB is 28.6 centimetres.</p> <p>Find the angle through which the pendulum swings from A to B.</p>		4
Ans	82°		

The diagram shows a mirror which has been designed for a new hotel.

The shape consists of a sector of a circle and a kite AOCB.

- The circle, centre O, has a radius of 50 centimetres.
- Angle AOC = 140° .
- AB and CB are tangents to the circle at A and C respectively.

Find the perimeter of the mirror.

