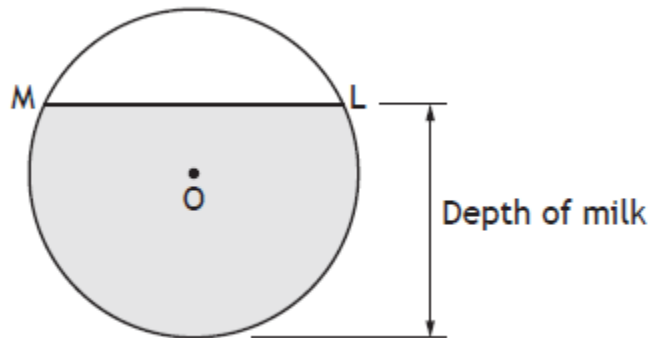


National 5 Mathematics
Exam Questions by Topic

Circles & Pythagoras

2015 N5 Past Paper P2, Q12

1. The diagram below shows the cross-section of a milk tank.



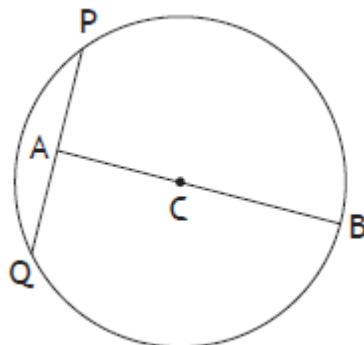
The radius of the circle, centre O , is 1.2 metres.

The width of the surface of the milk in the tank, represented by ML in the diagram, is 1.8 metres.

Calculate the depth of the milk. (4 marks)

2014 N5 Past Paper P1, Q12

2. The diagram below shows a circle, centre C .



The radius of the circle is 15 centimetres.

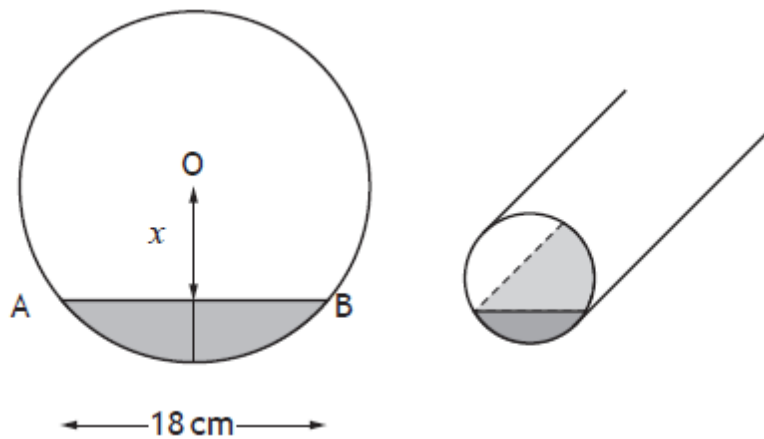
A is the mid-point of chord PQ .

The length of AB is 27 centimetres.

Calculate the length of PQ . (4 marks)

2013 N5 Specimen P1, Q12

3. A cylindrical pipe has water in it as shown.



The depth of the water at the deepest point is 5 centimetres.

The width of the water surface, AB, is 18 centimeters.

The radius of the pipe is r centimetres.

The distance from the centre, O, of the pipe to the water surface is x centimetres.

(a) Write down an expression for x in terms of r . (1 mark)

(b) Calculate r , the radius of the pipe. (3 marks)

N5 Practice Paper C, P1, Q9

4. A pony shelter is part of a cylinder as shown in figure 1.

It is 6 metres wide and 2 metres high.

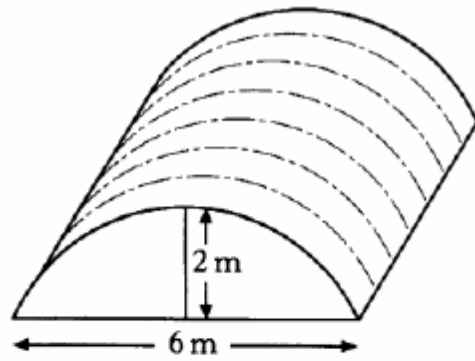


Figure 1

The cross section of the shelter is a segment of a circle with centre O , as shown in figure 2.

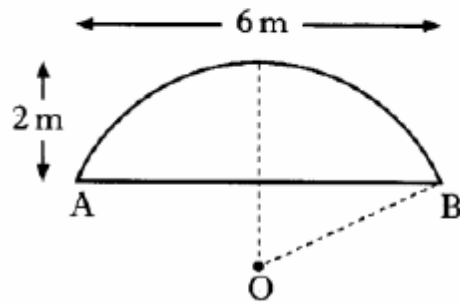


Figure 2

OB is the radius of the circle.

Calculate the length of OB .

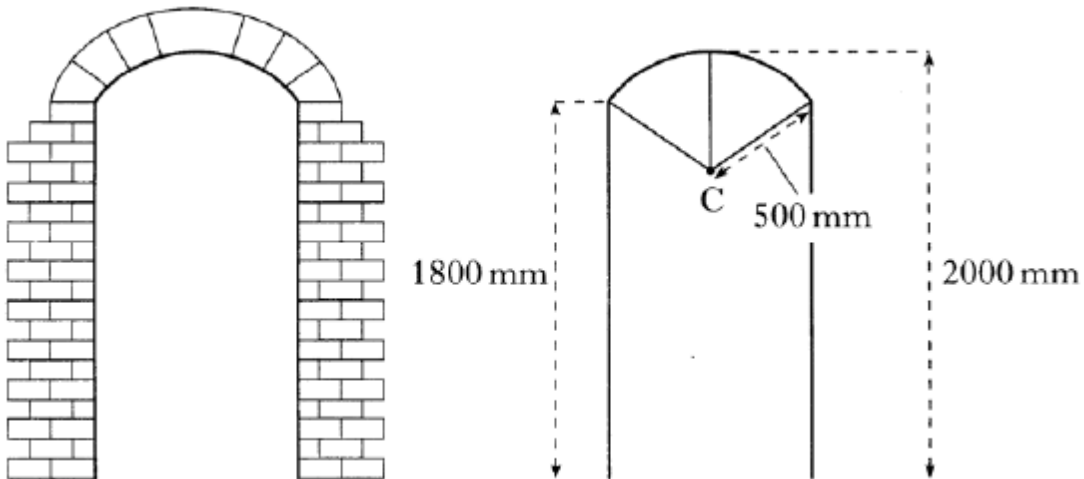
(4 marks)

N5 Practice Paper D, P2, Q7

5. The curved part of a doorway is an arc of a circle with radius 500 millimetres and centre C.

The height of the doorway to the top of the arc is 2000 millimetres.

The vertical edge of the doorway is 1800 millimetres.



Calculate the width of the doorway.

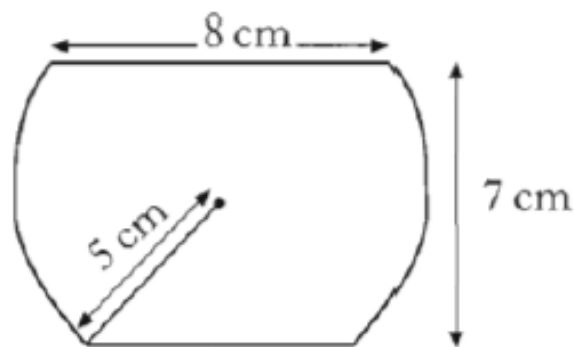
(5 marks)

N5 Practice Paper E, P2, Q7

6. A badge is made from a circle of radius 5 centimetres.

Segments are taken off the top and bottom of the circle as shown.

The straight edges are parallel.



The badge measures 7 centimetres from the top to the bottom.

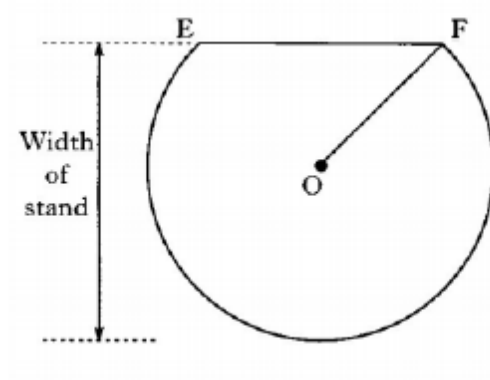
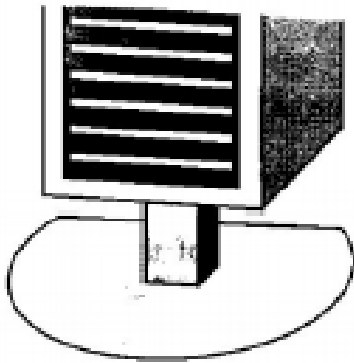
The top is 8 centimetres wide.

Calculate the width of the base.

(5 marks)

N5 Practice Paper F, P1, Q6

7. The diagram shows the base of a loudspeaker stand which has the shape of part of a circle.



- The centre of the stand is O
- EF is a chord of the circle
- EF is 18 centimetres
- The radius, OF, of the circle is 15 centimetres

Find the width of the stand

(4 marks)