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National 5 Mathematics

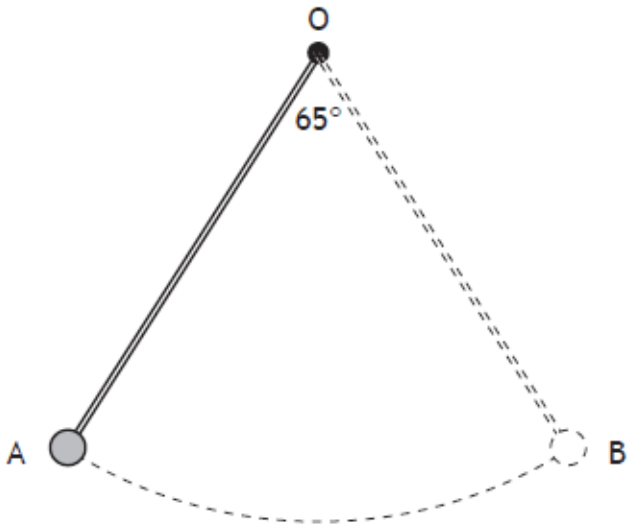
Exam Questions by Topic

Arcs & Sectors

Step-by-step worked solutions to these questions in the N5 Maths Study Pack.

2015 N5 Past Paper P2, Q10

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



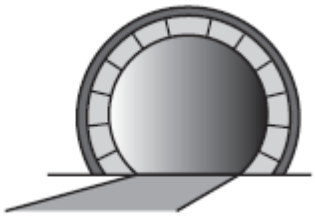
The pendulum swings through an angle of 65°, travelling from A to B.

The length of the arc AB is 28.4 centimetres.

Calculate the length of the pendulum. (4 marks)

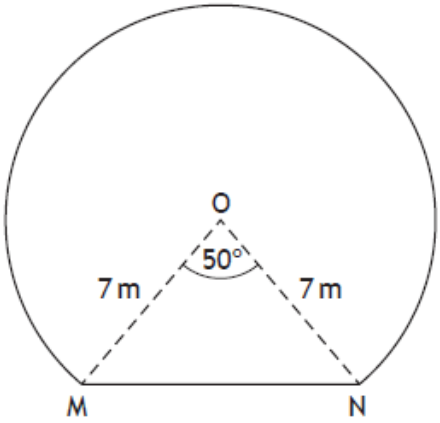
2014 N5 Past Paper P2, Q13

2. 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.



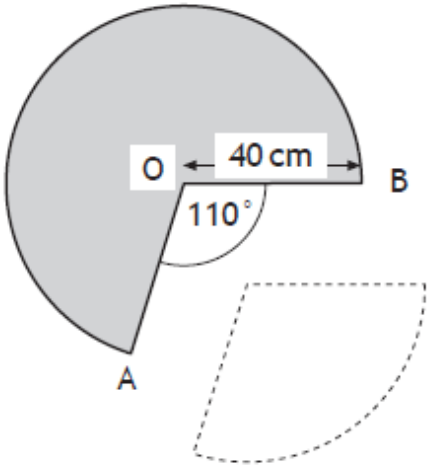
Calculate the area of the cross-section of the tunnel. (5 marks)

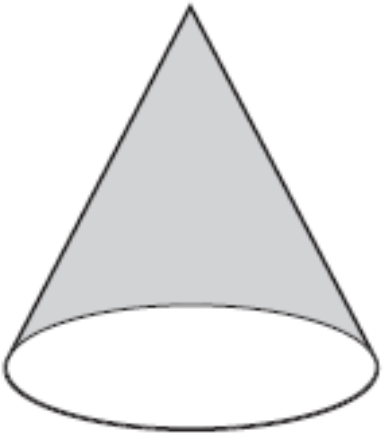
2013 N5 Specimen Paper P2, Q11

3. A cone is formed from a paper circle with a sector removed as shown.

The radius of the paper is 40 centimetres.

Angle AOB is 110°



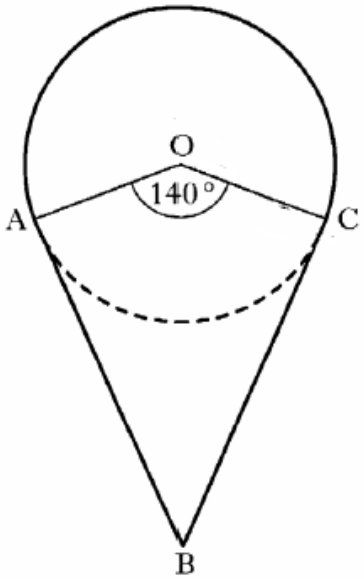


(a) Calculate the area of the sector removed from the circle. (3 marks)

(b) Calculate the circumference of the base of the cone. (3 marks)

N5 Practice Paper A, P2, Q5

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



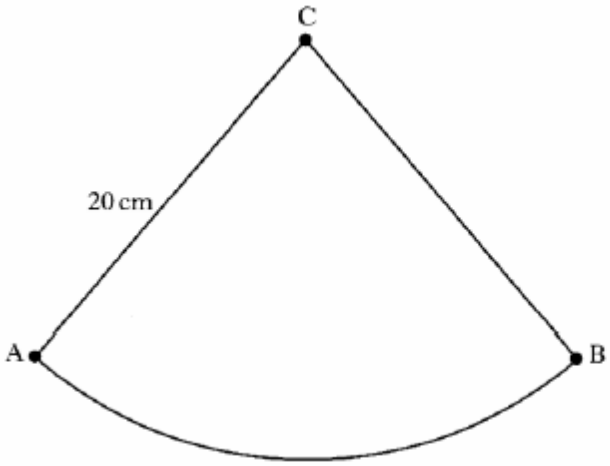
The shape consists of a sector of a circle and a kite AOCB.

- 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. (5 marks)

N5 Practice Paper D, P2, Q4

5. A pendulum travels along an arc of a circle, centre C.



The length of the pendulum is 20 centimetres.

The pendulum swings from A to B.

The length of the arc AB is 28.6 centimetres.

Find the angle through which the pendulum swings from A to B.

(4 marks)