

National 5 Maths Practice Paper D

Paper 2

You may use a calculator

- Q1. The average Scottish house price is £153 100.
The average price is expected to rise by 2.5% per month.
What will the average Scottish house price be in 3 months?
Give your answer correct to three significant figures.

3

- Q2. The heights, in millimetres, of six seedlings are given below.

15 18 14 17 16 19

- (a) Calculate:

(i) the mean;

1

(ii) the standard deviation;

3

of these heights.

Show clearly all your working.

- (b) Later the same six seedlings are measured again.
Each has grown by 4 millimetres.

State:

(i) the mean;

1

(ii) the standard deviation;

1

of these new heights.

Q4. A sports centre charges different entrance fees for adults and children.

- (a) One evening 14 adults and 4 children visited the sports centre.
The total collected in entrance fees was £55.00.

Let x pounds be the adult entrance fee and y pounds be the child's entrance fee.

Write down an equation in x and y to describe the above information.

1

- (b) The following evening 13 adults and 6 children visited the sports centre.
The total collected in entrance fees was £54.50.

Write down a second equation in x and y .

1

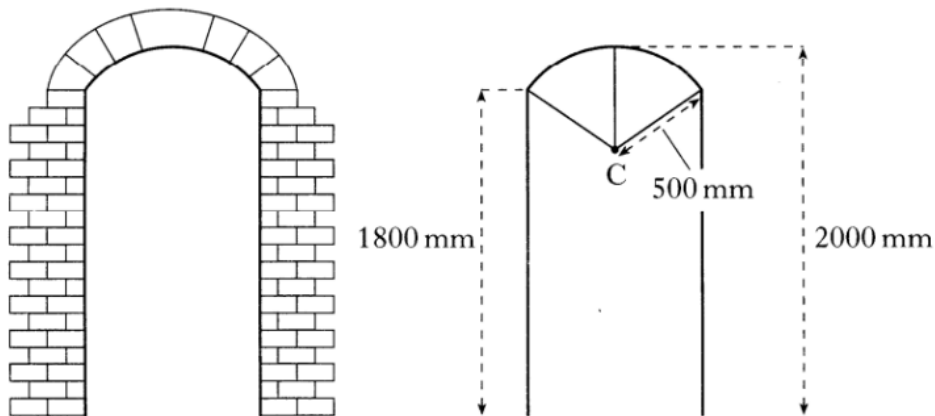
- (c) Calculate the entrance fee for an adult and the entrance fee for a child.

4

Q7. 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.

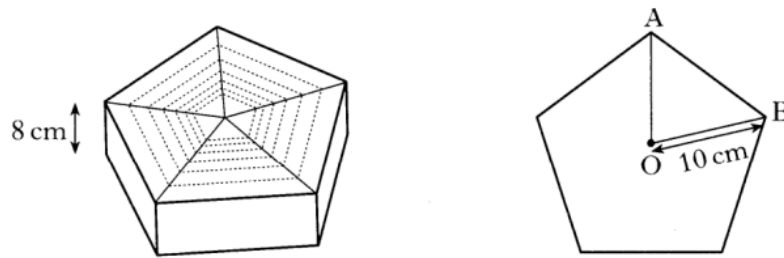
The vertical edge of the doorway is 1800 millimetres.



Calculate the width of the doorway.

5

Q9. A gift box, 8 centimetres high, is prism shaped.



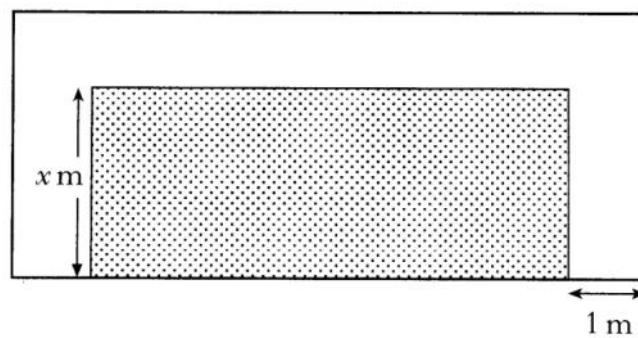
The uniform cross-section is a regular pentagon.

Each vertex of the pentagon is 10 centimetres from the centre O.

Calculate the volume of the box.

5

Q11. A rectangular lawn has a path, 1 metre wide, on 3 sides as shown.



The breadth of the lawn is x metres.

The length of the lawn is three times its breadth.

The area of the lawn equals the area of the path.

(a) Show that $3x^2 - 5x - 2 = 0$.

3

(b) Hence find the **length** of the lawn.

4