GCSE Grade 5

Maths Booklet 2

Paper 1H
Non-Calculator

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1 (a) Work out an estimate for the value of $\sqrt{63.5 \times 101.7}$

.....

(2)

$(2.3)^6 = 148$ correct to 3 significant figures.

(b) Find the value of $(0.23)^6$ correct to 3 significant figures.

.....

(1)

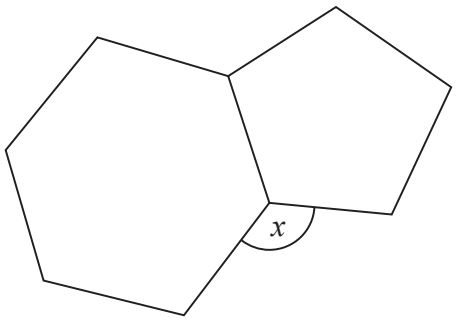
(c) Find the value of 5^{-2}

.....

(1)

(Total for Question 1 is 4 marks)

2 Here is a regular hexagon and a regular pentagon.



Work out the size of the angle marked x.
You must show all your working.

.....°

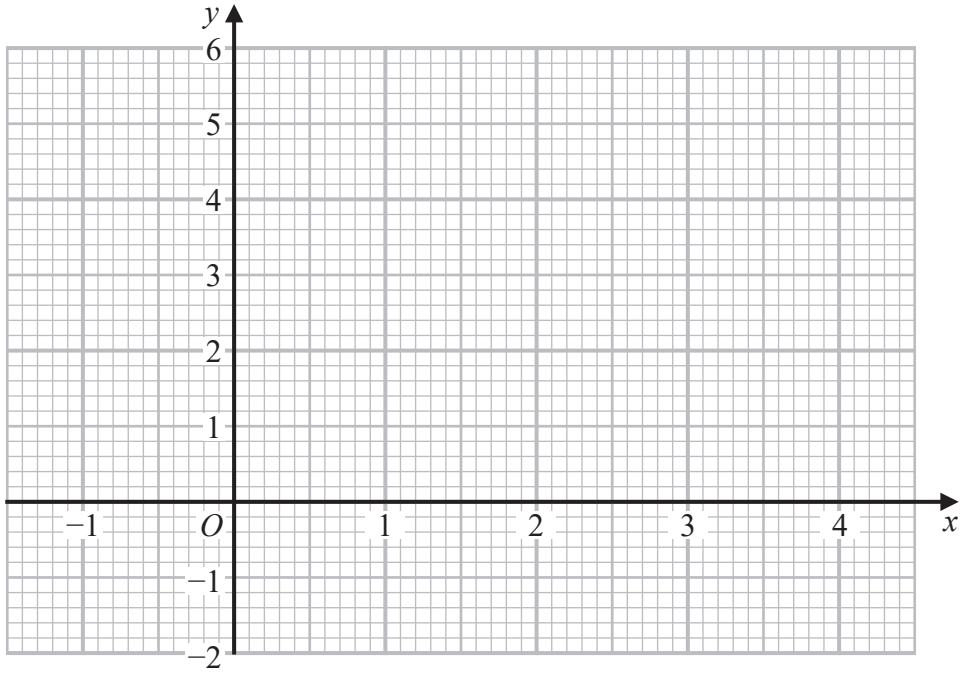
(Total for Question 2 is 3 marks)

3 (a) Complete the table of values for $y = x^2 - 3x + 1$

x	-1	0	1	2	3	4
y		1	-1			

(2)

(b) On the grid, draw the graph of $y = x^2 - 3x + 1$ for values of x from -1 to 4



(2)

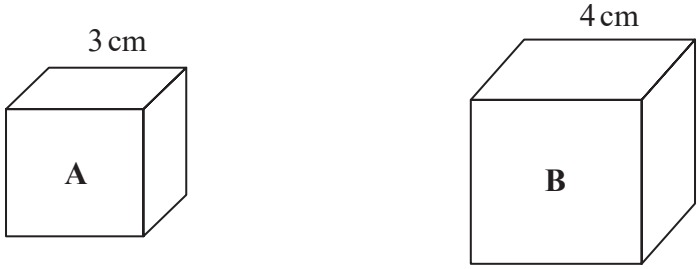
(c) Using your graph, find estimates for the solutions of the equation $x^2 - 3x + 1 = 0$

.....

(2)

(Total for Question 3 is 6 marks)

4 Here are two cubes, **A** and **B**.



Cube **A** has a mass of 81 g.

Cube **B** has a mass of 128 g.

Work out

the density of cube **A** : the density of cube **B**

Give your answer in the form $a : b$, where a and b are integers.

.....

(Total for Question 4 is 3 marks)

5 The table shows the amount of snow, in cm, that fell each day for 30 days.

Amount of snow (s cm)	Frequency
$0 \leqslant s < 10$	8
$10 \leqslant s < 20$	10
$20 \leqslant s < 30$	7
$30 \leqslant s < 40$	2
$40 \leqslant s < 50$	3

Work out an estimate for the mean amount of snow per day.

..... cm

(Total for Question 5 is 3 marks)

6 Solve the simultaneous equations

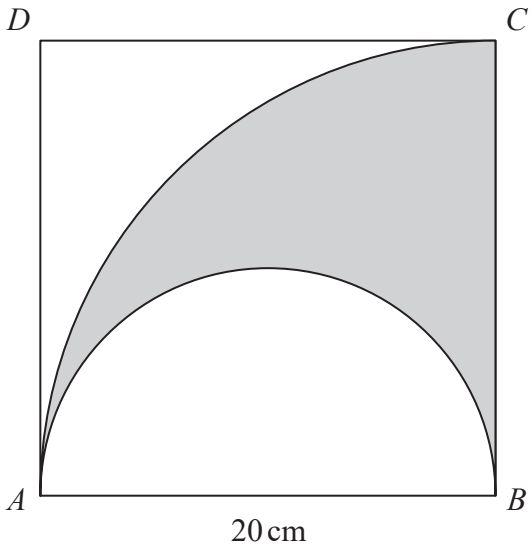
$$5x + y = 21$$
$$x - 3y = 9$$

$x =$ .....

$y =$ .....

(Total for Question 6 is 3 marks)

7 The diagram shows a square $ABCD$ with sides of length 20 cm.
It also shows a semicircle and an arc of a circle.



AB is the diameter of the semicircle.
AC is an arc of a circle with centre B.

Show that $\dfrac{\text{area of shaded region}}{\text{area of square}} = \dfrac{\pi}{8}$

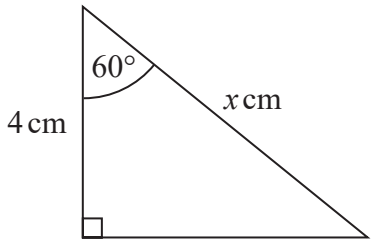
(Total for Question 7 is 4 marks)

8 (a) Write down the exact value of tan 45°

.....

(1)

Here is a right-angled triangle.



cos 60° = 0.5

(b) Work out the value of x.

.....

(2)

(Total for Question 8 is 3 marks)