

Mock Grade 5

Maths

Booklet 2

Paper 1H

Non-Calculator

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- 1 (a) Work out an estimate for the value of $\frac{21.75 + \sqrt{98.1}}{0.192}$

.....
(2)

$(2.2)^8 = 549$ correct to 3 significant figures.

- (b) Find the value of $(2.2)^8$ correct to 3 significant figures.

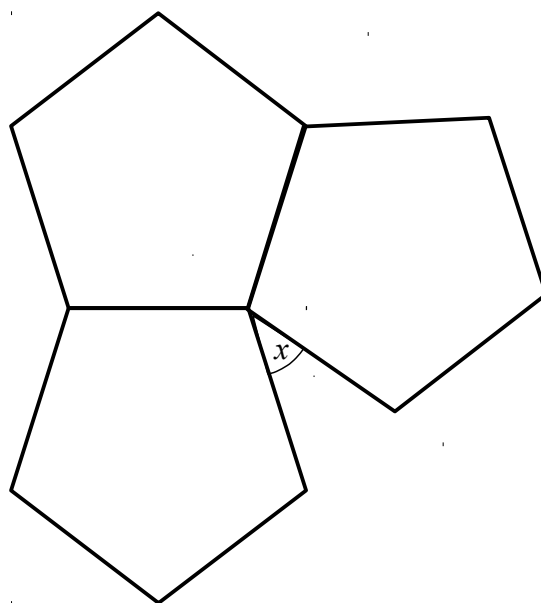
.....
(1)

- (c) Find the value of 4^{-3}

.....
(1)

(Total for Question 1 is 4 marks)

- 2 The diagram shows three regular pentagons meeting at a point.



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

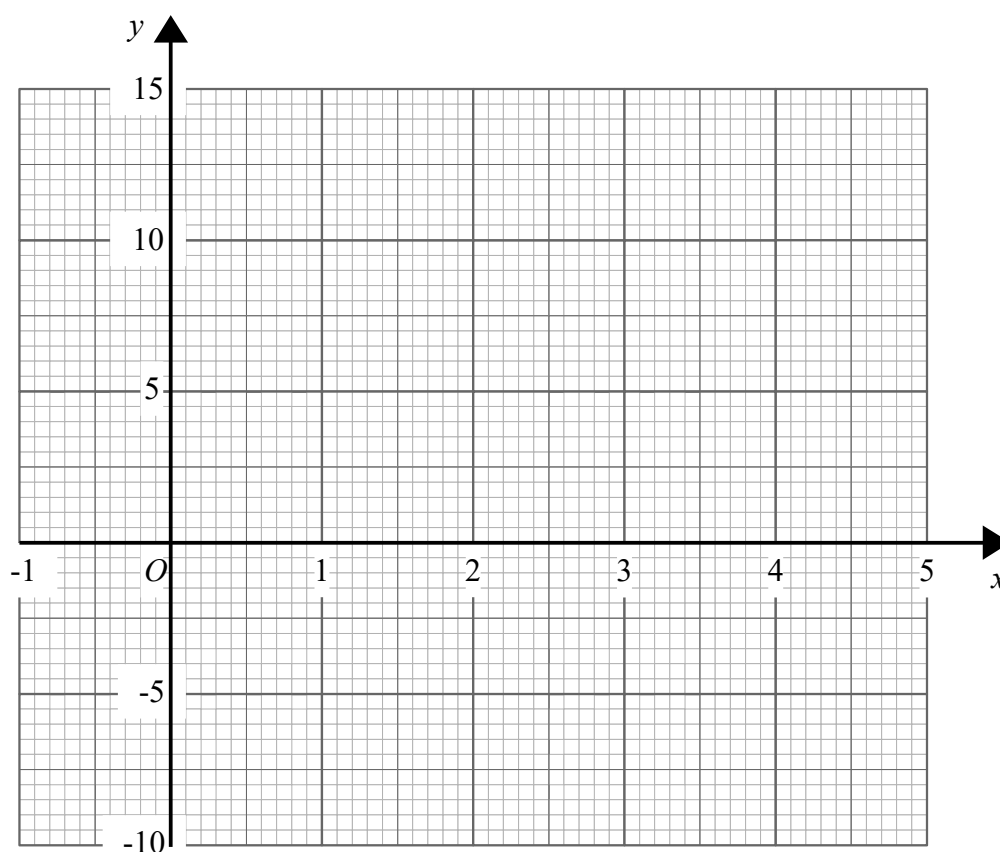
(Total for Question 2 is 3 marks)

3 (a) Complete the table of values for $y = -(2x^2 + 7x)$

x	-1	0	1	2	3	4
y						

(2)

(b) On the grid, draw the graph of $y = -(2x^2 + 7x)$ for values of x from -1 to 4



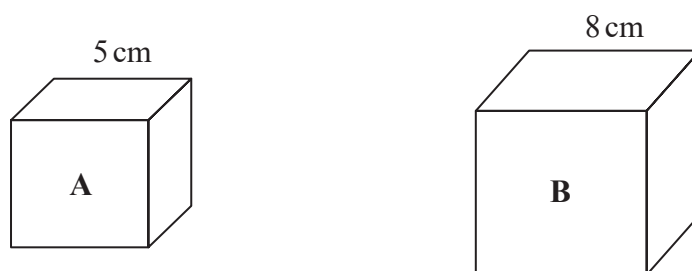
(2)

(c) Using your graph, find estimates for the solutions of the equation $-(2x^2 + 7x) = 3$

(2)

(Total for Question 3 is 6 marks)

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



Cube **A** has a mass of 500 g.

Cube **B** has a mass of 256 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
$0 \leq s < 10$	12
$10 \leq s < 20$	7
$20 \leq s < 30$	6
$30 \leq s < 40$	3
$40 \leq s < 50$	2

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

$$4x + 2y = 8$$

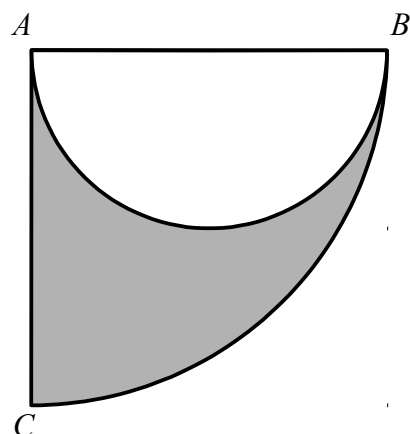
$$3x - 5y = 19$$

$$x = \dots\dots\dots$$

$$y = \dots\dots\dots$$

(Total for Question 6 is 3 marks)

- 7 The diagram shows a semi circle inside a sector of a circle, AB.



AB is the diameter of the semicircle.

Angle $BAC = 90^\circ$

$AB = 12$ cm

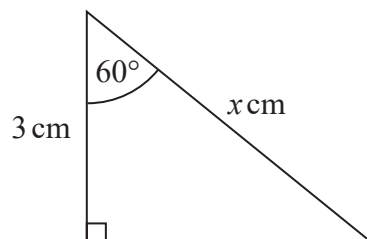
Show that $\frac{\text{area of shaded region}}{\text{area of sector}} = \frac{1}{2}$

(Total for Question 7 is 4 marks)

- 8 (a) Write down the exact value of $\sin 45^\circ$

.....
(1)

Here is a right-angled triangle.



$$\sin 30^\circ = 0.5$$

- (b) Work out the value of x .

.....
(2)

(Total for Question 8 is 3 marks)