

Please write clearly in block capitals.

Centre number

Candidate number

Surname _____

Forename(s) _____

Candidate signature _____

I declare this is my own work.

Functional Skills Level 2

MATHEMATICS

Paper 2 Calculator

Monday 9 January 2023

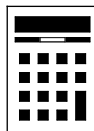
Afternoon

Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:

- a calculator
- mathematical instruments.



Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.
- State the units of your answer where appropriate.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 60.
- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer book.
- If your calculator does not have a π button, take the value of π to be 3.142

Advice

In all calculations, show clearly how you work out your answer.

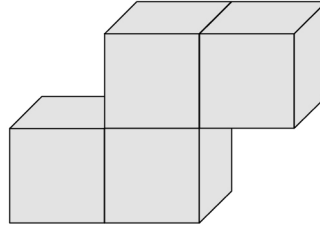
For Examiner's Use	
Question	Mark
1–6	
7	
8	
9	
10	
TOTAL	



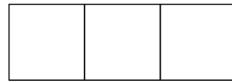
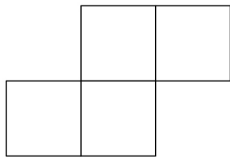
J A N 2 3 8 3 6 2 2 0 1

Section AAnswer **all** questions in the spaces provided.

- 1** Here is a solid made from four cubes.



Circle the plan view of the solid.

[1 mark]

- 2** Write the number 2 307 049 in words.

[1 mark]



3 Which is closer in value to 0.5

0.379 or 0.614 ?

You **must** show your working.

[2 marks]

Answer _____

4

Surface area of a sphere = $4\pi r^2$

Work out the surface area of a sphere with a radius of 2.3 cm
State the units of your answer.

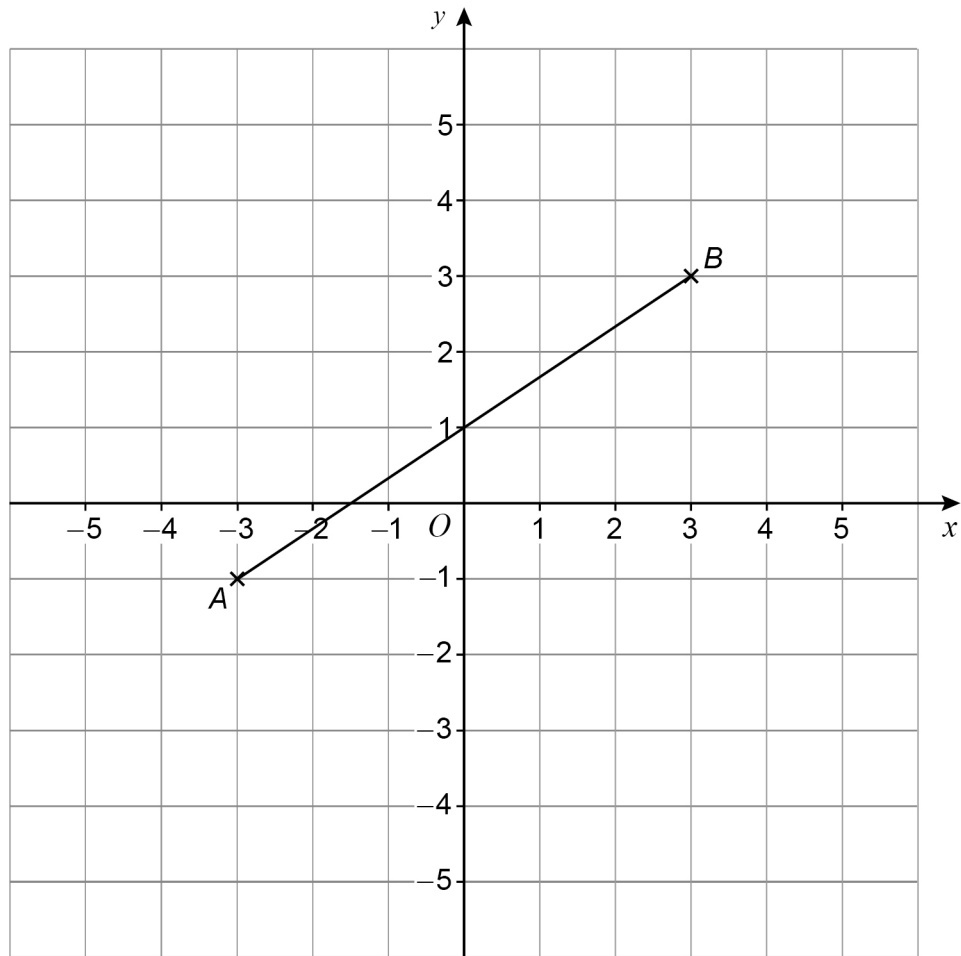
[3 marks]

Answer _____

Turn over ►



5



Point C is the midpoint of line AB.

Plot point C on the grid and write down the coordinates of C.

[2 marks]

Answer (_____ , _____)



6 The table contains grouped data.

x	Frequency	Mid-point	
$0 < x \leq 20$	7	10	
$20 < x \leq 40$	9	30	
$40 < x \leq 50$	4	45	
	Total = 20		

Work out an estimate of the mean of x .

[3 marks]

Answer _____

12

Turn over for Section B

Turn over ►



8 Lifeguard

Talia is a lifeguard at a swimming pool.

8 (a) One morning, Talia checked the water temperature in the pool each hour.

Time	8 am	9 am	10 am	11 am
Temperature in °F	75	80	81	87

The formula to convert Fahrenheit (F) into Celsius (C) is

$$C = \frac{5}{9} (F - 32)$$

What time was the first check where the water temperature was above 26°C?

You **must** show your working.

[3 marks]

Answer _____



8 (b) There are 90 people in the pool.

number of adults : number of children = 3 : 2

One lifeguard is needed for every 10 children.

How many lifeguards are needed for the children in the pool?

[4 marks]

Answer _____

7

Turn over for the next question

Turn over ►



9 Hedgehogs

Aahad works for a charity that rescues hedgehogs.

9 (a) The charity has four main costs each month.

	Cost per month
Straw	£25
Feed	£39
Electricity	£68
Vets	£235

From next month the costs are changing.

- Straw will be free from a local farm
- Feed is increasing by $\frac{1}{6}$
- Electricity is increasing by £324 a year
- The cost of the vets will be £3090 a year.

The charity receives a new monthly donation of £30

Is the new donation enough to pay for the **increase** in total monthly costs?

You **must** show your working.

[5 marks]



- 9 (b)** The charity needs a new building for the hedgehogs.
The new building will cost £250 000
The charity invested £245 000 in a bank account 2 years ago.
The account pays 1.2% compound interest each year.

Is there enough money in the bank account to pay for the building?
You **must** show your working.

[3 marks]

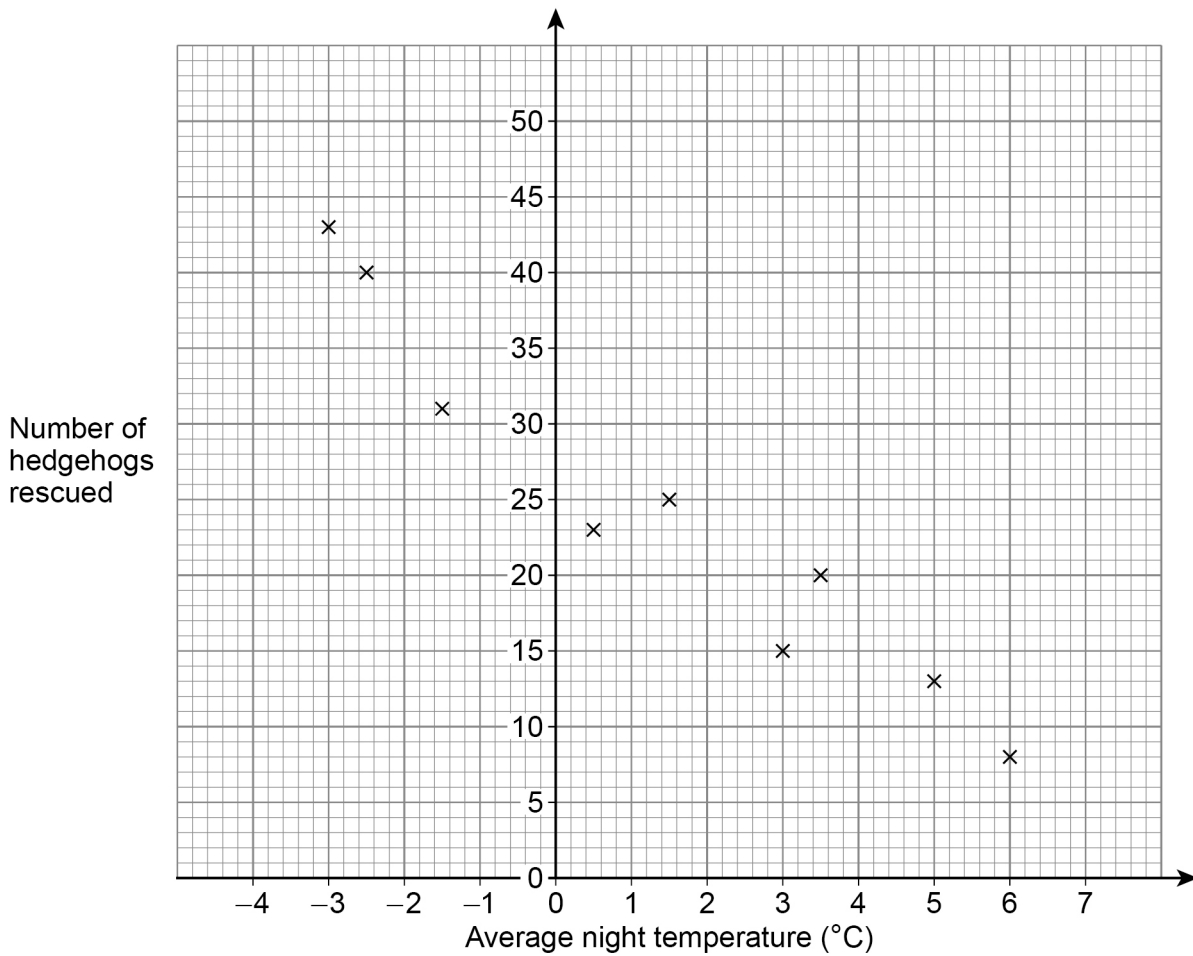
Question 9 continues on the next page

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Each week Aahad records the number of hedgehogs rescued and the average night temperature that week.

The scatter diagram shows information for the last 9 weeks.



- 9 (c) Describe the relationship between average night temperature and number of hedgehogs rescued.

[1 mark]



9 (d) In week A the average night temperature was -2°C
In week B the average night temperature was 4°C

Use the scatter diagram to estimate how many **more** hedgehogs were rescued in week A than in week B.

You **must** show your working, some of which should be on the diagram.

[4 marks]

Answer _____

13

Turn over for the next question

Turn over ►



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outside the
box*

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ANSWER IN THE SPACES PROVIDED**



