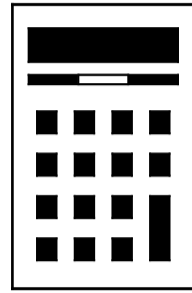


AQA **Surname** _____**Forename(s)** _____**Centre Number** _____**Candidate Number** _____**Candidate Signature** _____**I declare this is my own work.****Functional Skills Level 2****MATHEMATICS****Paper 2 Calculator****8362/2****Monday 9 January 2023 Afternoon****Time allowed: 1 hour 30 minutes****At the top of the page, write your surname and forename(s), your centre number, your candidate number and add your signature.****[Turn over]**

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 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.

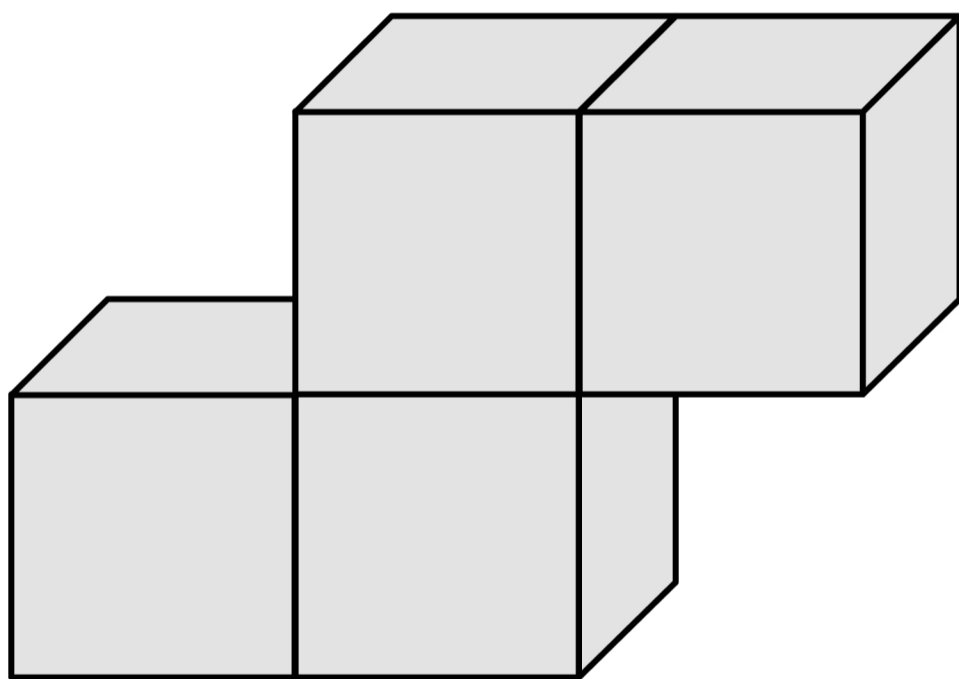
DO NOT TURN OVER UNTIL TOLD TO DO SO



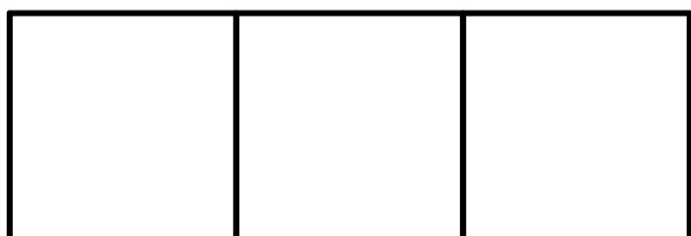
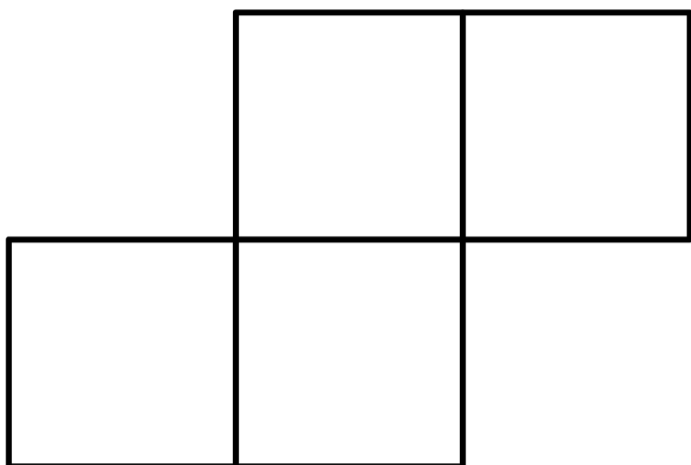
SECTION A

Answer all questions in the spaces provided.

1 Here is a solid made from four cubes.



On the opposite page, circle the plan view of the solid. [1 mark]



[Turn over]



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]

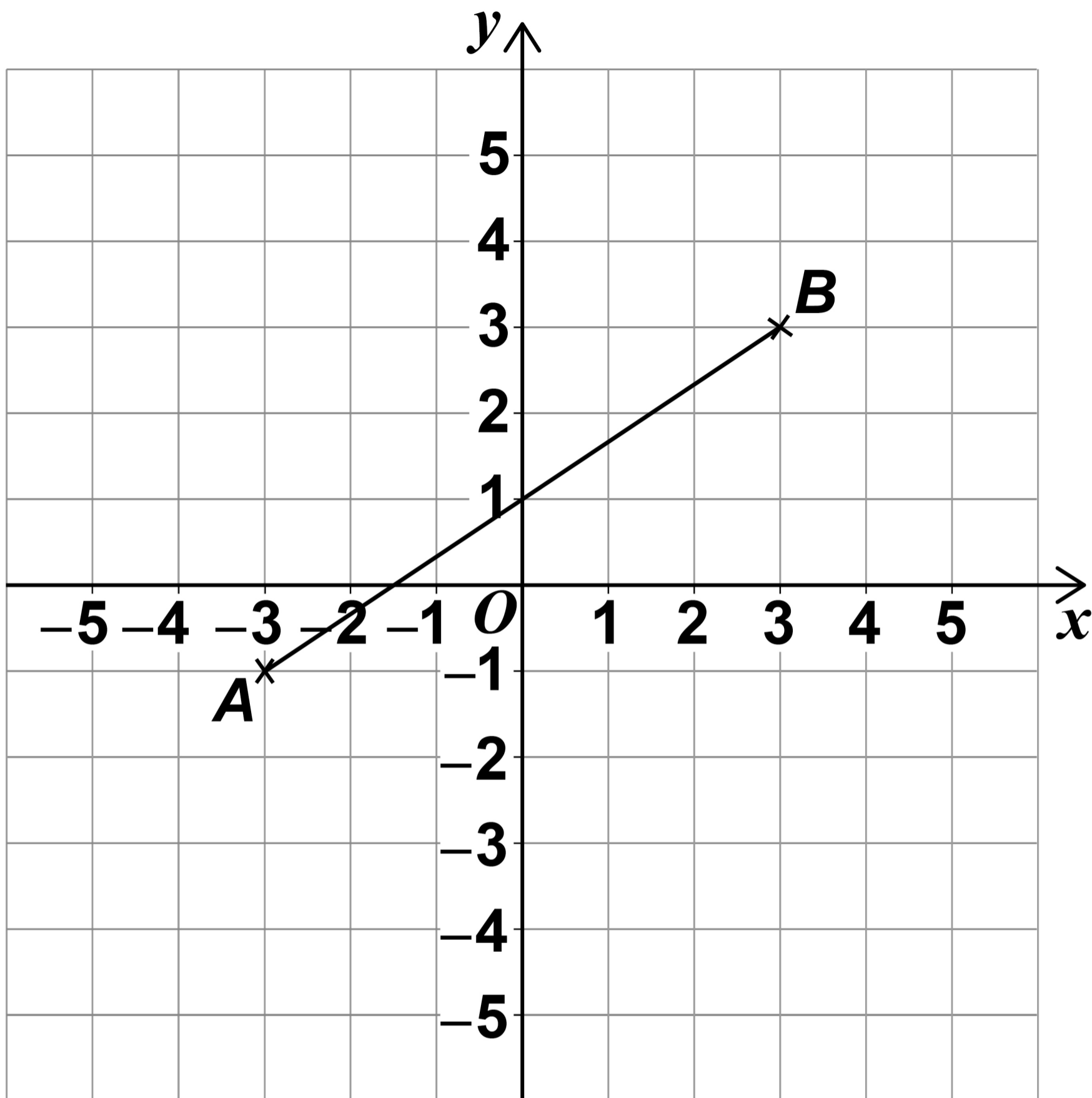


5 Point C is the midpoint of line AB, on the opposite page.

Plot point C on the grid and write down the coordinates of C. [2 marks]

Answer (_____ , _____)





[Turn over]





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 | | |

10

Work out an estimate of the mean of x . [3 marks]



Answer

12

[Turn over]

11

SECTION B

Answer ALL questions in the spaces provided.

7 SCHOOL OFFICE

Ashley works in a school office.

7 (a) Ashley needs 29 book bags.

He sees these offers online.

BEST BOOK BAGS

Book bags £4.99 each

For every 7 you buy

you get an extra 1 free

Free delivery



BAGS AND STUFF

Book bags reduced to £4.25 each

Delivery charge £3.90 per order

Ashley wants the cheapest total price for the 29 bags and delivery.

Which offer should he choose?

**You MUST show your working.
[5 marks]**

[Turn over]





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[Turn over]

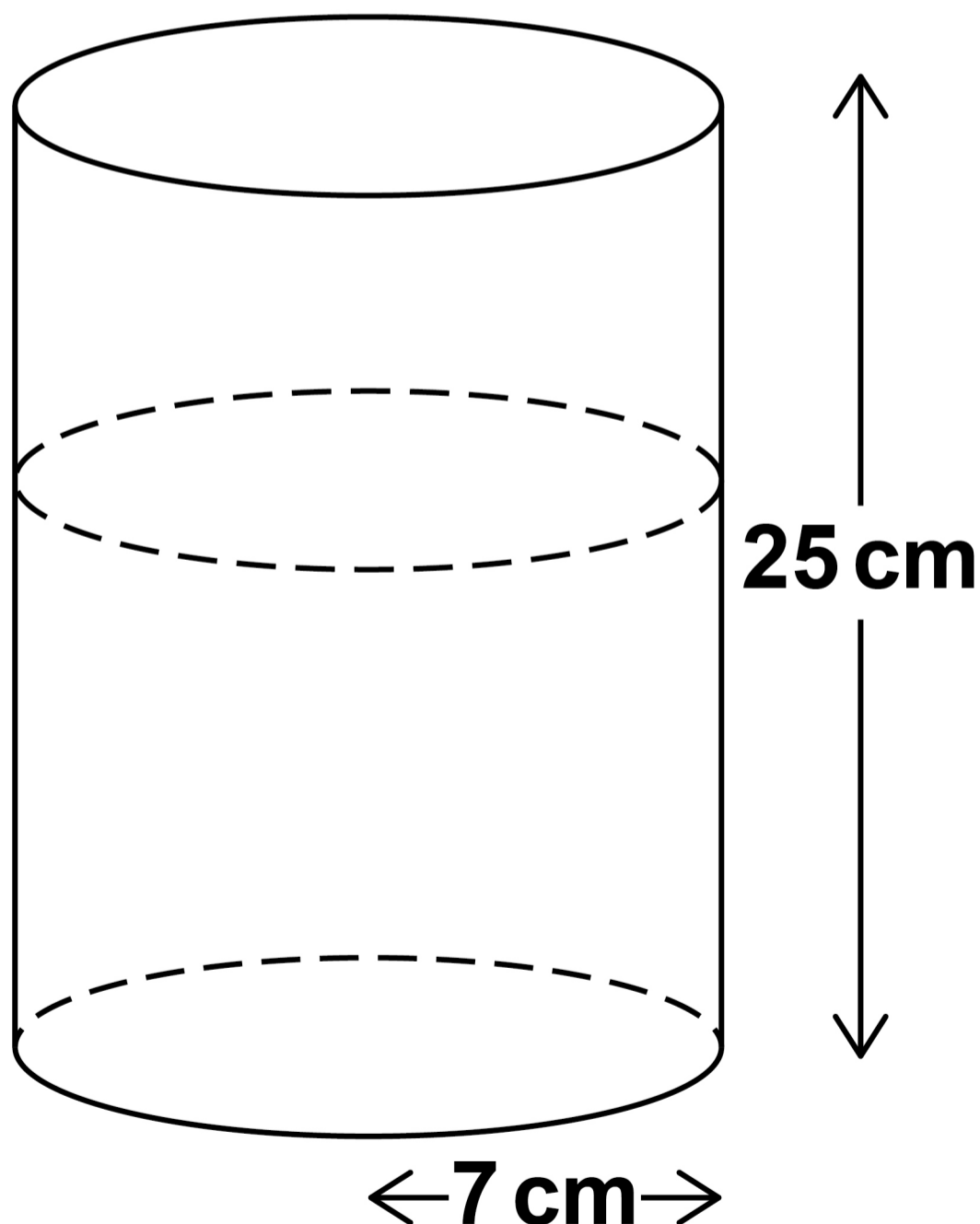


7 (b) Ashley needs to put drinking water into 40 jugs before break time.

Each jug

is a cylinder with radius 7 cm and height 25 cm

will be $\frac{3}{5}$ full.



Water flows out of the tap at 13 litres per minute.

$1000 \text{ cm}^3 = 1 \text{ litre}$

Can Ashley put the right amount of water into all 40 jugs in 6 minutes?

**You MUST show your working.
[6 marks]**

[Turn over]



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| 11 |



8 LIFEGUARD

Talia is a lifeguard at a swimming pool.

[Turn over]



- 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 _____

[Turn over]



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 _____

[Turn over]

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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]**

[Turn over]



BLANK PAGE

[Turn over]



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?

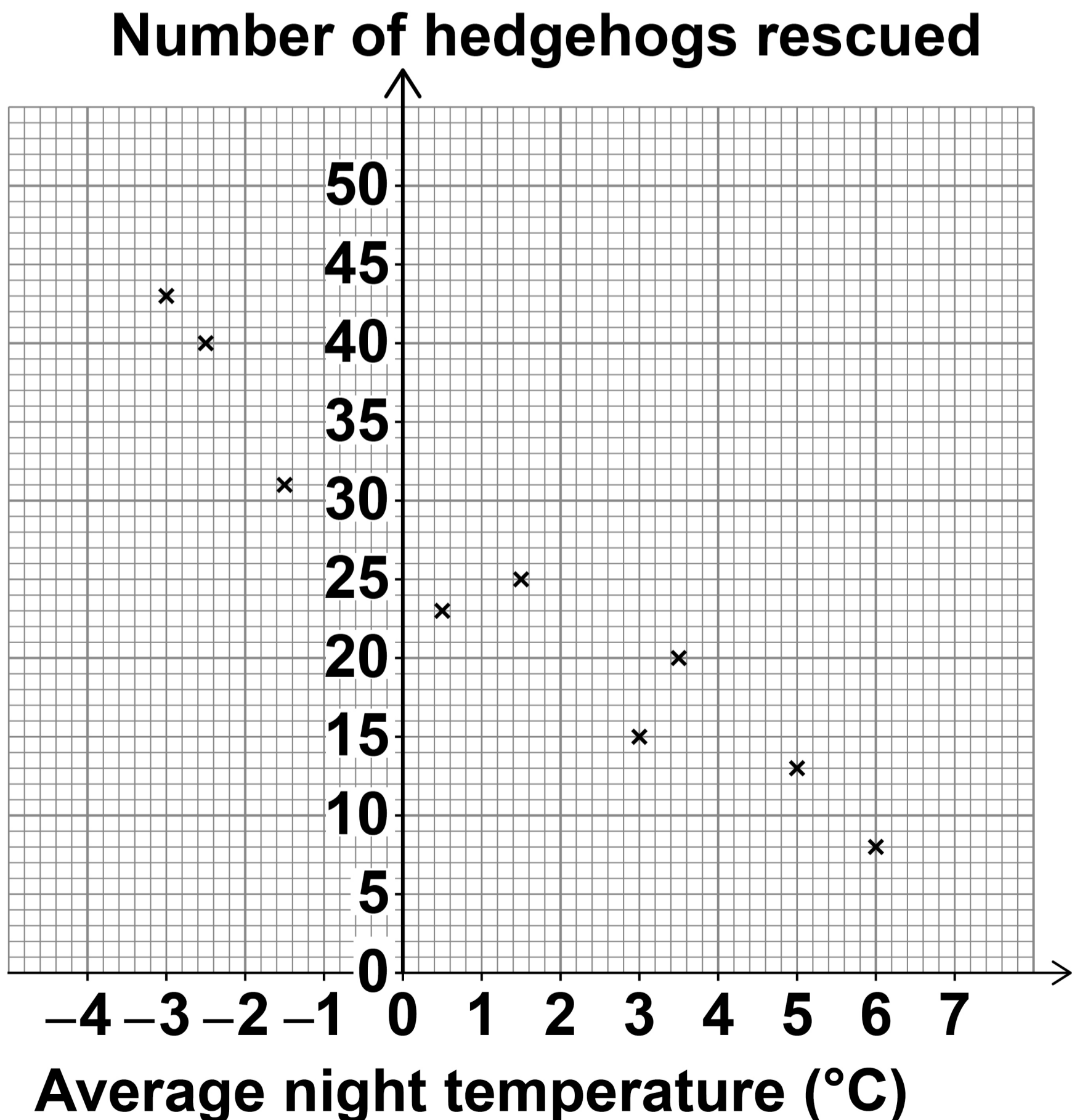
**You MUST show your working.
[3 marks]**

[Turn over]



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]

[Turn over]

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, on page 30, 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, on page 30. [4 marks]

Answer _____

[Turn over]

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10 HOUSEWORK

David is doing housework.

10 (a) David is washing clothes.

WASHING POWDER

3900g

Use 65g per wash

WASHING LIQUID

1540ml

Use 35 ml per wash

David says,

“I can do AT LEAST 32% more washes with the powder than the liquid.”



Is he correct?

**You MUST show your working.
[5 marks]**

[Turn over]





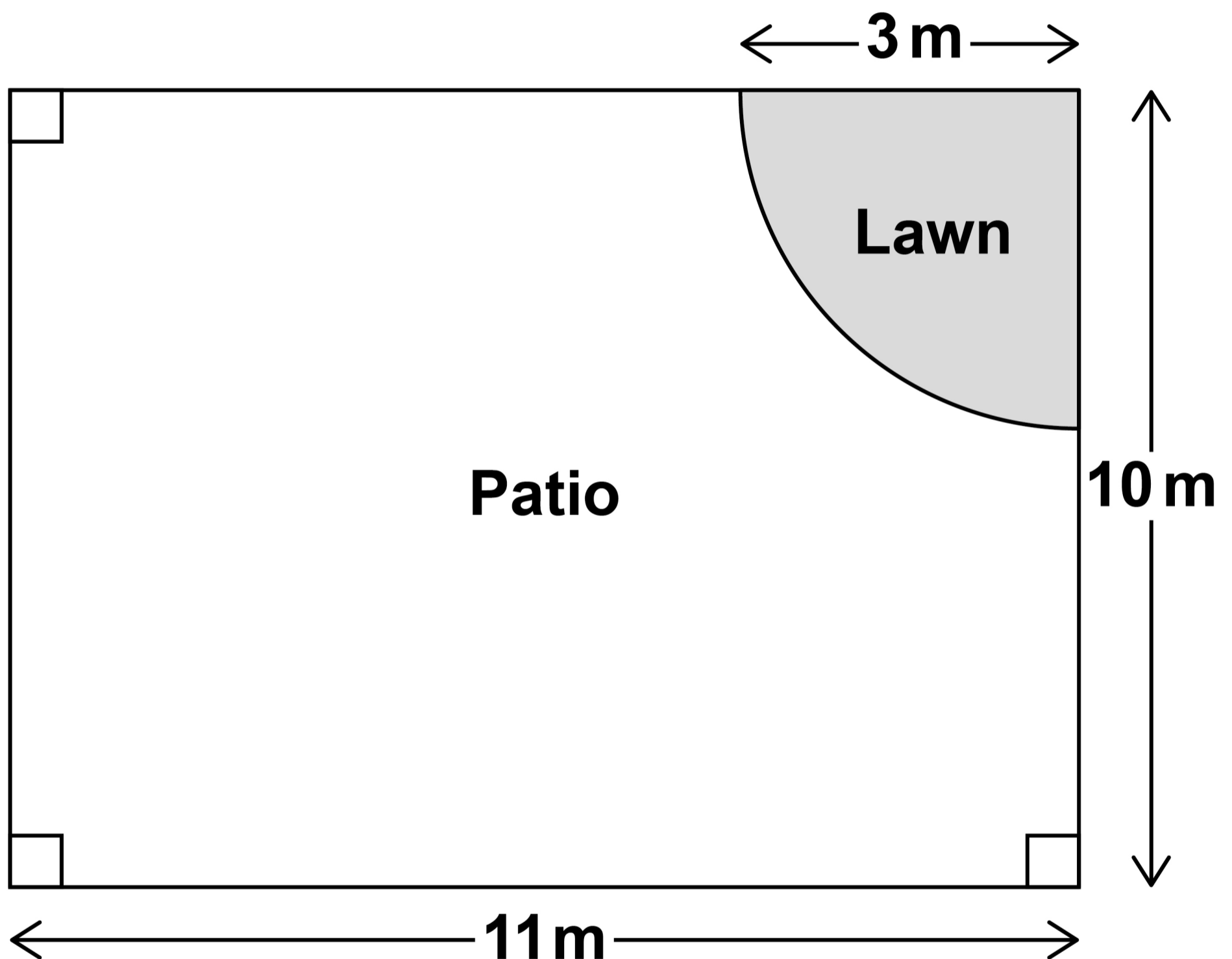
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[Turn over]



10(b) David is going to clean the patio.

The diagram is not drawn accurately.



The lawn is a quarter circle with radius 3 m



Each bottle of cleaner

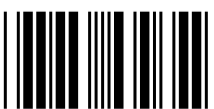
cleans 15 m² of patio

costs £1.95

Work out the cost of the bottles of cleaner that David needs to clean the patio.

**You MUST show your working.
[6 marks]**

[Turn over]



40

Answer £ _____



BLANK PAGE

[Turn over]



10 (c) David makes a cleaning spray using vinegar and water.

The cleaning spray needs to be 700 ml in total 45% vinegar.

David has put HALF A PINT of vinegar in the spray bottle.

How much MORE vinegar and how much water does he need to add?

Use 1 pint = 568 ml

**State the units of your answers.
[6 marks]**



[Turn over]



Vinegar _____

Water _____

END OF QUESTIONS

| |
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| 17 |



Additional page, if required.

Write the question numbers in the left-hand margin.

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| For Examiner's Use | |
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| Question | Mark |
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| TOTAL | |

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4 8



2 3 1 A 8 3 6 2 / 2