



Surname _____

Other Names _____

Centre Number _____

Candidate Number _____

Candidate Signature _____

I declare this is my own work.

Functional Skills Level 2

MATHEMATICS

Paper 2 Calculator

8362/2

Time allowed: 1 hour 30 minutes

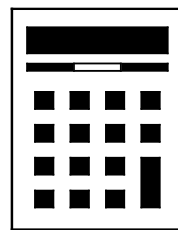
At the top of the page, write your surname and other names, your centre number, your candidate number and add your signature.

[Turn over]



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 The probability of an event
 happening is $\frac{3}{5}$**

**Circle the probability of the event
NOT happening. [1 mark]**

1 **$\frac{2}{5}$** **$\frac{3}{5}$** **0**

2 $x = 5$ and $y = -3.2$

Work out the value of $x + y^2$

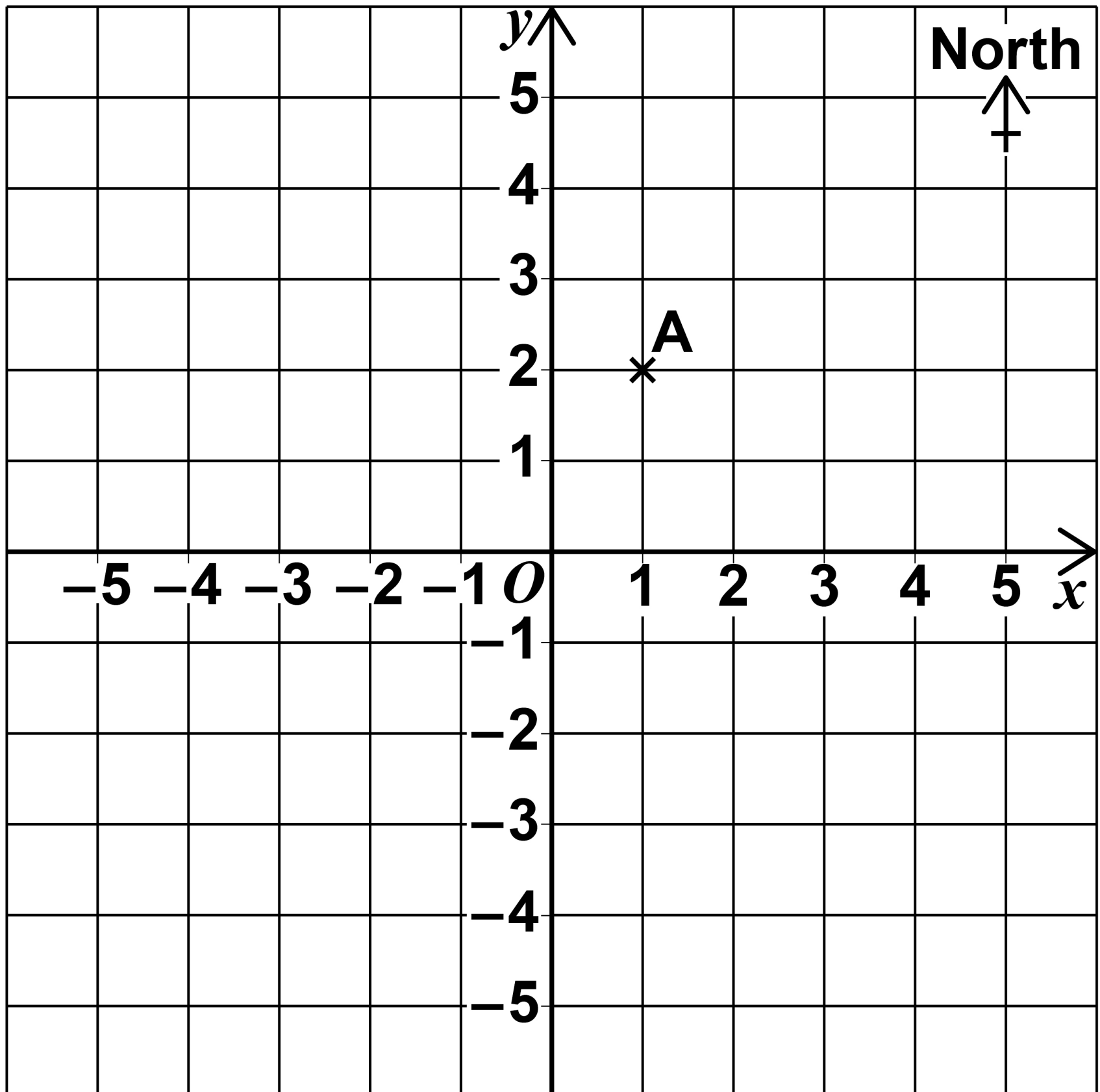
[2 marks]

Answer _____

[Turn over]



3



A is the point (1, 2)

B is the point
3 squares West of A
and
5 squares South of A.



Work out the coordinates of B .
[2 marks]

Answer (_____ , _____)

[Turn over]



4 In the boxes, write the number that is

3 more than -8

4 less than -2

halfway between -7 and 5

[3 marks]



5 Write the ratio 144 : 90 in its simplest form. [2 marks]

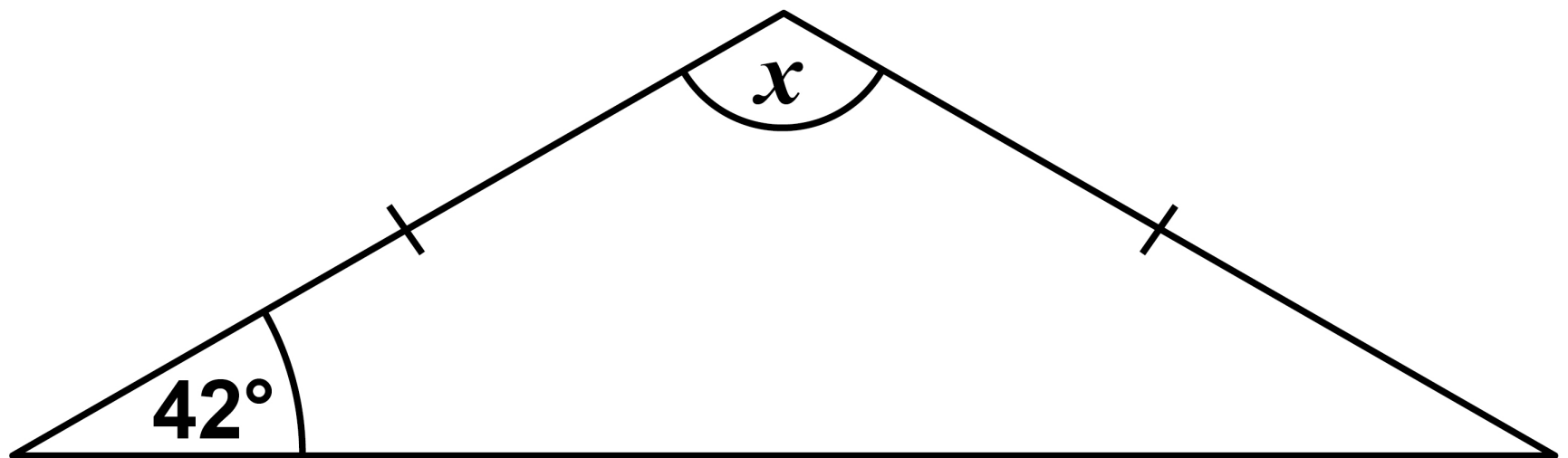
Answer _____ :

[Turn over]



6 Here is an isosceles triangle.

The diagram is not drawn accurately.



Work out the size of angle x .
[2 marks]

Answer _____ °



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[Turn over]



SECTION B

Answer ALL questions in the spaces provided.

7 ENERGY

Jim's house has gas central heating.

7 (a) The charges for the gas Jim uses are shown in the table.

Cost per unit of gas (kWh)	2.92 p
Standing charge per day	39.6 p

In November, Jim uses 1976 kWh of gas.



Use APPROXIMATIONS to estimate Jim's November gas payment.

**Give your answer in pounds.
[5 marks]**

[Turn over]



Answer £

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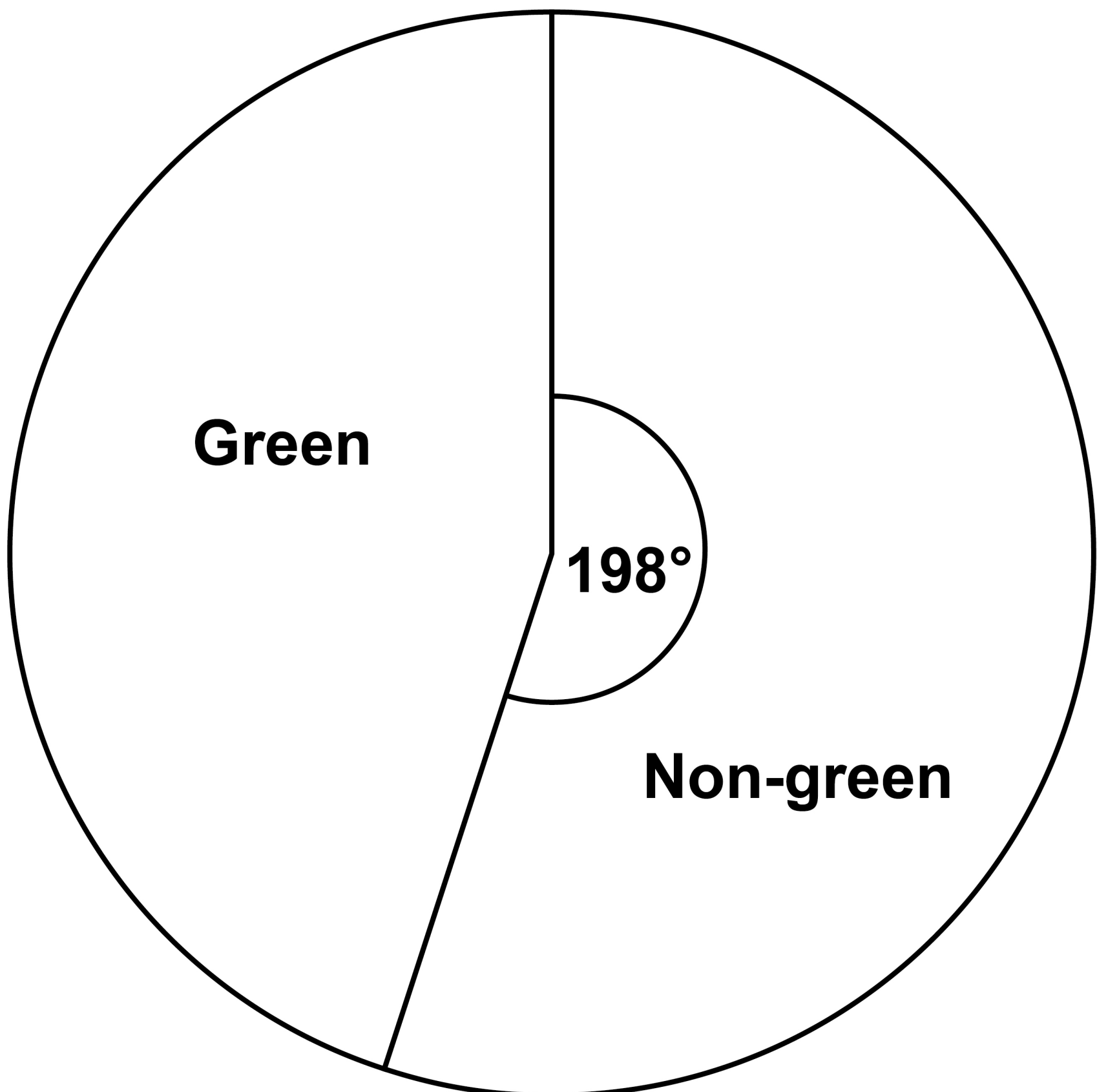
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7 (b) Jim's current gas company produces 43% of their gas from green sources.

He sees this pie chart for another gas company, MixGas.

GAS SOURCE



Jim wants to use the company with a greater proportion of gas from green sources.

Should Jim change to MixGas?

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

[Turn over]



7 (c) Jim is thinking of buying solar panels.

The price of these panels has decreased by 27% since 2016

Jim would need to pay £4803.40 for the panels now.

How much would the panels have cost in 2016? [3 marks]

Answer £ _____



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[Turn over]



8 DOG

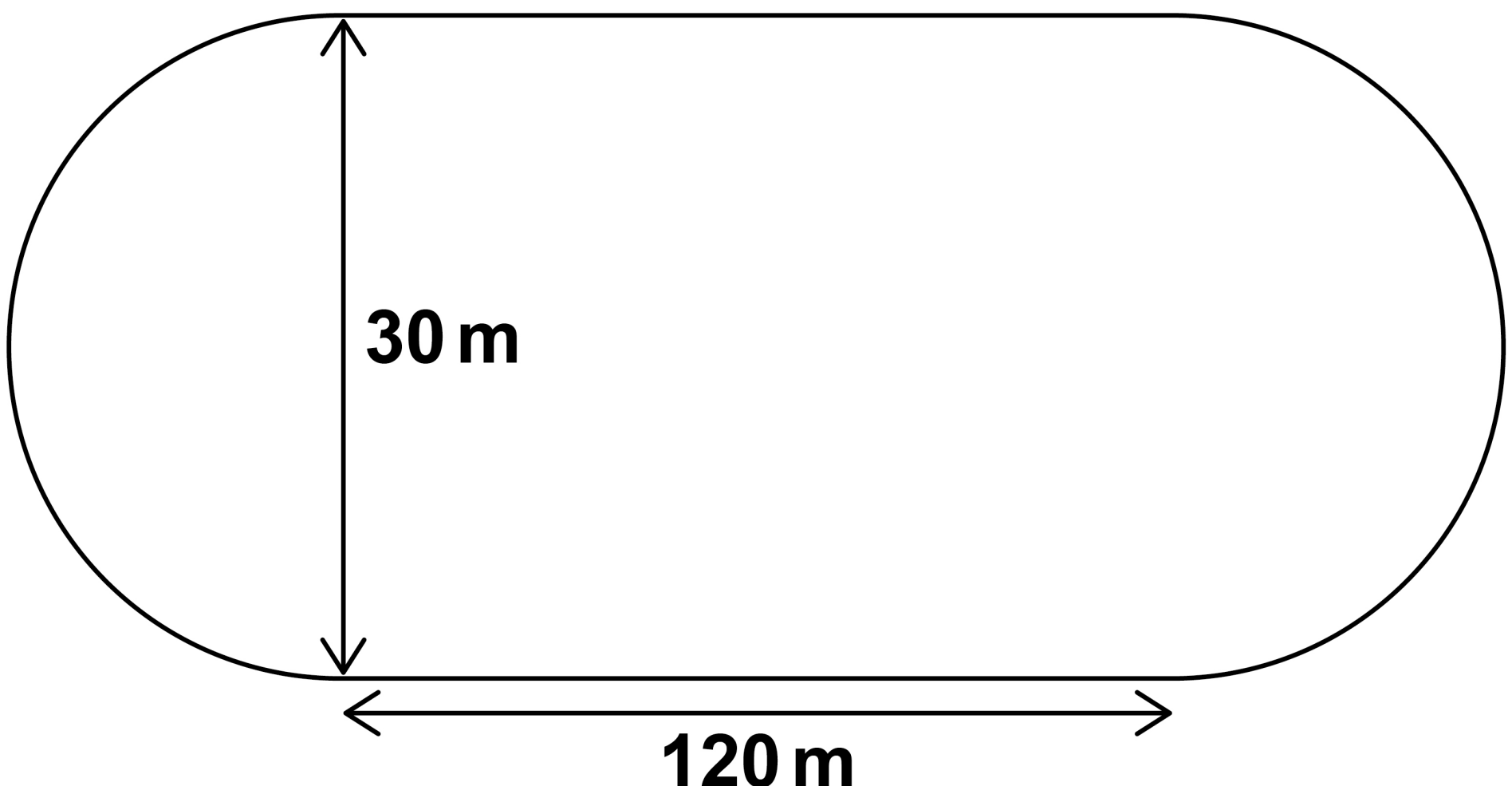
Ben has a dog called Pluto.

8(a) Ben takes Pluto for a walk.

They walk 4 LAPS of a sports track.

The sports track is the shape of two semi-circles joined by two straight sections.

The diagram is not drawn accurately.



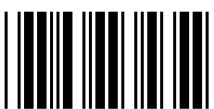
Ben has a target to walk 5000 m each day.

What percentage of his daily target has Ben completed on this walk?
[5 marks]

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Answer _____ %

[Turn over]



8 (b) Pluto needs to eat 420 grams of food each day, in the ratio

wet food : dry food = 2 : 5

Ben buys a 12 kilogram bag of DRY food.

How many days of DRY food does the bag provide? [4 marks]



Answer _____ days

[Turn over]

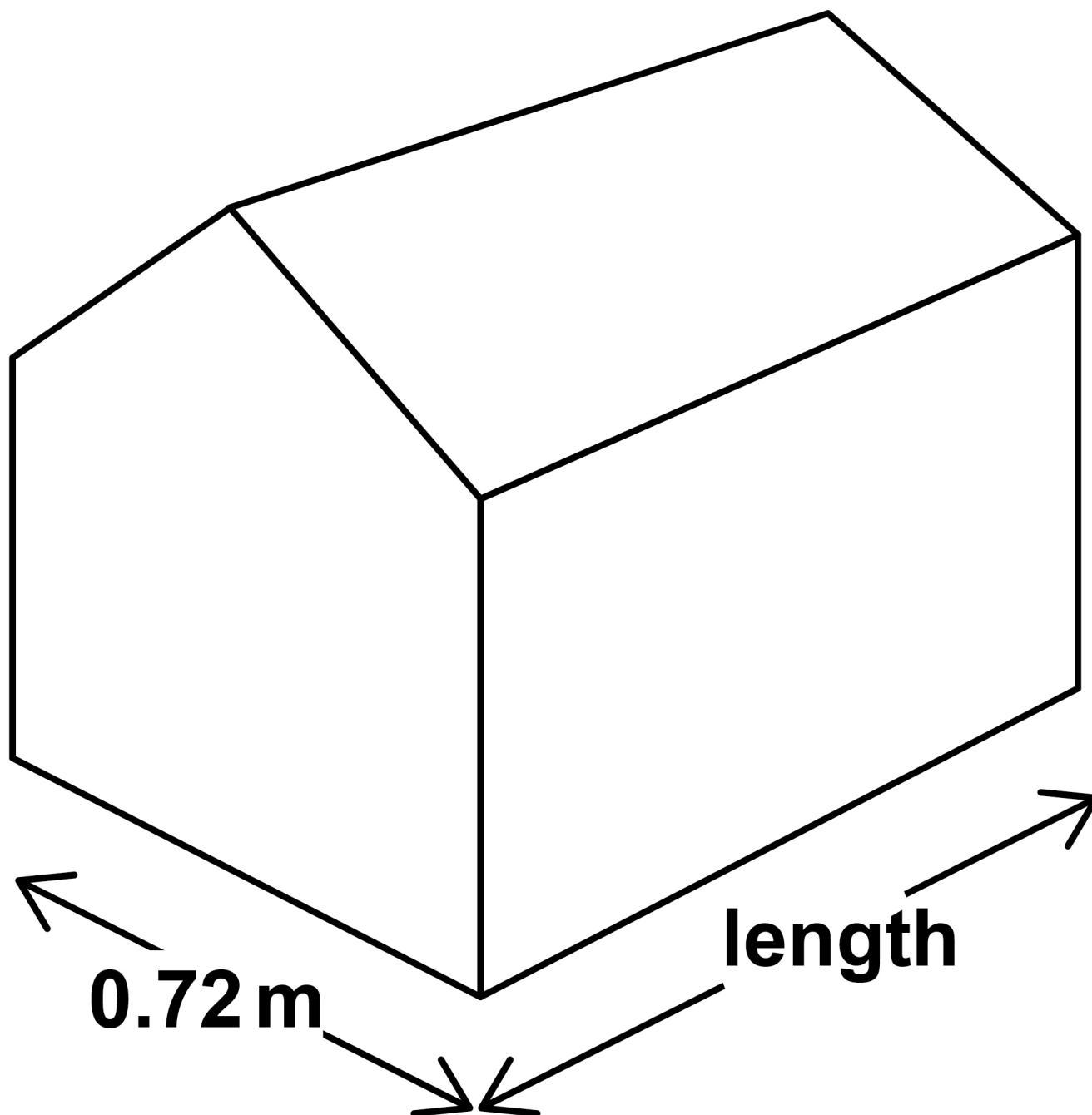


8 (c) In his garden, Ben has a rectangular fenced area for Pluto.

The fenced area measures 2.4 m by 2.25 m

Ben builds a kennel for Pluto which covers $\frac{1}{6}$ of the fenced area.

Here is a sketch of the kennel.



The base of the kennel is a rectangle.

**Work out the length of the kennel.
[4 marks]**

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Answer **m**

[Turn over]



9 FUNDRAISING

A charity organises an annual sponsored swim.

9 (a) Ahmed swam 50 lengths of a pool that is 25 metres long.

The swim took him 38 minutes.

Ahmed says,

“My average speed was more than 0.7 metres per second.”

Is Ahmed correct?

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



[Turn over]



9 (b) Ahmed collected £35 for his swim and gave it to the charity.

$\frac{6}{7}$ of this money was donated by taxpayers.

Using Gift Aid, the charity claimed an extra 25p for every £1 donated by a taxpayer.

How much money did the charity receive, INCLUDING Gift Aid, from Ahmed's swim? [3 marks]



Answer £

[Turn over]

9 (c) This year, 20 people completed the sponsored swim.

The table shows information about the sponsored money collected.

Money (£ x)	Frequency	Mid-point	
$0 < x \leq 10$	7		
$10 < x \leq 20$	4		
$20 < x \leq 30$	6		
$30 < x \leq 40$	1		
$40 < x \leq 50$	2		
Total = 20			



Last year, the mean amount collected per swimmer was £14.85

**The charity organiser says,
“This year’s mean amount is MORE THAN £3 higher than last year’s.”**

**Show your working to support this statement.
[5 marks]**

31

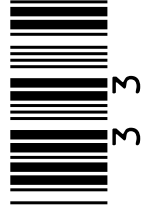
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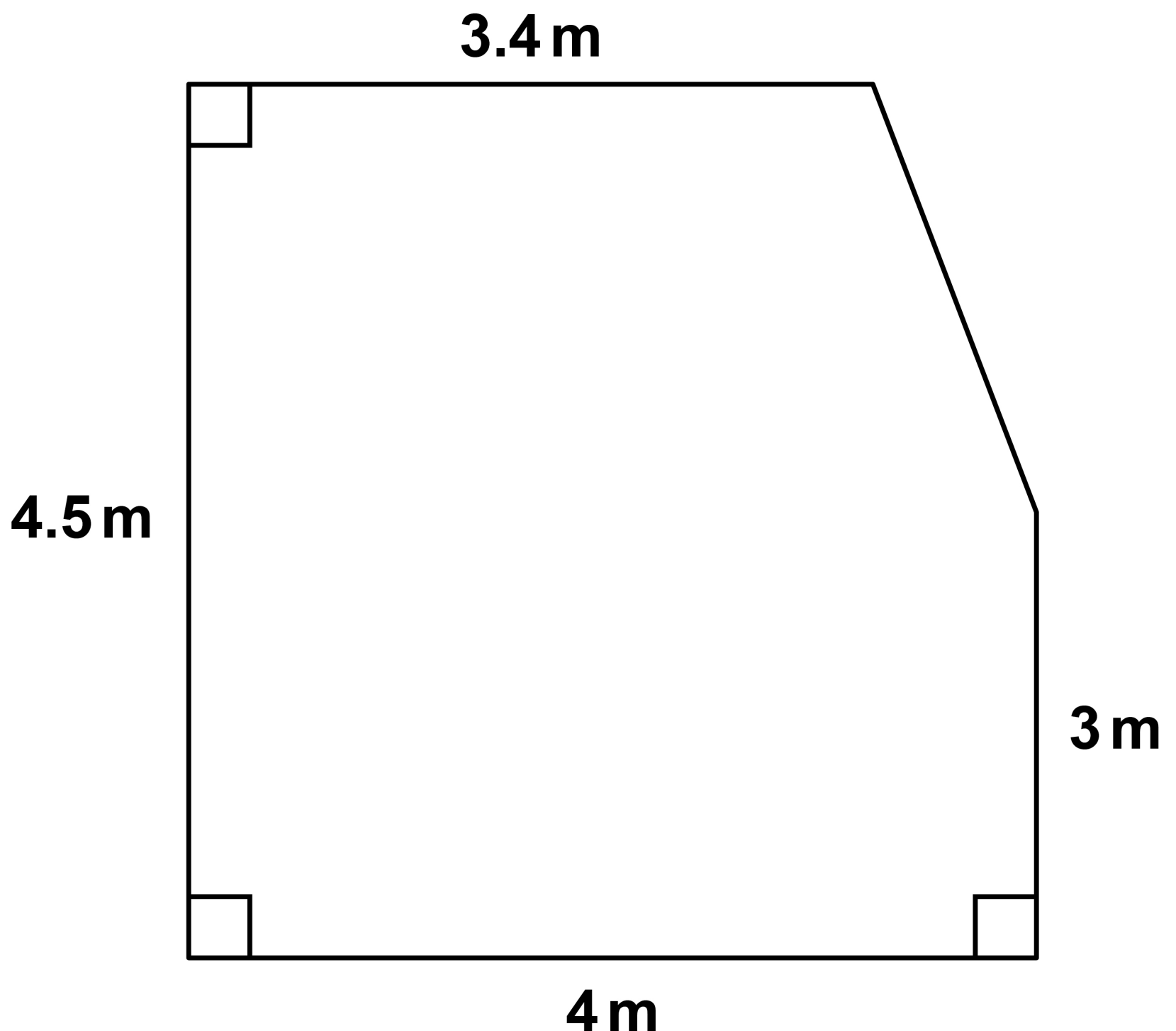


10 CONSERVATORY

Molly is building a conservatory.

10 (a) Here is a plan view of the conservatory.

The diagram is not drawn accurately.



The conservatory floor will be made of concrete.

The concrete floor will be 0.1 m deep.

What volume of concrete will Molly need for the floor?

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

[Turn over]



Answer _____

10(b) Molly has a scale drawing of the side elevation of the conservatory.

The scale of the drawing is 3 : 50

The height of the conservatory on the scale drawing is 23.4 centimetres.

Is the actual height of the conservatory LESS THAN 4 metres?

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



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[Turn over]



10 (c) Molly wants to build a brick wall as part of the conservatory.

It would take Molly 12 hours to build the wall by herself.

Molly pays 2 builders to work with her to build the wall.

Molly pays each builder £14.73 per hour.

How much will Molly pay each builder for their work?

Assume that Molly and the builders work at the same rate. [3 marks]

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Answer £ _____

END OF QUESTIONS

12



Additional page, if required.
Write the question numbers in the left-hand margin.

Additional page, if required.
Write the question numbers in the left-hand margin.



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

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