



GCSE

3310U40 – 1

WEDNESDAY, 4 JUNE 2025 – MORNING

**MATHEMATICS – NUMERACY
UNIT 2: CALCULATOR – ALLOWED
INTERMEDIATE TIER**

**1 hour 45 minutes plus your additional time
allowance**

A CALCULATOR WILL BE REQUIRED FOR THIS PAPER

Surname: _____

First name(s): _____

Centre Number: _____

Candidate Number: 0 _____

For Examiner's use only

Question	Maximum Mark	Mark Awarded
1.	3	
2.	10	
3.	5	
4.	2	
5.	4	
6.	7	
7.	8	
8.	3	
9.	3	
10.	9	
11.	3	
12.	14	
13.	9	
Total	80	

ADDITIONAL MATERIALS

A ruler, protractor and pair of compasses may be required.

ITEMS INCLUDED WITH QUESTION PAPER

A separate Formula List.

A separate Diagram Booklet.

Models for Question 6 (b).

The Diagram Booklet **MUST** be handed in to the invigilators and sent for marking.

INSTRUCTIONS TO CANDIDATES

Use black ink, black ball–point pen, black felt tip or your usual method.

Write your name, centre number and candidate number in the spaces on the front cover.

Answer **ALL** questions in the spaces provided.

If you run out of space, use the additional page(s) at the back of the booklet, taking care to number the question(s) correctly.

Take π as $3 \cdot 14$ or use the π button on your calculator.

(Turn over)

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.

Unless stated, diagrams are not drawn to scale.

Scale drawing solutions will not be acceptable where you are asked to calculate.

The number of marks is given in brackets at the end of each question or part–question.

In question 2, the assessment will take into account the quality of your linguistic and mathematical organisation, communication and accuracy in writing.

(Turn over)

1. Look at the diagram for Question 1 in the separate Diagram Booklet. The diagram is a map.
A helicopter flies from Barmouth to Cardiff, as shown on the map.

(a) What is the bearing of Cardiff from Barmouth?

o

[1 mark]

(b) The average speed of the helicopter is
152 km per hour.

The journey takes **1 hour.**

How many **MILES** is Barmouth to Cardiff
by helicopter?

Barmouth to Cardiff is _____ miles

[2 marks]

(Turn over)

- 2. IN THIS QUESTION YOU WILL BE ASSESSED ON THE QUALITY OF YOUR ORGANISATION, COMMUNICATION AND ACCURACY IN WRITING.**

Look at the information for Question 2 in the separate Diagram Booklet. The information is about camping at Maes Hyfryd.

4 friends are planning a camping holiday for 5 nights at Maes Hyfryd.

The 4 friends cannot decide whether to:

- take two tents, so that 2 people sleep in each tent**
- or**
- take one tent that all 4 friends can share.**

Calculate:

- the total charge for staying for 5 nights if the 4 friends use two tents**
- and**
- the saving made if the friends decide to use just one tent.**

You must show all your working.

(Turn over)

[8 marks + 2 marks OCW]

(Turn over)

3. Emir uses this recipe to make chocolate mousse.

Recipe for Chocolate Mousse

Serves 4 people

84 g dark chocolate

16 g cocoa powder

50 g yoghurt

10 g sugar

- (a) Emir is making chocolate mousse to serve
18 people.

**Complete the following list of the quantities of
ingredients that he needs.**

_____ **g dark chocolate**

_____ **g cocoa powder**

_____ **g yoghurt**

_____ **g sugar**

(Turn over)

[3 marks]

3. (b) Express the following ratios in their simplest terms.

yoghurt : sugar

= _____ : _____

dark chocolate : cocoa powder

= _____ : _____

[2 marks]

(Turn over)

4. The information below is shown on a bottle of sun cream:

One application of sun cream is 1 ounce.

Use 2 milligrams of sun cream to cover an area of 1 cm^2 of skin.

Use: 1 ounce $\approx$ 28 350 milligrams

Use this information to calculate the area of skin covered by one application of sun cream.

Give your answer in cm^2

[2 marks]

(Turn over)

5. Look at the diagram for Question 5 in the separate Diagram Booklet. The diagram is NOT drawn to scale. The diagram represents a plan of new roads that are being built in a town. The plan shows the roads and the size of some of the angles between them.

Calculate the size of each of the angles V , W , X and y .

$$V = \underline{\hspace{2cm}}^\circ$$

$$W = \underline{\hspace{2cm}}^\circ$$

$$X = \underline{\hspace{2cm}}^\circ$$

$$y = \underline{\hspace{2cm}}^\circ$$

[4 marks]

(Turn over)

6. Nina sells flowers.

- (a) At the start of last week, Nina spent £600 buying flowers to sell.**

By the end of the week, she had taken £1140 from the sale of the flowers.

Calculate Nina's percentage profit from the sale of these flowers.

[2 marks]

continued on the next page . . .

(Turn over)

Question 6 continued

6. (b) Ask for the models for Question 6 (b).

The models are NOT made to scale. The models represent two vases.

Nina wants to display her flowers.

She buys two glass vases from a website.

The two vases are different shapes.

Vase 1 is a cuboid. Vase 2 is a cylinder.

Each vase can hold 1648 cm^3 of water when it is full.

(i) The vase in the shape of a cuboid has a base measuring 10 cm by 8 cm.

Calculate the height of this vase.

(Turn over)

[2 marks]

6. (b) (ii) The radius of the base of the cylindrical vase is 6 cm.

The website states that both of these vases have the same height.

Is the website correct?

You must show all your working.

The website is correct

☐

The website is incorrect

☐

(Turn over)

[3 marks]

(Turn over)

7. Look at the diagram for Question 7 in the separate Diagram Booklet. The diagram is a scatter diagram. In a PE lesson, **12** students each measured their height and arm span.

The results are shown on the scatter diagram.

- (a) Anwen is the only student who made an error in her measurements.

She is one of the shortest students.

What did Anwen record as the measurement for her arm span?

Circle your answer.

155 cm	168 cm	173 cm	172.5 cm	178 cm
--------	--------	--------	----------	--------

[1 mark]

continued on the next page . . .

Question 7 continued

- 7. (b) If you ignore Anwen's height, what is the median height of the other 11 students?**

Median height is _____ cm

[1 mark]

- (c) What term best describes the correlation between a student's height and their arm span?**

[1 mark]

continued on the next page . . .

(Turn over)

Question 7 continued

7. (d) Megan has the same arm span as Elwyn.
Elwyn is taller than Megan.
How tall is Megan?

Megan is _____ cm tall

[2 marks]

- (e) Roland is **160 cm** tall.
Elsa is **10%** taller than Roland.
Find Elsa's height and arm span.

Elsa's height is _____ cm

Elsa's arm span is _____ cm

[3 marks]

(Turn over)

8. Elfed goes to the park to exercise.

Yesterday he ran 10 km and then walked a further 4 km.

Elfed ran for 45 minutes and walked for 1 hour.

What was Elfed's overall average speed for his exercise in the park yesterday?

Give your answer in km/h.

You must show all your working.

[3 marks]

- 9. Bethan bought a house in January 2000 for £30 000**

In the first 10 years, her house increased in value each year by 6% of its previous year's value.

In the following 15 years, her house increased in value each year by 11% of its previous year's value.

Calculate the value of Bethan's house in January 2025.

[illegible]

(Turn over)

[3 marks]

10. 100 people took part in a fundraising event last Saturday and Sunday.

They raised money for charity by working towards some fitness targets.

(a) The target for Saturday was to achieve a mean of 6500 steps per person.

Look at the table for Question 10 (a) in the separate Diagram Booklet. The results for Saturday are shown in the table.

(i) Calculate an estimate of the mean number of steps per person on Saturday to show that this target was met.

(Turn over)

[4 marks]

continued on the next page . . .

(Turn over)

Question 10 (a) continued

10. (a) (ii) Osian says,

“None of these 100 people recorded more than 10 000 steps on Saturday.”

Is this statement certainly true, not true, or is it not possible to tell?

You must give a reason for your answer.

Certainly true

☐

Not true

☐

Not possible to tell

☐

[1 mark]

continued on the next page . . .

(Turn over)

Question 10 continued

- 10. (b) On Sunday, the 100 people were divided into three groups, A, B and C, based upon their results from the Saturday.**

Each group was given a target of a mean number of steps per person.

The targets for groups A, B and C, were 8000, 9000 and 10 000 steps, respectively.

Look at the table for Question 10 (b) in the separate Diagram Booklet.

The table shows the mean number of steps per person that each group achieved on Sunday.

The ratio of the number of people in the different groups was $A : B : C = 18 : 4 : 3$

continued on the next page . . .

Question 10 (b) continued

- 10. (b) (i) Calculate the overall mean of the number of steps taken per person by these 100 people on Sunday.**

[illegible]

[3 marks]

continued on the next page . . .

(Turn over)

Question 10 (b) continued

10. (b) (ii) The organiser says,

**“A fabulous result on Sunday!
Two of the three groups met
their target.**

**This means that two – thirds of the
targets given were met.”**

**Give a reason why this could be seen as a
misrepresentation of the outcome of
Sunday’s fundraising event.**

[1 mark]

(Turn over)

- 11. A builder wants to put a ladder safely against a wall. The builder should follow the ‘4 up, 1 out’ rule. This means that, for every 4 units of height up the wall that the top of the ladder reaches, the base of the ladder should be 1 unit away from the wall.**

Look at the diagram for Question 11 in the separate Diagram Booklet. The diagram is NOT drawn to scale. The diagram shows a ladder placed safely against a vertical wall.

Calculate the angle between the horizontal ground and the ladder.

[3 marks]

(Turn over)

12. Gwilym is giving a talk about the amount of food that was wasted in 2019.

(a) In 2019, the world produced 931 million tonnes of food waste.

Of this:

- 569 million tonnes was from households**
- 243 million tonnes was from food services**
- 119 million tonnes was from retail sectors.**

Gwilym wants to draw a pie chart to display this information.

continued on the next page . . .

Question 12 (a) continued

Complete the table below.

Food waste	Angle in a pie chart
Household	220°
Food service	°
Retail sector	°

Look at the diagram for Question 12 (a) in the separate Diagram Booklet. The diagram is Gwilym's incomplete pie chart.

Complete Gwilym's pie chart.

You must show all your working.

[4 marks]

continued on the next page . . .

(Turn over)

Question 12 continued

12. (b) Look at the table for Question 12 (b) in the separate Diagram Booklet. The table shows some further details that Gwilym has found about food waste in 2019.

- (i) The population data seems to be given correct to a certain number of significant figures.**

To how many significant figures does the data seem to be given?

Circle your answer.

Three	One	Ten	Eight	Two
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[1 mark]

continued on the next page . . .

(Turn over)

Question 12 (b) continued

**12. (b) (ii) Use the data from the table for
Question 12 (b) in the separate Diagram
Booklet to complete the following
statements.**

You must show all your working.

**‘On average, a person in France produced
_____ kilograms of food waste.**

**This was _____ times the average amount
of food waste per person in China.’**

(Turn over)

[4 marks]

12. (c) The area of the United Kingdom
is 242 500 km²

Use this information and the information in the
table for Question 12 (b) in the separate Diagram
Booklet, to answer the following questions about
2019.

- (i) What was the population density of the UK?

_____ people per km²

[2 marks]

continued on the next page . . .

(Turn over)

Question 12 (c) continued

12. (c) (ii) What was the average food waste per km² in the UK?

Give your answer in TONNES.

A blank sheet of white paper with ten horizontal black ruling lines. The lines are evenly spaced and extend across the width of the page. At the bottom center, the word "tonnes" is printed in a bold, black, sans-serif font.

tonnes

[3 marks]

(Turn over)

13. Dyfan has two different 25 g bars of chocolate, a Chocodusk bar and a Luxury Dark bar.

The Chocodusk bar has a lower cocoa content than the Luxury Dark bar.

(a) Look at the tables for Question 13 (a) in the separate Diagram Booklet. There are two tables. Table 1 gives the nutritional information about the CHOCODUSK bar.

Table 2 gives the nutritional information about the LUXURY DARK bar.

(i) Complete the following statement.

‘The amount of salt in the Luxury Dark bar is _____ % of the amount of salt in the Chocodusk bar.’

[1 mark]

continued on the next page . . .

(Turn over)

Question 13 (a) continued

13. (a) (ii) Dyfan eats 20 g of the Luxury Dark bar.

Calculate the percentage of the Chocodusk bar that gives Dyfan the same amount of saturated fat.

You must show all your working.

[illegible]

[3 marks]

continued on the next page . . .

(Turn over)

Question 13 continued

13. (b) Look at the diagram for Question 13 (b) in the separate Diagram Booklet. The diagram is NOT drawn to scale. The diagram shows the symmetrical uniform cross – section of one of the chocolate bars.

In the diagram:

$$AB = 68 \text{ mm}$$

$$AD = 7 \text{ mm}$$

$$DC = 60 \text{ mm}$$

The label on this chocolate bar states,

‘The thickness of this chocolate bar is 6 mm, correct to the nearest millimetre.’

Use the measurements given on the diagram to decide whether this statement is true or false.

True ☐ False ☐

You must show all your working.

(Turn over)

[5 marks]

END OF PAPER

TOTAL 80 MARKS

(Turn over)

[illegible]

(Turn over)

[illegible]

(Turn over)

[illegible]



GCSE

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MATHEMATICS – NUMERACY

**UNIT 2: CALCULATOR – ALLOWED
INTERMEDIATE TIER**

Diagram Booklet

**The Diagram Booklet MUST be handed in
to the invigilators and sent for marking.**

Surname: _____

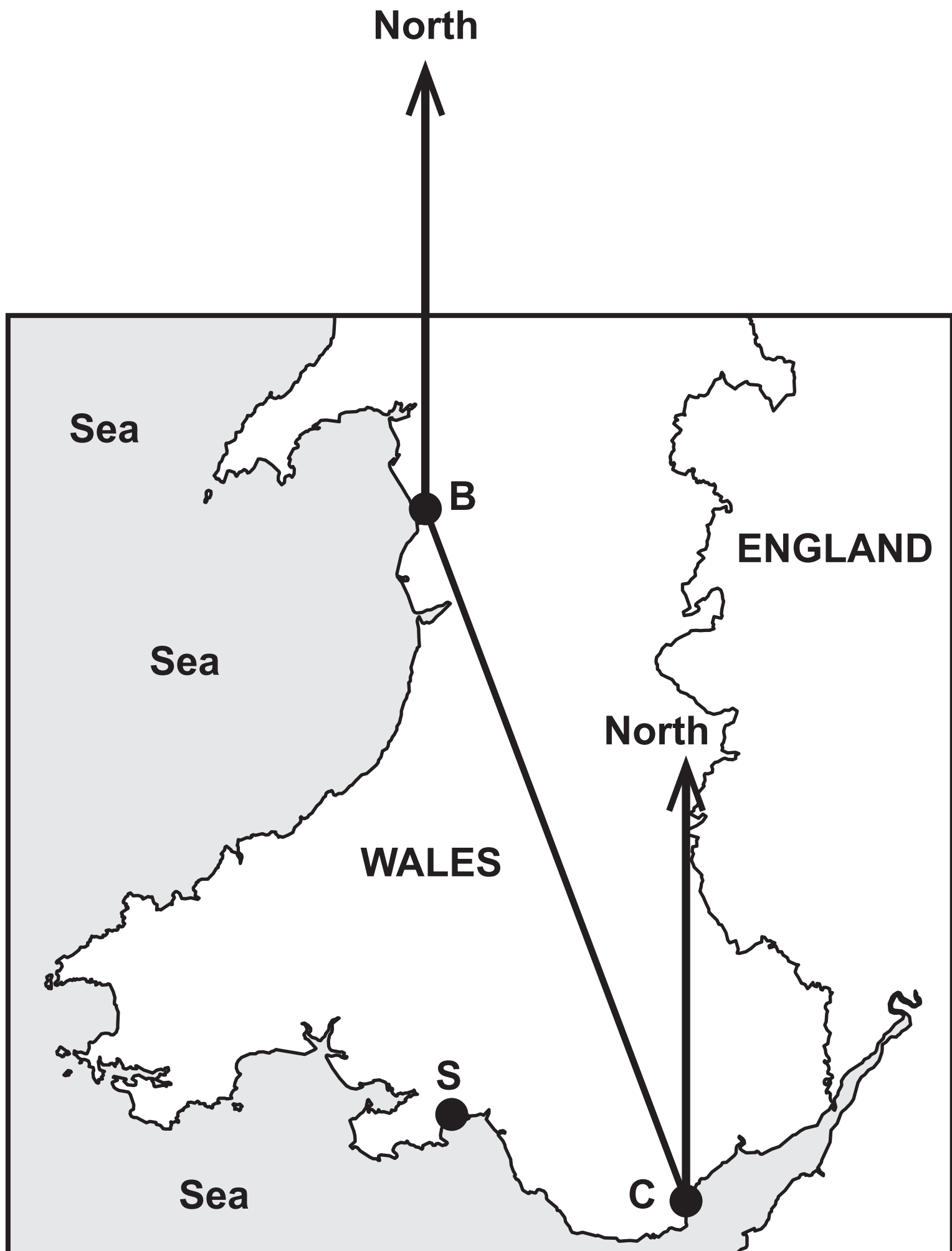
First name(s): _____

Centre Number: _____

Candidate Number: 0 _____

Question 1

Key: B = Barmouth C = Cardiff S = Swansea



Question 2

Information

MAES HYFRYD

Camping charges per night:

£24.50 per tent per night

AND

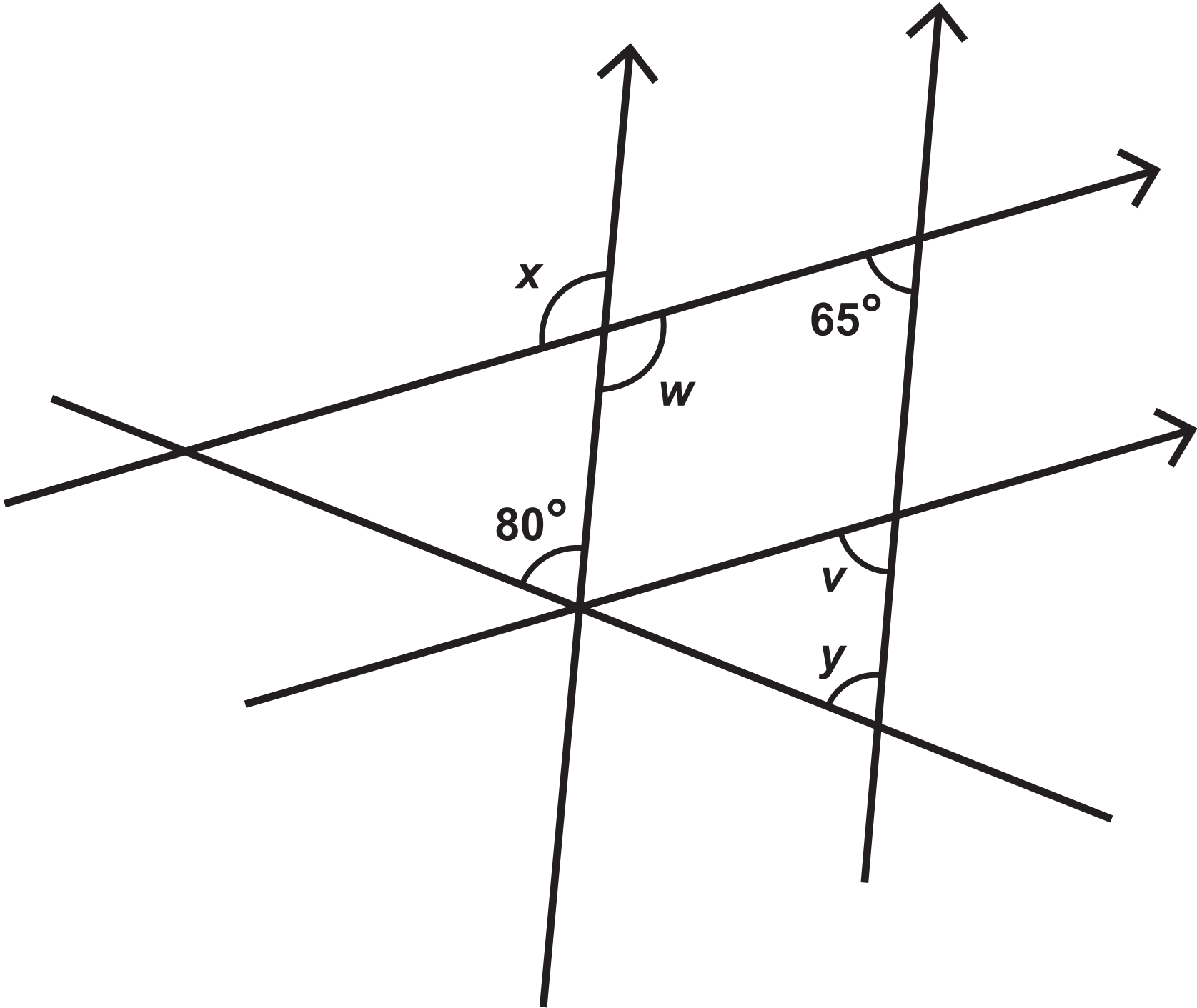
a fee of £6 per person staying per night

SPECIAL OFFER

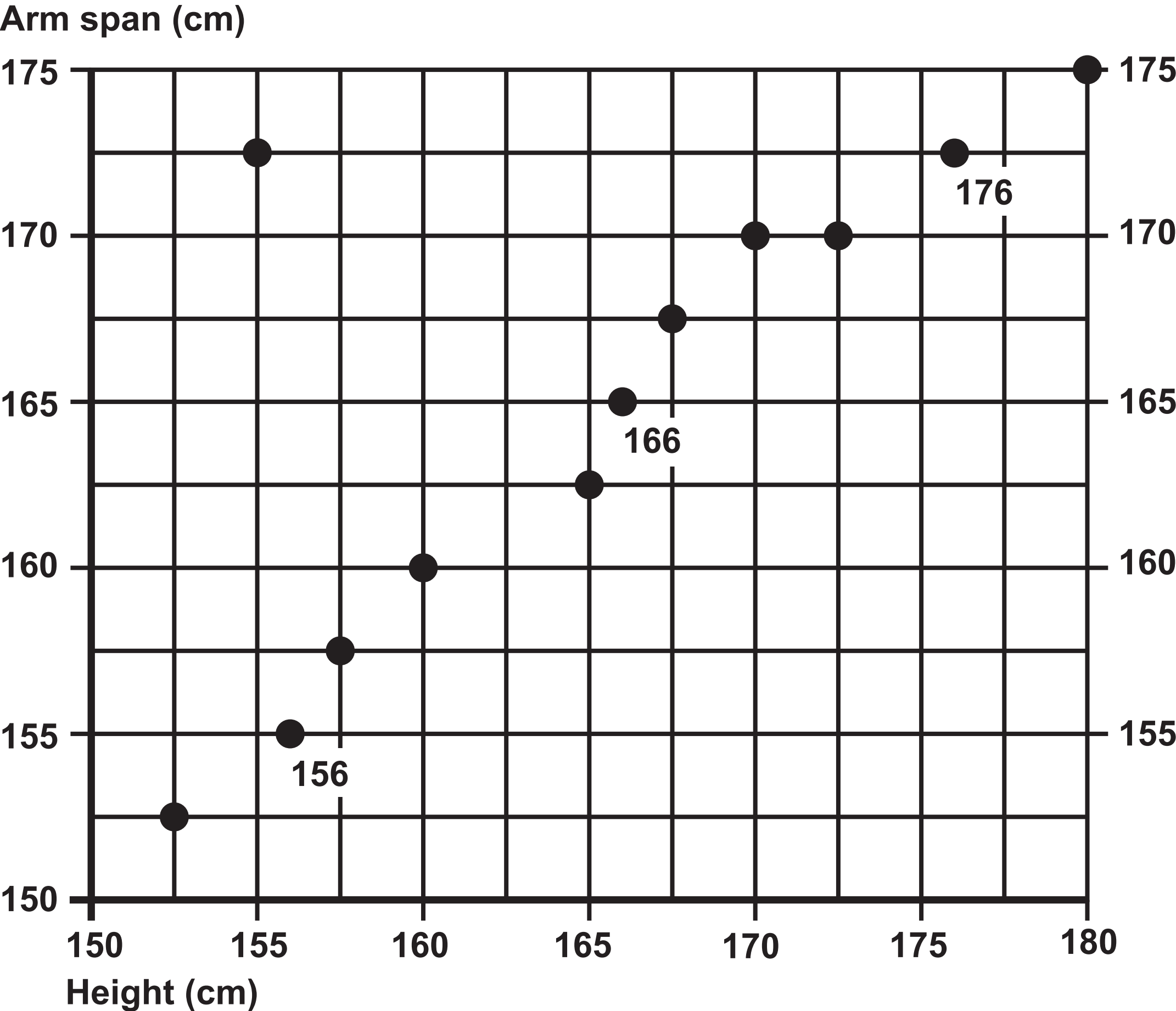
**22% off the fee per person when 4 people stay
in the same tent**

Question 5

Diagram NOT drawn to scale



Question 7



Question 10 (a)

Table

Number of steps	Number of people
3001 to 5000	22
5001 to 7000	30
7001 to 9000	42
9001 to 11 000	6

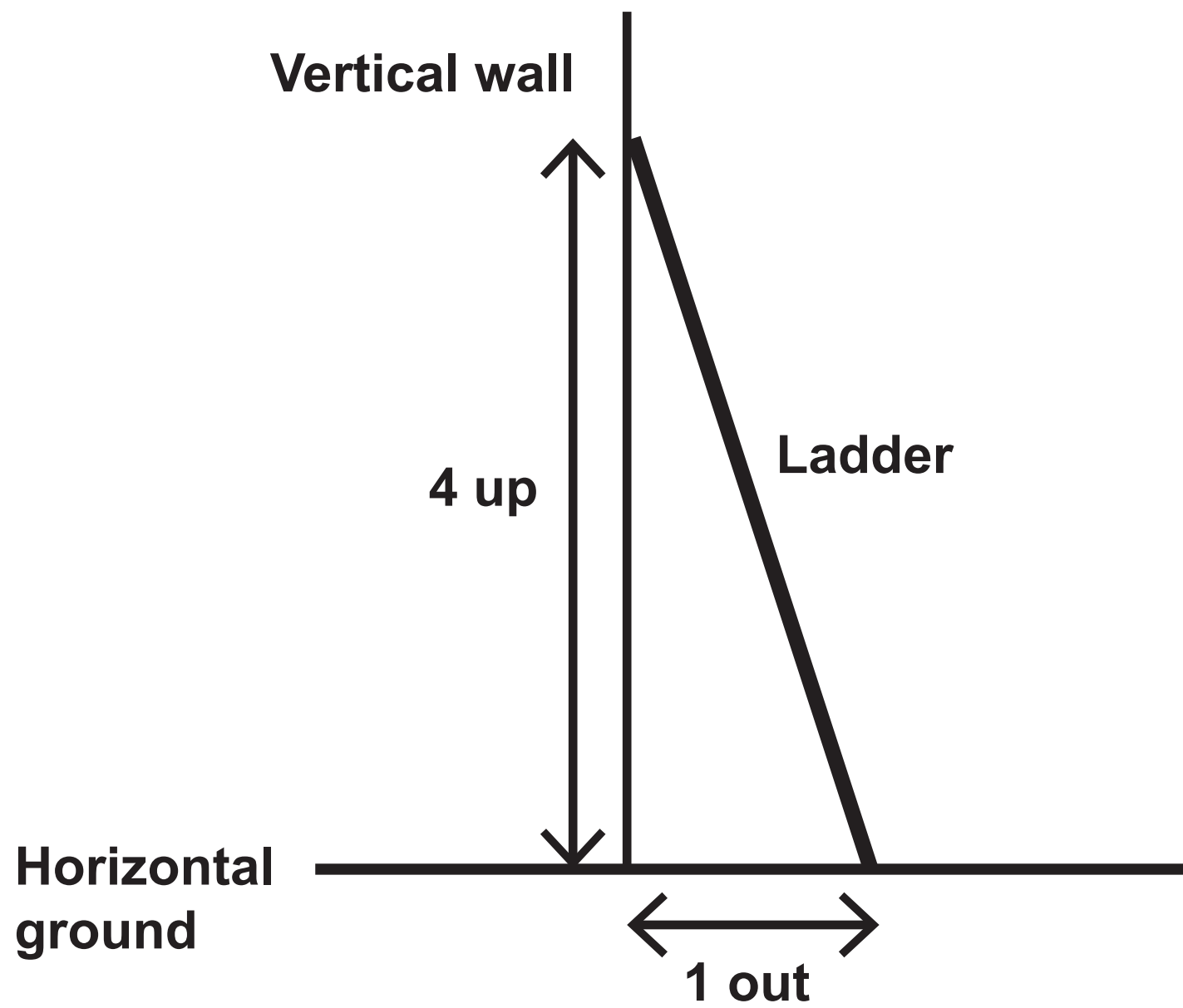
Question 10 (b)

Table

Group	A	B	C
Mean number of steps per person achieved	5802	9830	12 200

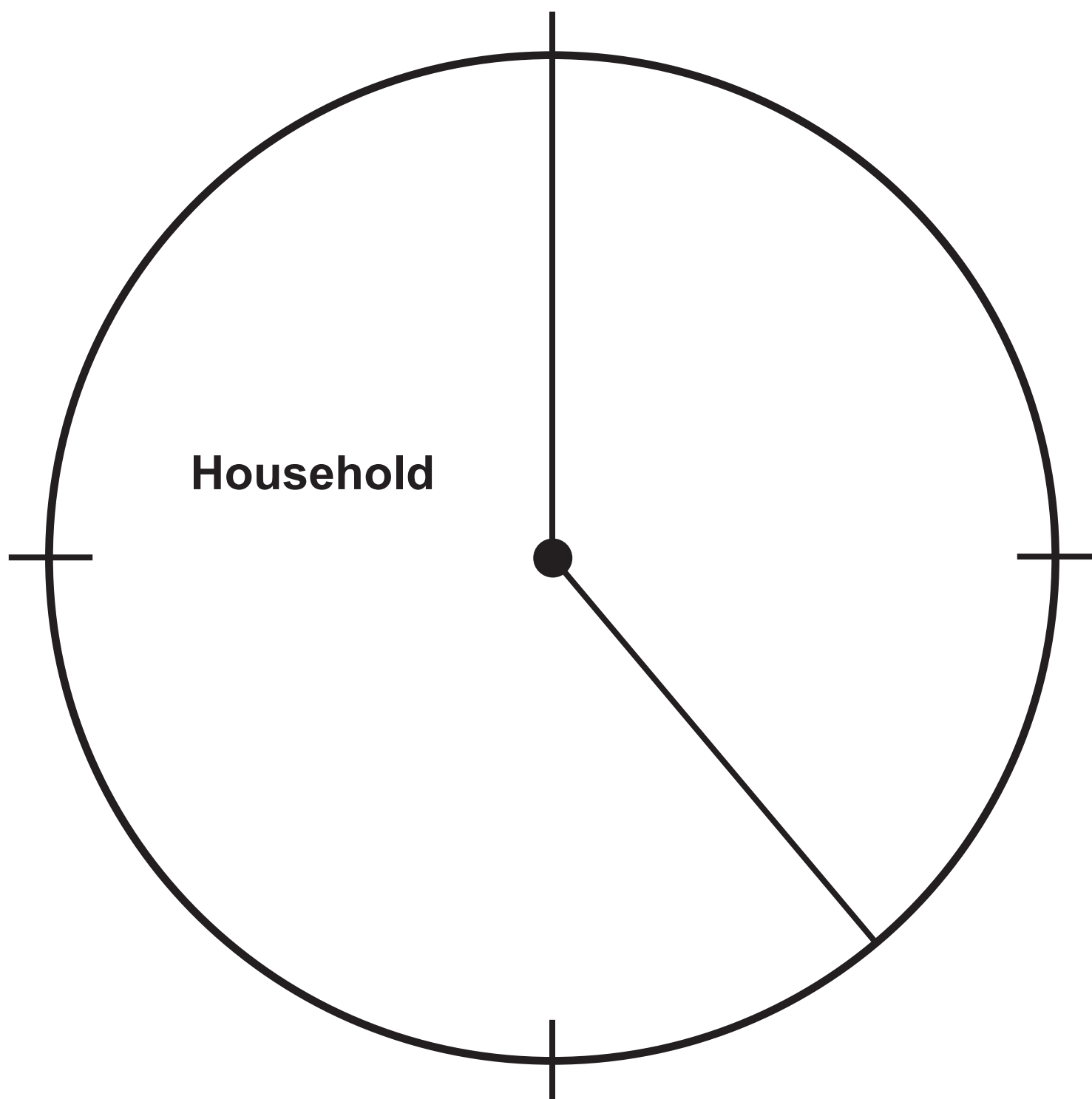
Question 11

Diagram NOT drawn to scale



Question 12 (a)

Food waste in 2019



Question 12 (b)

Table

Country	Total food waste in KILOGRAMS	Population
China	91 646 213 000	1 440 000 000
France	5 522 358 000	65 400 000
United Kingdom	5 199 825 000	67 600 000

Question 13 (a)

Table 1

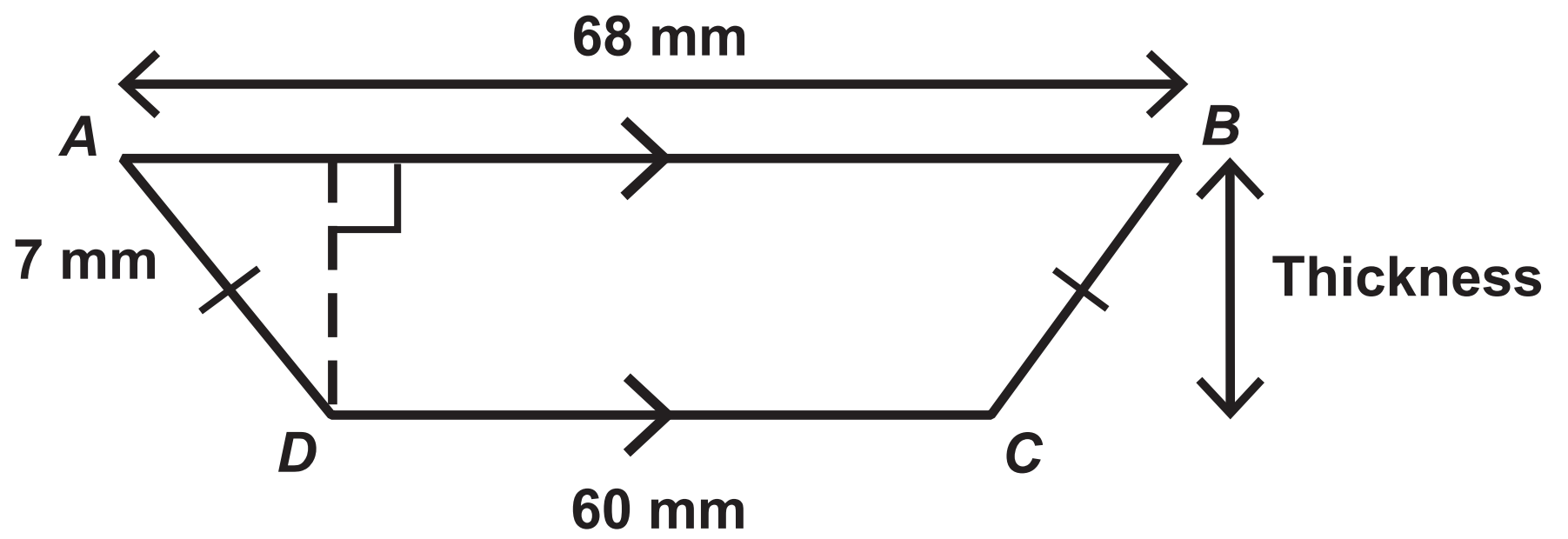
CHOCODUSK bar: lower cocoa content	
	Per 25 g bar
Saturated fat	6•6 g
Sugar	7•1 g
Protein	3•5 g
Salt	0•01 g

Table 2

LUXURY DARK bar: higher cocoa content	
	Per 25 g bar
Saturated fat	7•7 g
Sugar	3•5 g
Protein	2•9 g
Salt	0•09 g

Question 13 (b)

Diagram NOT drawn to scale



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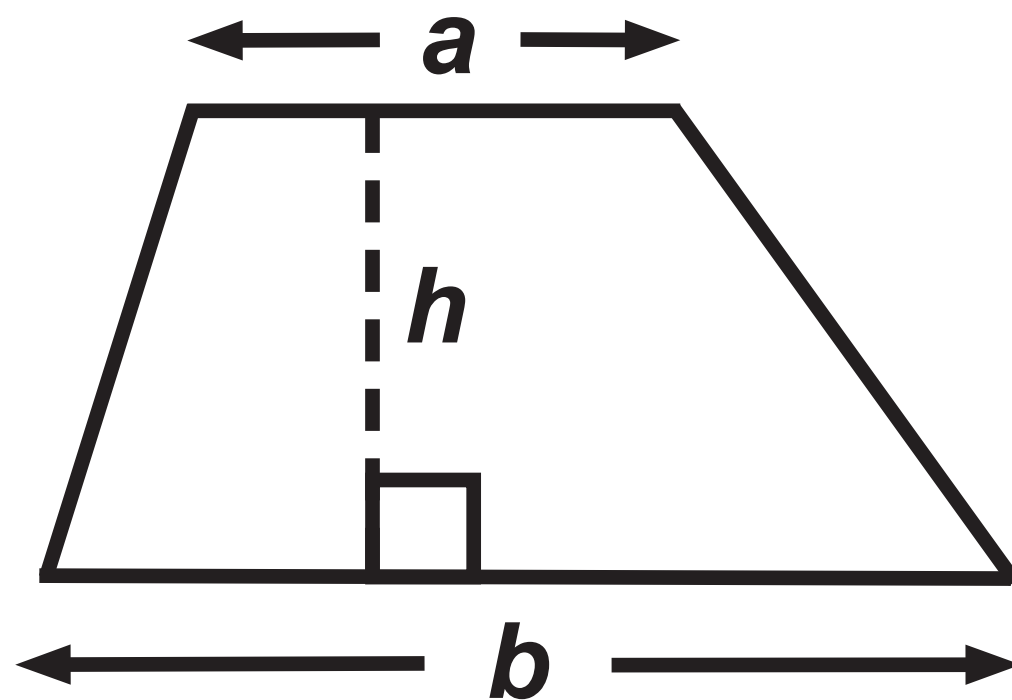
**FORMULA LIST
INTERMEDIATE TIER
GCSE**

**You must not write on these formula
pages.**

**Anything you write on these formula
pages will gain NO credit.**

Formula List – Foundation Tier

Area of trapezium $= \frac{1}{2} (a + b) h$



Volume of prism =

area of cross – section $\times$ length

