



**GCSE**

**3310U20-1**

**THURSDAY, 10 NOVEMBER 2022 – MORNING**

**MATHEMATICS – NUMERACY**

**UNIT 2: CALCULATOR – ALLOWED**

**FOUNDATION TIER**

**1 hour 30 minutes plus your additional time allowance**

**A CALCULATOR WILL BE REQUIRED FOR THIS EXAMINATION**

**Surname:** \_\_\_\_\_

**First name(s):** \_\_\_\_\_

**Centre Number:** \_\_\_\_\_

**Candidate Number:** **0** \_\_\_\_\_

<b>For Examiner's use only</b>		
<b>Question</b>	<b>Maximum Mark</b>	<b>Mark Awarded</b>
<b>1.</b>	<b>16</b>	
<b>2.</b>	<b>13</b>	
<b>3.</b>	<b>7</b>	
<b>4.</b>	<b>5</b>	
<b>5.</b>	<b>12</b>	
<b>6.</b>	<b>8</b>	
<b>7.</b>	<b>4</b>	
<b>Total</b>	<b>65</b>	

**(Turn over)**

**ADDITIONAL MATERIALS**

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

**ITEMS INCLUDED WITH QUESTION PAPER**

A separate Formula List.

A separate Diagram Booklet.

**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.

Write your answers in the spaces provided.

If you run out of space, use the additional page(s) at the back of the booklet.

Question numbers must be given for the work written on the additional page(s).

Take  $\pi$  as 3.14 or use the  $\pi$  button on your calculator.

**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 (a), the assessment will take into account the quality of your linguistic and mathematical organisation, communication and accuracy in writing.**

1. Billy belongs to a local walking club.  
He asked **35** people in the club which  
Welsh mountain they liked to walk up  
the most.  
He recorded the information shown below.

**7** people prefer Pen y Fan

The number of people who chose Snowdon  
is double those that chose Pen y Fan

This tally shows the number of people who  
like walking up Cadair Idris



The rest like walking up Cadair Berwyn the most

continued on the next page . . .



**Question 1 continued**

1. (b) Complete the following sentence.

**The difference between the number of people who liked walking up Cadair Idris and the number who liked walking up Pen y Fan is \_\_\_\_\_ .**

**[1 mark]**

(c) Billy says,

**“The modal choice of mountain is Pen y Fan.”**

**Explain why Billy is NOT correct.**

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**[1 mark]**

**continued on the next page . . .**

**(Turn over)**

**Question 1 continued**

**1. (d) Billy went for a walk up Pen y Gadair Fawr.**

**(i) Pen y Gadair Fawr is 800 metres high.  
Calculate the height of Pen y Gadair  
Fawr in feet.**

**Use: 1 metre is 3.3 feet**

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**Pen y Gadair Fawr is \_\_\_\_\_ feet high.**

**[2 marks]**

**continued on the next page . . .**

**(Turn over)**

**Question 1 (d) continued**

**1. (d) (ii) The walk took Billy 3 hours and 45 minutes.**

**He started his walk at 10:30 a.m.**

**At what time did he finish his walk?**

**Give your answer using the**

**24 – hour clock.**

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**[2 marks]**

**continued on the next page . . .**

**(Turn over)**

**Question 1 (d) continued**

**1. (d) (iii) Look at the table for Question 1 (d) (iii) in the separate Diagram Booklet.**

**It gives the temperature at 6 a.m. each day for a week in March at Pen y Gadair Fawr.**

**Use the information in the table to complete the following statements.**

**The day with the lowest temperature is \_\_\_\_\_**

**The range of these temperatures is \_\_\_\_\_**

**The median of these temperatures is \_\_\_\_\_**

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**[4 marks]**

2. (a) IN THIS PART OF THE QUESTION, YOU WILL BE ASSESSED ON THE QUALITY OF YOUR ORGANISATION, COMMUNICATION AND ACCURACY IN WRITING.

Mrs Smith is planning to hold a tea party in her garden.

Look at the table for Question 2 (a) in the separate Diagram Booklet.

The costs for the party are shown in the table.

Mrs Smith has already saved **£250** towards the cost of the party.

How much more money does Mrs Smith need for the party?

You must show all your working.

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**Question 2 continued**

2. (b) Mrs Smith wants to make her own bunting to decorate the garden.

The triangles for the bunting are in the shape of isosceles triangles.

Look at the diagram for Question 2 (b) in the separate Diagram Booklet.

The diagram is NOT drawn to scale.

The diagram is a sketch of the pattern that Mrs Smith is going to use to make her bunting.

In the space below the diagram, make an accurate drawing of the pattern for the bunting.

One side has already been drawn for you.

**[3 marks]**

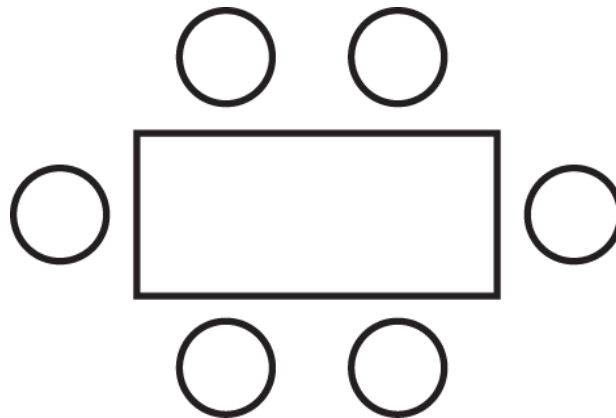
continued on the next page . . .

**(Turn over)**

**Question 2 continued**

2. (c) Mrs Smith is planning to use a number of identical rectangular tables for her party. There will be **18** people at the party, including Mrs Smith.

Six chairs fit around one table, as shown in the diagram below.



She would like all the tables to be joined together.

All the tables must be joined together either:

- with their shorter sides touching  
or
- with their longer sides touching.

continued on the next page . . .

(Turn over)

**Question 2 (c) continued**

**Mrs Smith wants to use the LEAST NUMBER OF TABLES possible.**

**On the blank page provided for Question 2 (c) in the separate Diagram Booklet, show how the tables and chairs for the 18 people at the party should be arranged.**

**[2 marks]**

3. (a) The Royal National Lifeboat Institution (RNLI) bought a new lifeboat.

The lifeboat was funded as follows:

- 2% from government sources
- 94% from donations
- 4% from other sources.

The new lifeboat cost **£2.2 million**.

How much of the cost of this lifeboat was funded from government sources?

Write your answer in figures only.

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£ \_\_\_\_\_

[3 marks]

continued on the next page . . .

(Turn over)

## Question 3 continued

3. (b) Look at the diagram for Question 3 (b) in the separate Diagram Booklet.

The diagram is a pie chart.

**1800** medals were awarded to RNLI crew members in recent years.

The distribution of the medals is shown accurately in the pie chart.

- (i) What fraction of the medals awarded were bronze?

Circle your answer.

$\frac{135}{360}$	$\frac{245}{360}$	$\frac{65}{360}$	$\frac{115}{360}$	$\frac{75}{360}$
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[1 mark]

continued on the next page . . .

(Turn over)

**Question 3 (b) continued**

**3. (b) (ii) How many gold medals were awarded?**

**You must show all your working.**

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**[3 marks]**

**(Turn over)**

4. Viktor runs a plumbing company that is based abroad.

(a) In April 2022, the rate of VAT that Viktor had to pay on goods increased to 23%.

In May 2022, Viktor bought goods worth 4000 euros before VAT.

If he had bought the goods before April, the VAT would have been 800 euros.

How much more VAT did Viktor pay on the goods in May than he would have done if he had bought them before April?

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\_\_\_\_\_ euros

[3 marks]

(Turn over)

Question 4 continued

4. (b) Viktor pays **3600** euros towards his tax bill.

The exchange rate is **£1 = 1.11** euros.

How much is **3600** euros in pounds?

Give your answer correct to the nearest penny.

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£ \_\_\_\_\_

[2 marks]

(Turn over)

5. (a) Iwan recorded his gas usage for a week.

His meter reading was **21 345 kWh**  
at the start of the week.

His meter reading was **21 640 kWh**  
at the end of the week.

Gas costs **7.2p** per kWh.

VAT at **5%** is payable on the cost of  
any gas used.

Calculate the total cost of Iwan's gas  
for the week.

You must show all your working.

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**Question 5 continued**

- 5. (b) For the first 7 days of October, the mean daily outside temperature at midday where Iwan lives was  $13.2^{\circ}\text{C}$ . The temperatures at midday for the next 2 days of October were  $12.2^{\circ}\text{C}$  and  $12.4^{\circ}\text{C}$ .**

**Calculate the total of the temperatures for the first 7 days.**

**Hence, calculate the mean midday temperature for the first 9 days of October.**

**You must show all your working.**

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The mean midday temperature for the first 9 days  
of October was \_\_\_\_\_ °C

[4 marks]

continued on the next page . . .

## Question 5 continued

5. (c) Look at the diagram for Question 5 (c) in the separate Diagram Booklet. The diagram is NOT drawn to scale.

The plan of the streets where Iwan lives is shown.

On the diagram, the angles of  $42^\circ$ ,  $75^\circ$ ,  $82^\circ$ ,  $w$ ,  $x$  and  $y$  are shown.

Find the size of each of the angles  $w$ ,  $x$  and  $y$ .

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$$w = \underline{\hspace{10em}} \circ$$

$$x = \underline{\hspace{10em}} \circ$$

$$y = \underline{\hspace{10em}} \circ$$

[3 marks]

(Turn over)

**6. Look at the diagrams for Question 6 in the separate Diagram Booklet.**

**The frequency diagrams show the lengths of time that men and women spent training in the gym on Friday.**

**(a) Freddie says he spent exactly 1 hour 25 minutes training in the gym on Friday.**

**Explain how you know that Freddie is not telling the truth.**

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**[1 mark]**

**continued on the next page . . .**

**(Turn over)**

## Question 6 continued

6. (b) How many men spent less than **20** minutes training in the gym on Friday?  
Circle your answer.

12	14	54	6	20
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[1 mark]

- (c) How many women spent less than **40** minutes training in the gym on Friday?  
Circle your answer.

14	26	34	38	76
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[1 mark]

continued on the next page . . .

(Turn over)

Question 6 continued

6. (d) Gwen says,

**“A greater PROPORTION of women than men spent between 40 and 60 minutes training in the gym on Friday.”**

Is Gwen’s statement true or false?

True  False

You must show all your working to support your answer.

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**[5 marks]**

7. Lena flew from Havana Airport in Cuba to Gatwick Airport in the UK.  
She then drove home from Gatwick Airport.

When it is **09:40** in Havana, it is **14:40** on the same day in Gatwick.

It took **9** hours **15** minutes to fly from Havana to Gatwick.

Lena's flight left Havana on Monday at **17:40** local Havana time.

On what day and at what time did this flight arrive in Gatwick?

Give your answer in UK time.

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Day \_\_\_\_\_

Time \_\_\_\_\_

[4 marks]

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**END OF PAPER**  
**TOTAL 65 MARKS**

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**(Turn over)**







**GCSE**

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**FOUNDATION TIER**

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to the invigilators and sent for marking.**

# **Diagram Booklet**

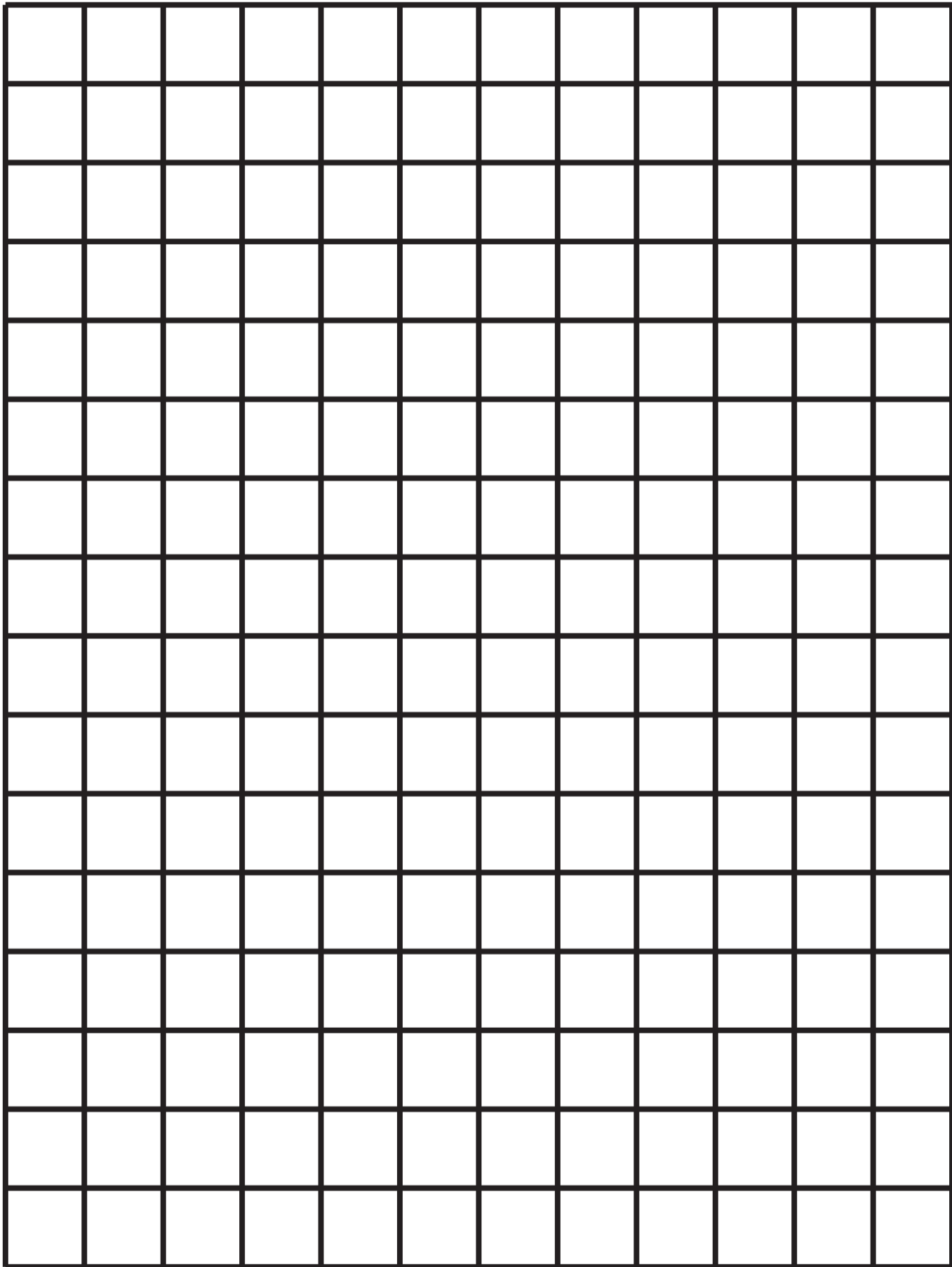
**Surname:** \_\_\_\_\_

**First name(s):** \_\_\_\_\_

**Centre Number:** \_\_\_\_\_

**Candidate Number:** 0 \_\_\_\_\_

# Question 1 (a)



### Question 1 (d) (iii)

Table

Day	Temperature ( $^{\circ}\text{C}$ )
Monday	-2
Tuesday	0
Wednesday	1
Thursday	3
Friday	4
Saturday	3
Sunday	-1

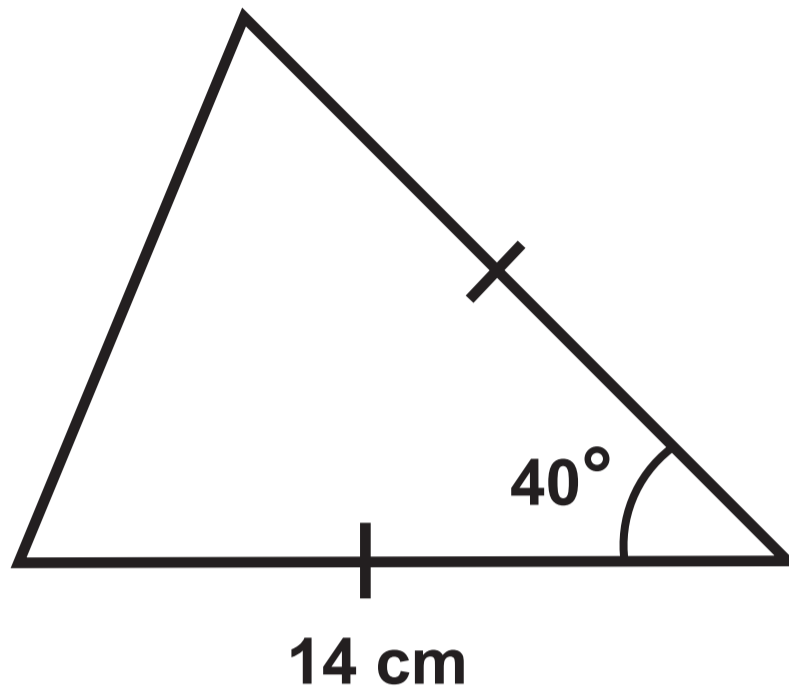
## Question 2 (a)

Table

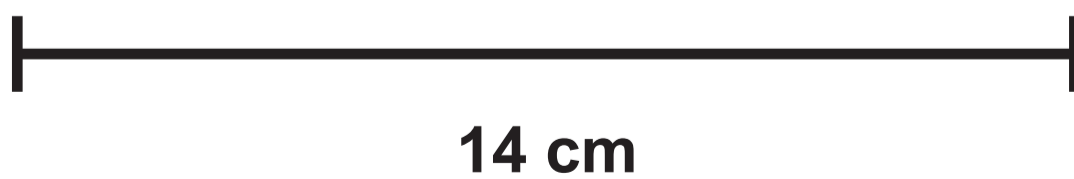
ITEM	COST
36 scones	52 pence each
4 pots of cream	£1.27 per pot
3 jars of strawberry jam	£2.16 per jar
9 plates of sandwiches	£7.98 per plate
Drinks and decorations	£230

**Question 2 (b)**

**Diagram NOT drawn to scale**



**In the space below, make an accurate drawing of the pattern for the bunting.**



## Question 2 (c)

**In the space below, show how the tables and chairs for the 18 people at the party should be arranged.**

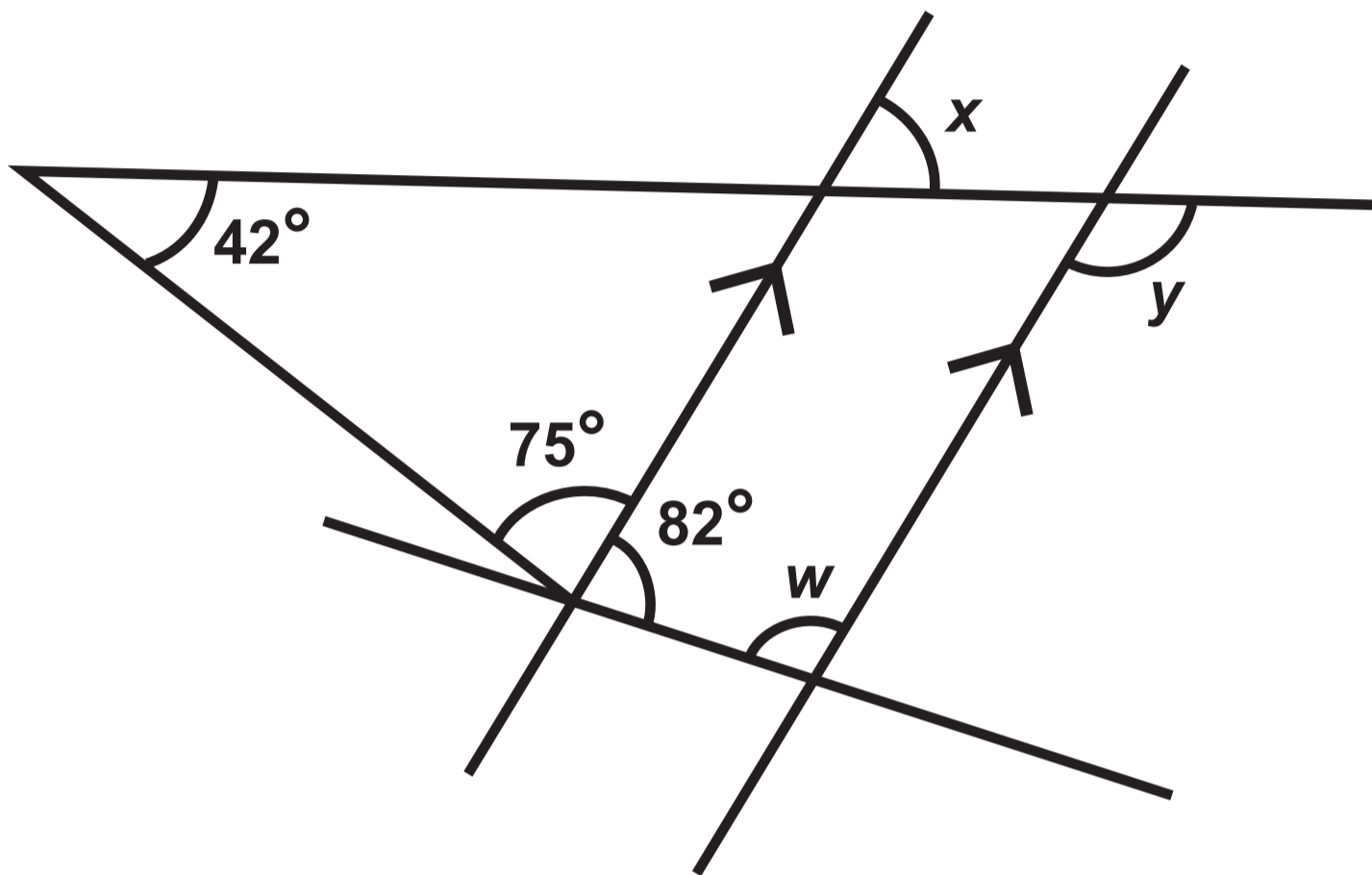
**Question 3 (b)**

**Pie chart**



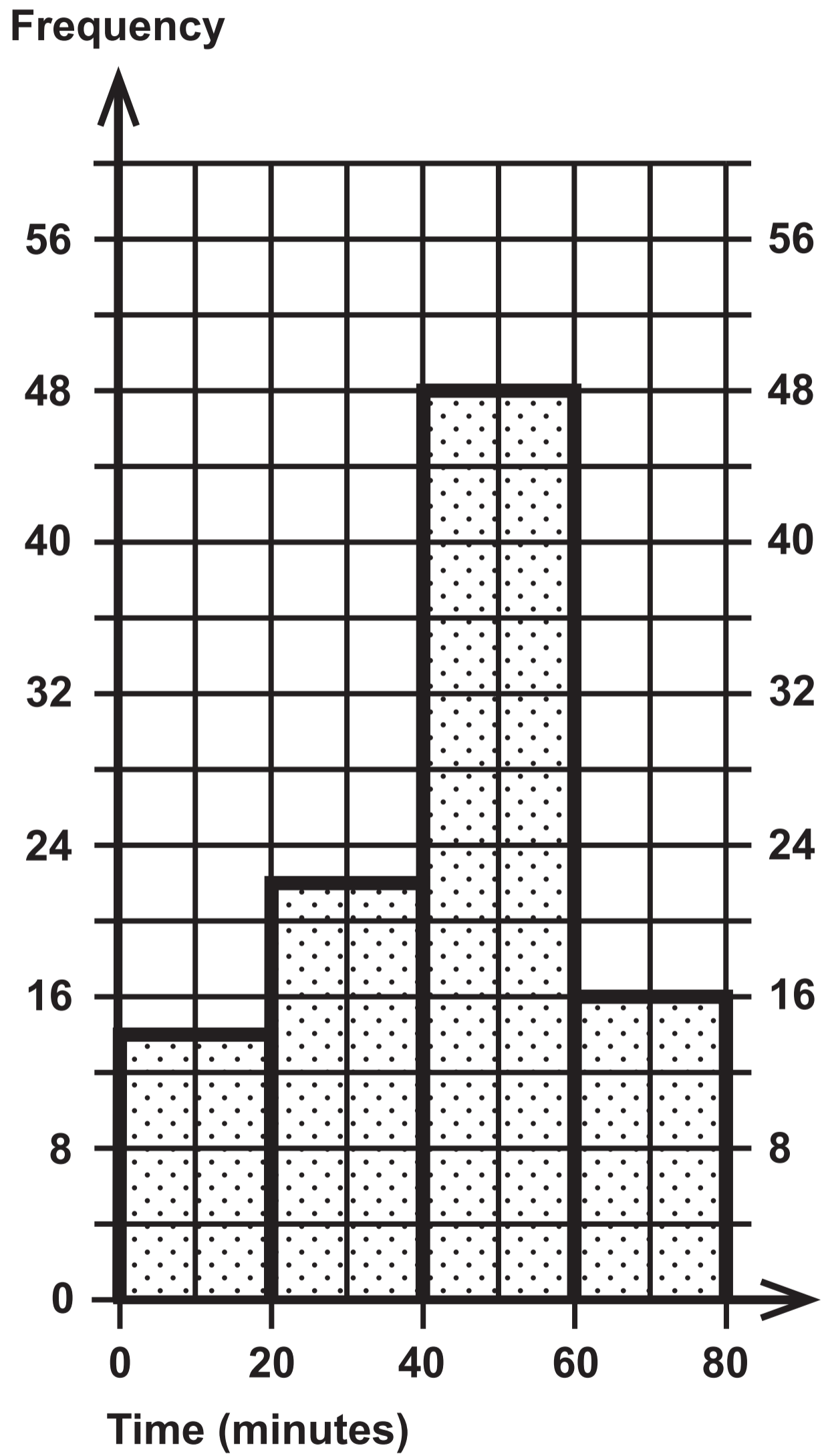
Question 5 (c)

Diagram NOT drawn to scale



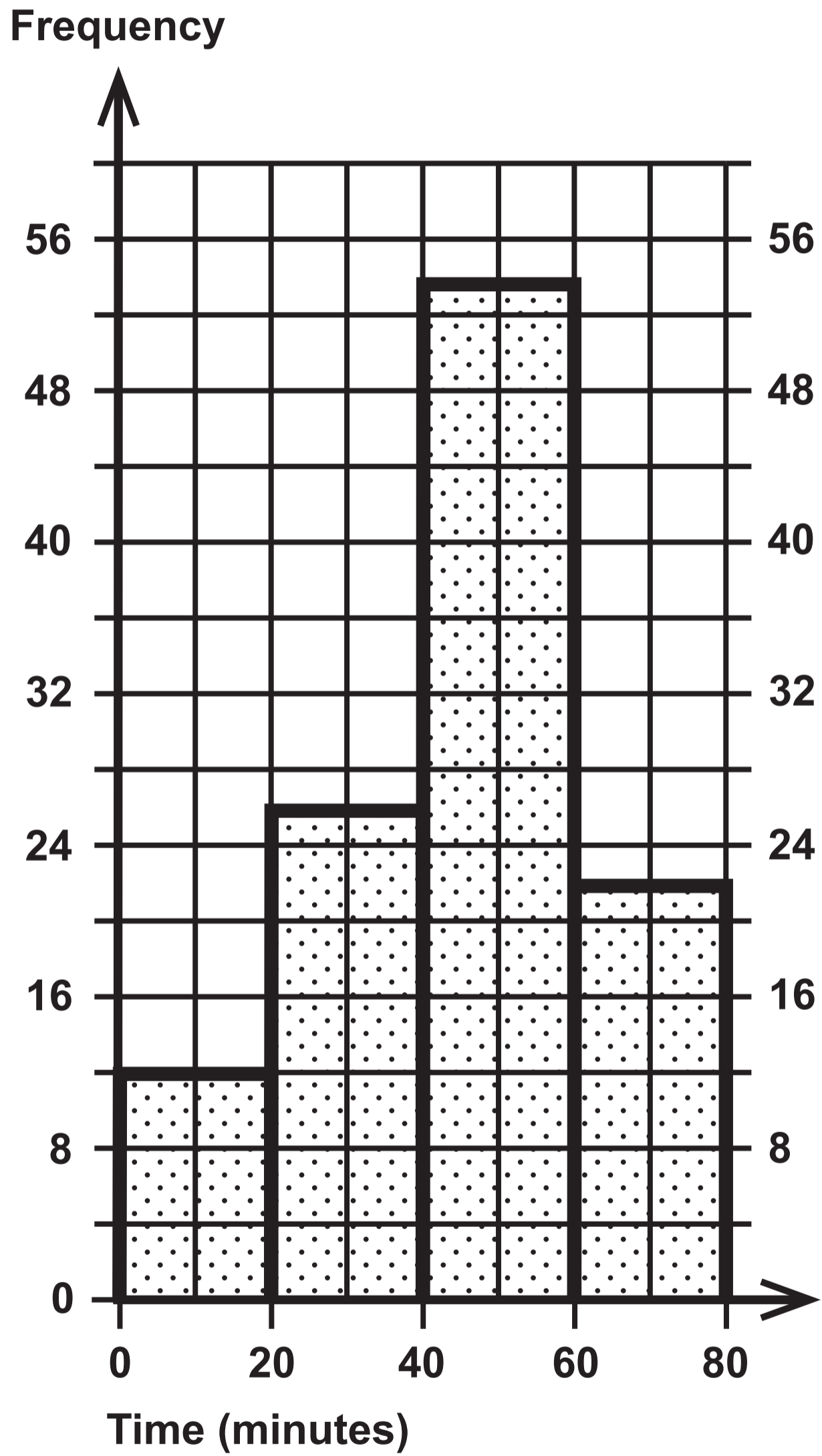
# Question 6

## TIME SPENT TRAINING – MEN



# Question 6

## TIME SPENT TRAINING – WOMEN



**GCSE  
MATHEMATICS  
and  
NUMERACY**



**FORMULA LIST  
FOUNDATION 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  $= \frac{1}{2} (a + b) h$

