Surname	Centre Number	Candidate Number
First name(s)		0

GCSE

3310U10-1

A24-3310U10-1

TUESDAY, 5 NOVEMBER 2024 – MORNING

MATHEMATICS – NUMERACY
UNIT 1: NON-CALCULATOR
FOUNDATION TIER

1 hour 30 minutes

ADDITIONAL MATERIALS

The use of a calculator is not permitted in this examination.

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

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen. Do not use gel pen or correction fluid.

You may use a pencil for graphs and diagrams only.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet. 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 3·14.

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.

For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
1.	**10**	
2.	**11**	
3.	**10**	
4.	**8**	
5.	**10**	
6.	**12**	
7.	**4**	
Total	**65**	

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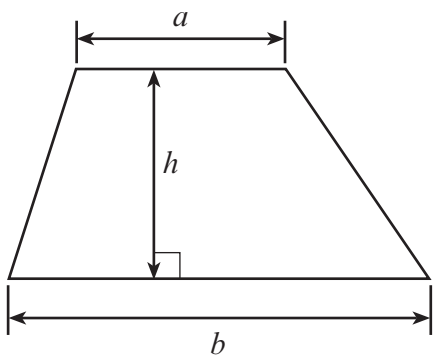
Formula List – Foundation Tier

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



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Examiner only

1. Sharon has a new job in Margam Park.

(a) On a Saturday afternoon, Sharon carried out a survey.
She asked visitors who were leaving Margam Park to choose their favourite activity.
Sharon shows the activities and some of her results in the tally chart below.

Activity	Tally	Frequency
Tree-top adventure	𝍸 𝍸 |	
Park train ride	|||	
Castle tour	𝍸 |	
Mountain biking	𝍸 𝍸 |||	
Playground	𝍸 𝍸 𝍸	

Sharon then realises she did not record the replies of the last 9 visitors. Of these:

- 3 visitors chose the tree-top adventure
- 3 visitors chose the castle tour
- 3 visitors chose mountain biking.

(i) Sharon says:

"The modal favourite activity in the park is the Playground."

Complete the tallies and frequencies in the tally chart above to decide if Sharon is correct.

Is Sharon correct?
Give a reason for your answer. [3]

Yes ☐ No ☐

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(ii) How many visitors took part in the survey in total? [1]

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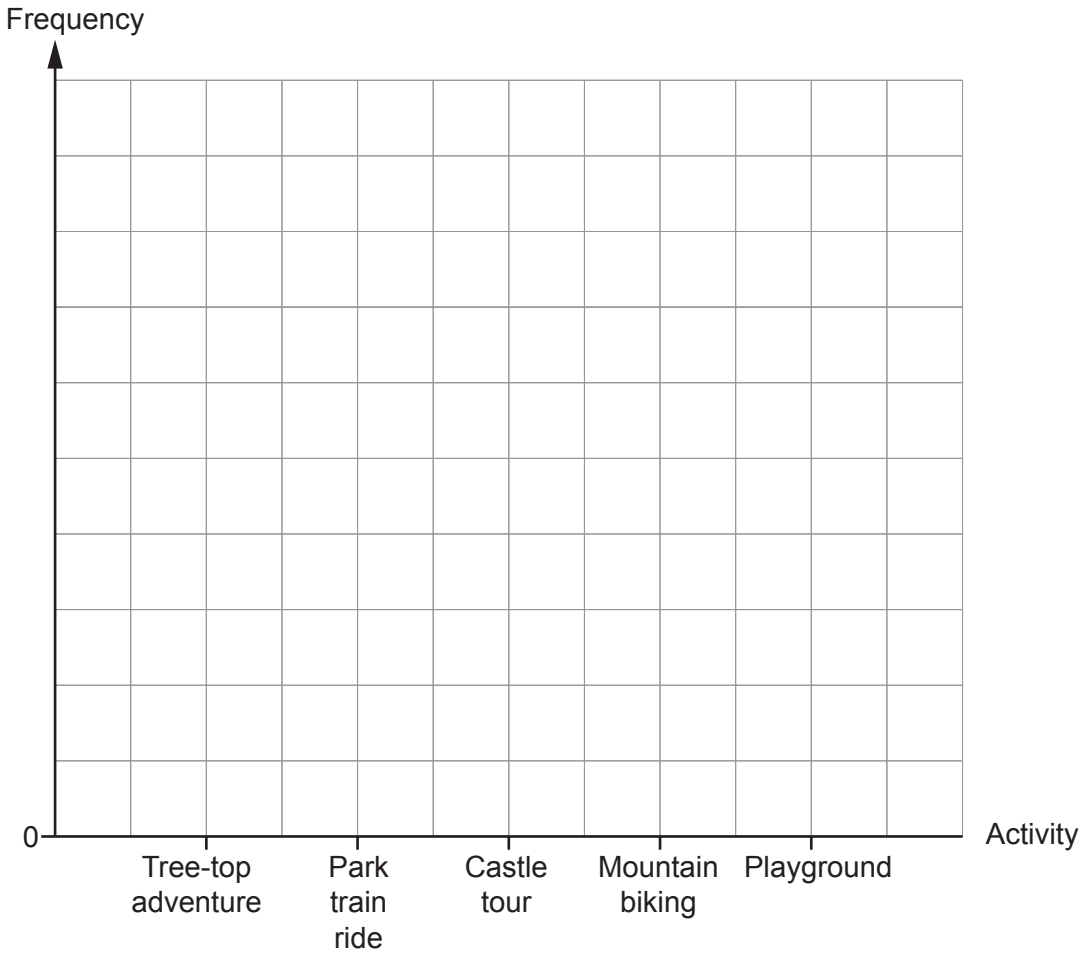
(iii) Sharon displays her findings in a vertical line diagram.
She shows this to other staff at a monthly meeting.

Draw Sharon's **vertical line** diagram. [3]



(iv) Complete the statement below: [1]

'The number of visitors who chose the Playground was ..... times the number who chose the Park train ride.'

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(v) At the monthly meeting, Sharon looks at the results from her Saturday afternoon survey and says:

"This month, the Park train ride is not doing very well when compared with the Playground."

Give one reason why this may **not** be true. [1]

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(b) Sharon has checked the weather forecast for next week and it shows that it will rain on 5 out of the 7 days.
One day from next week is chosen at random.

Which of the following best describes the chance that it will rain on that day?
Circle your answer. [1]

impossible unlikely even chance likely certain

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2. Kiera goes to the cinema with her friend.

(a) *In this part of the question, you will be assessed on the quality of your organisation, communication and accuracy in writing.*

A ticket bought **at the cinema** costs £4.50.

Kiera decides to buy the 2 tickets **online in advance**.

When she buys the tickets online:
- she is given 10% off the cost of each ticket
- she has to pay a total booking fee of £1.40.

How much does Kiera pay in total for the 2 tickets? [4 + 2 OCW]

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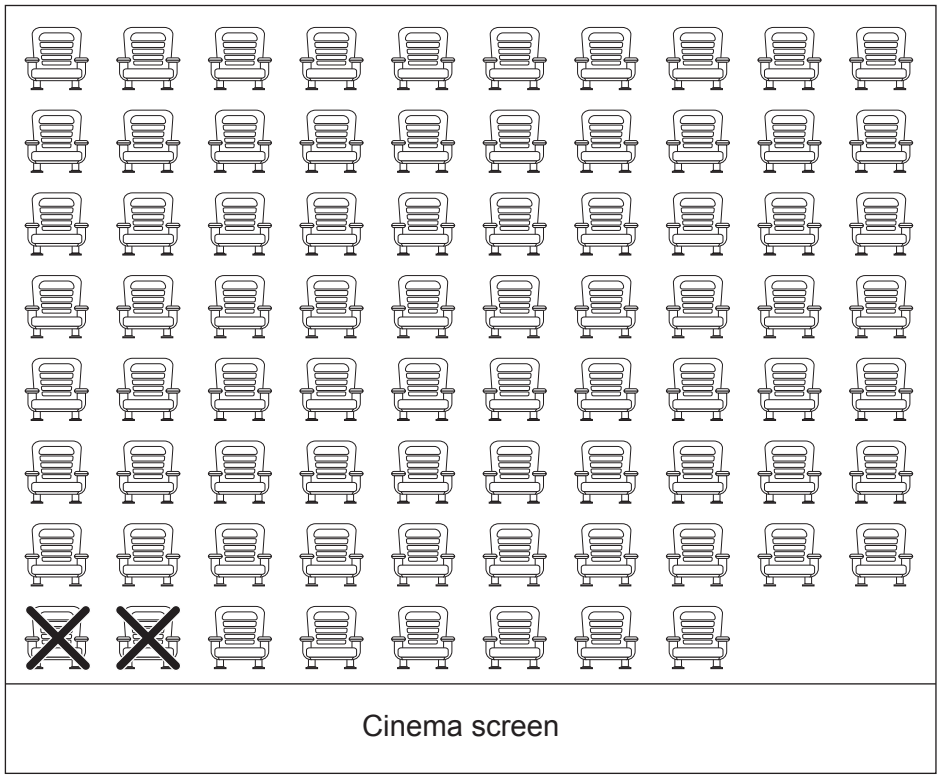
(b) The position of each seat in the cinema is given by a code, for example, seat E5.
Each row of seats is labelled with a letter, A, B, C, D, E, F, G and H.
Each row starts with seat number 1.
Seats A1 and A2 have already been booked.
This is shown by the crosses on the diagram.

Kiera books seats G9 and G10 for herself and her friend.
Draw a cross on each of these 2 seats on the diagram below. [1]



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(c) When Kiera arrives at the cinema, she sees the following prices advertised.

Drinks		Snacks	
Small soft drink	£2.99	Regular popcorn	£4.95
Regular soft drink	£3.29	Large popcorn	£5.45
Large soft drink	£3.59	Nachos	£6.00
		Hot dog	£5.60

Combos			
Classic Combo: (regular soft drink & regular popcorn)	£6.99	Deluxe Combo: (large soft drink & large popcorn)	£7.60

Kiera decides to buy the Deluxe Combo.
How much will Kiera save by buying the Deluxe Combo instead of buying a large soft drink and a large popcorn separately? [4]

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3. (a) Magic Johnson is one of the greatest basketball players of all time.

- He first played for the LA Lakers in 1979.
- His height is 206 cm.
- His salary in 1989 was $3 142 000.

(i) How many years ago did Magic Johnson first play for the LA Lakers? [1]

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(ii) What is Magic Johnson's height in metres? [1]

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(iii) Write his salary of $3 142 000 in words. [1]

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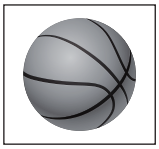
(b) Which of the following is the best description for the shape of a basketball?
Circle your answer. [1]



Sphere Cylinder Cuboid Cone Cube

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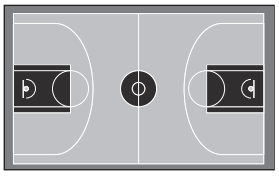
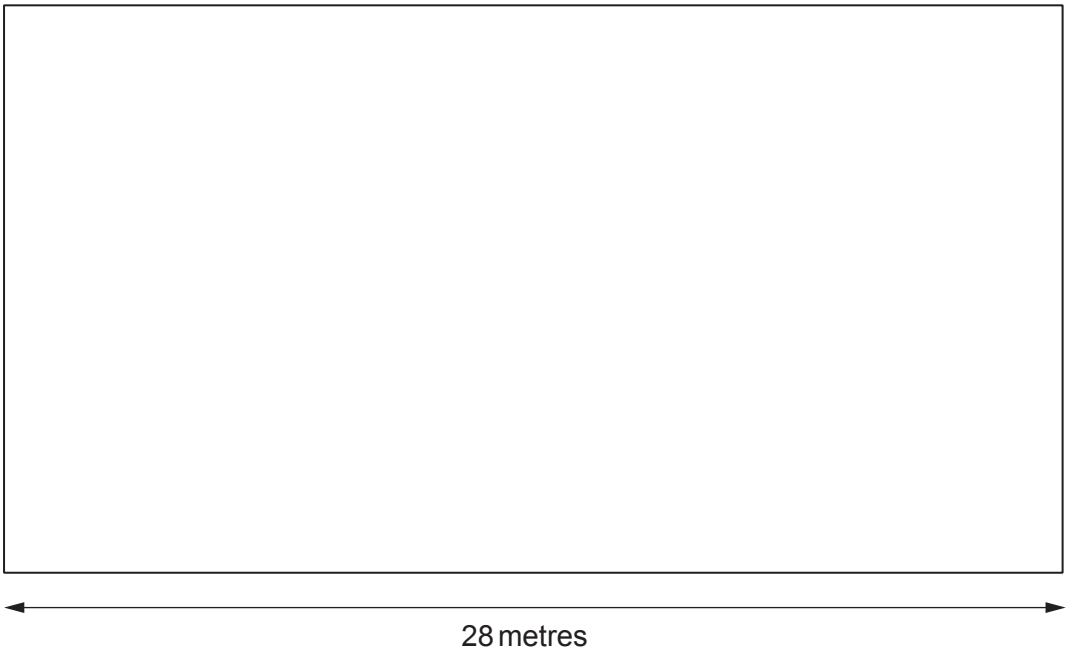
(c) A local basketball club trains on a basketball court each week.



The basketball court is rectangular.

The diagram below is **a scale drawing** of the basketball court.



The **actual length** of the basketball court is 28 metres.
Use the scale drawing to find the **actual width** of the basketball court. [3]

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Actual width of the basketball court is ..... metres

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(d) The diagram below represents the positions of three players on a basketball court.

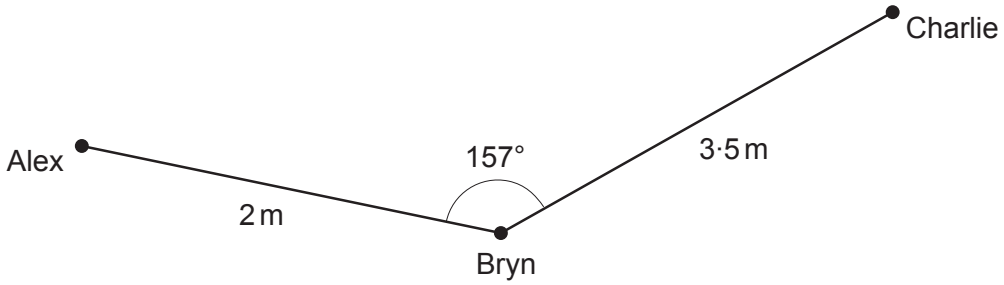

Diagram not drawn to scale

(i) Bryn faces Alex.
Bryn then turns clockwise to face Charlie.

Charlie thinks that Bryn has turned through an acute angle.
Do you agree?
Give a reason for your answer. [1]

Yes ☐ No ☐

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(ii) In the space below, complete an **accurate scale drawing** to show Charlie's position.

The positions of Alex and Bryn are shown.

Use the scale: 1 cm represents 0·5 m. [2]

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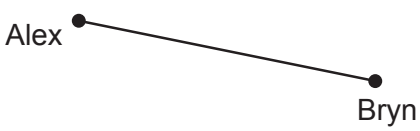

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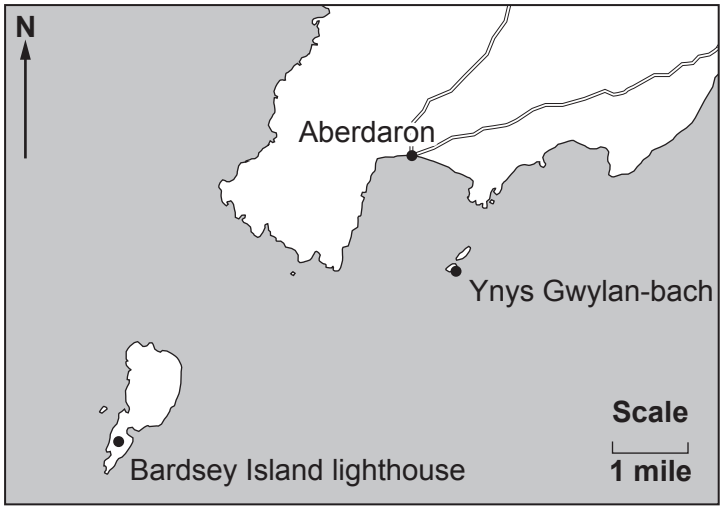
4. (a) The map below shows part of the coastline and some islands off the coast of Gwynedd.



(i) Write down the bearing of Aberdaron from Bardsey Island lighthouse. [1]

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(ii) Write down the bearing of Bardsey Island lighthouse from Ynys Gwylan-bach. [1]

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(iii) Huw can see Bardsey Island lighthouse from Ynys Gwylan-bach.
How far is the lighthouse from Ynys Gwylan-bach?
Give your answer in **kilometres**.
You must show all your working. [2]

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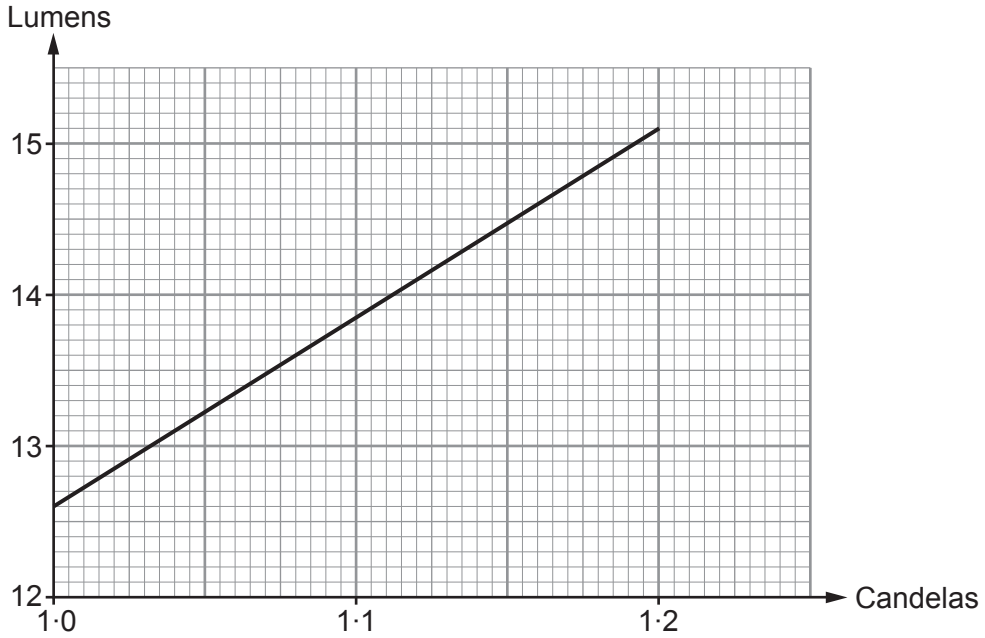
(b) The candela and the lumen are units that can be used to measure light intensity.

Below is a conversion graph.
You can use this graph to make approximate conversions between candelas and lumens for a particular type of light.



For this type of light, complete each of the following statements.

(i) 1·15 candelas is approximately equal to ..... lumens. [1]

(ii) 13·5 lumens is approximately equal to ..... candelas. [1]

(c) The light from Bardsey Island lighthouse has an intensity of approximately 52 000 candelas.
The light from Strumble Head lighthouse in Pembrokeshire has an intensity of approximately 1 000 000 candelas.

By estimating, complete the following statement.
You must show all your working. [2]

'The light from Strumble Head lighthouse is approximately ..... times as intense as the light from Bardsey Island lighthouse.'

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Examiner only

5. Maria makes and sells individual portions of salad.

(a) The tomatoes Maria needs to make 5 portions of salad cost her £1.75.
Calculate the cost of the tomatoes she needs to make 40 portions of this salad. [3]

(b) Maria makes a salad dressing from oil and vinegar.
She uses oil and vinegar in the ratio 3 : 1.
Maria makes 280 ml of salad dressing.
Calculate the quantity of oil and the quantity of vinegar in the salad dressing. [3]

Oil ..... ml

Vinegar ..... ml

(c) It costs Maria £24 to make 40 portions of salad.
She sells all these portions of salad for 90p each.

Calculate the **percentage** profit that Maria makes. [4]

Examiner only

6. (a) Charlton Garden Centre sells plant pots and saucers.


40p


25p

At the garden centre, Enid buys twice as many plant pots as she does saucers.
The cost of a plant pot is 40p.
The cost of a saucer is 25p.
She spends £10.50 buying these plant pots and saucers.

Calculate how much Enid spends on buying the **saucers**.
You must show all your working. [3]

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Enid spends £ ..... buying the **saucers**

(b) Charlton Garden Centre sells packets of wild flower seeds.

Bee Flower Mix
1 g packet of seeds
£2.49

Cornfield Flower Mix
5 g packet of seeds
£15

Butterfly Flower Mix
3 g packet of seeds
£7.20

Which of the three different packets of seeds is the best value for money?

Bee Flower Mix ☐ Cornfield Flower Mix ☐ Butterfly Flower Mix ☐

You must show all your working. [4]

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(c) Gareth buys packets of Cosmos flower seeds to sow in a part of his garden.
The diagram below shows this part of his garden.

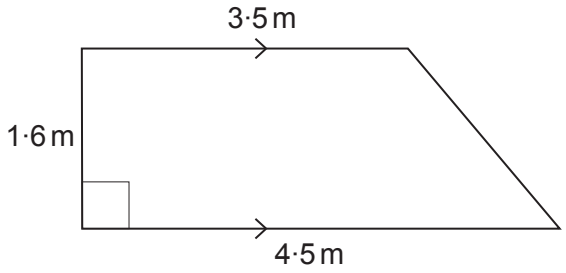


Diagram not drawn to scale

A 2·5 g packet of Cosmos seeds costs £8.20.
Gareth needs 1 gram of Cosmos seeds to sow an area of 1 m^2.

Calculate how much it costs Gareth to buy the packets of Cosmos seeds he needs to sow this part of the garden.
You must show all your working. [5]

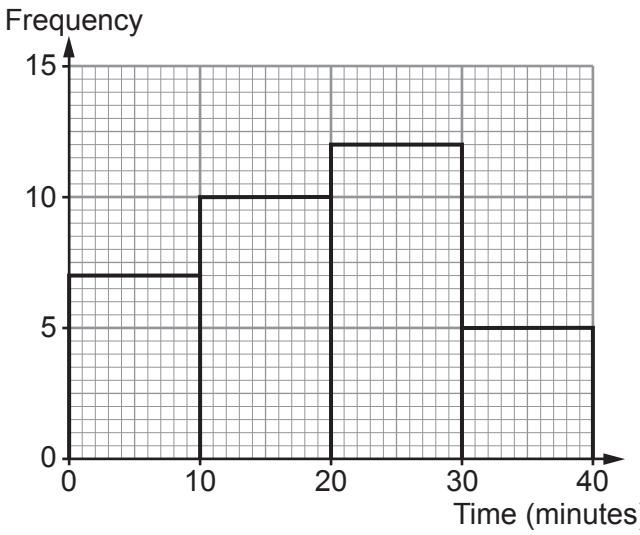
Examiner only

7. Miss Hughes asked her class of Year 9 pupils and her class of Year 10 pupils how many minutes they each spent on their mathematics homework last weekend.

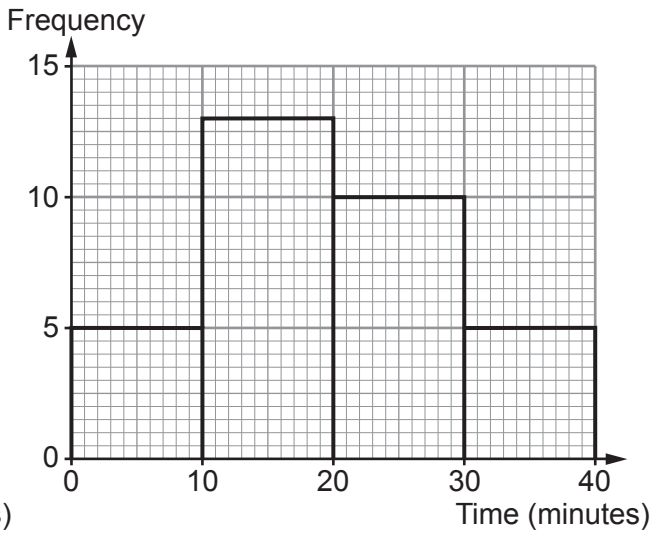
The frequency diagrams below show the results.
The groups used are as follows:

$0 \leqslant \text{time} < 10, \quad 10 \leqslant \text{time} < 20, \quad 20 \leqslant \text{time} < 30 \quad \text{and} \quad 30 \leqslant \text{time} < 40.$

Year 9



Year 10



(a) What is the modal group of the times for the Year 9 pupils? [1]

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(b) How many of the Year 10 pupils spent 20 minutes or more on their mathematics homework last weekend? [1]

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(c) Did any of the Year 10 pupils spend **no** time on their mathematics homework last weekend?

Yes ☐ No ☐ Can't tell ☐

You must give a reason for your answer. [1]

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(d) Delyth calculates the following:

- the fraction of the Year 9 pupils who spent between 30 and 40 minutes on their homework
- the fraction of the Year 10 pupils who spent between 30 and 40 minutes on their homework.

Delyth says,

"These fractions are exactly the same."

Is Delyth correct?

Yes ☐ No ☐

You must give a reason for your answer. [1]

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END OF PAPER

Question number	Additional page, if required. Write the question number(s) in the left-hand margin.

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