Surname	Centre Number	Candidate Number
Other Names		0

GCSE

4370/03

S16-4370-03

MATHEMATICS – LINEAR
PAPER 1
FOUNDATION TIER

A.M. THURSDAY, 26 May 2016

1 hour 45 minutes

CALCULATORS ARE NOT TO BE USED FOR THIS PAPER

ADDITIONAL MATERIALS

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.

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

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

If you run out of space, use the continuation page 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.

You are reminded that assessment will take into account the quality of written communication (including mathematical communication) used in your answer to question **3**.

For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
1.	**11**	
2.	**8**	
3.	**6**	
4.	**4**	
5.	**7**	
6.	**3**	
7.	**4**	
8.	**9**	
9.	**3**	
10.	**6**	
11.	**4**	
12.	**5**	
13.	**4**	
14.	**3**	
15.	**5**	
16.	**4**	
17.	**5**	
18.	**9**	
Total	**100**	

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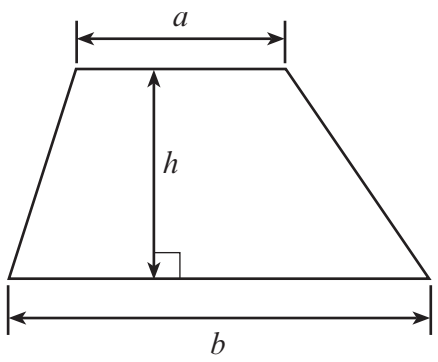
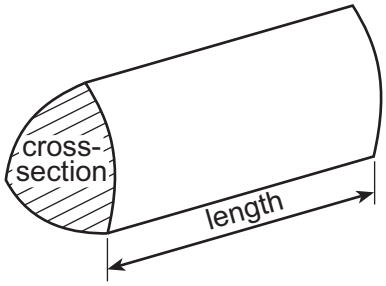
Formula List

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



Volume of prism = area of cross-section × length



Examiner only

1. *(a)* (i) Write down, in figures, the number forty-six thousand and eight. [1]

.....

(ii) Write down, in words, the number 8 600 000. [1]

.....

.....

(b) Using only the numbers in the following list,

38 42 64 14 52 24

write down

(i) two numbers that have a sum of 90, [1]

.....

(ii) two numbers that have a difference of 18, [1]

.....

(iii) the number less than 30 that is divisible by 6, [1]

.....

(iv) a square number. [1]

.....

(c) Write 6657 correct to the nearest hundred. [1]

.....

(d) Write down all the factors of 77. [2]

.....

(e) Each of the digits 5, 7, 2 and 6 is used once to make a four-digit number.

(i) What is the largest number that can be made? [1]

.....

(ii) What is the smallest even number that can be made? [1]

.....

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Examiner only

2. *(a)* Write down the next term in each of the following sequences. [2]

(i) 15, 24, 33, 42, ...

(ii) 8, 9, 11, 14, ...

.....

.....

(b) Write down the value of the 8 in the number 56182. [1]

.....

(c) Write $\frac{13}{25}$ as a percentage .....

Write 0·51 as a percentage .....

Write 55%, 0·51 and $\frac{13}{25}$ in ascending order. [3]

.....

(d) Find an estimate for the value of 42·2 × 11·3.
Show all your working. [2]

.....

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.....

Examiner only

3. *You will be assessed on the quality of your written communication in this question.*

Ali, Claire, Nick and Sam go out for a meal together.
The meal costs a total of £40.
Ali pays £9.35.
Claire pays £8.85.
Nick pays £1.50 less than Sam.
How much does Nick pay?
You must show all your working. [6]

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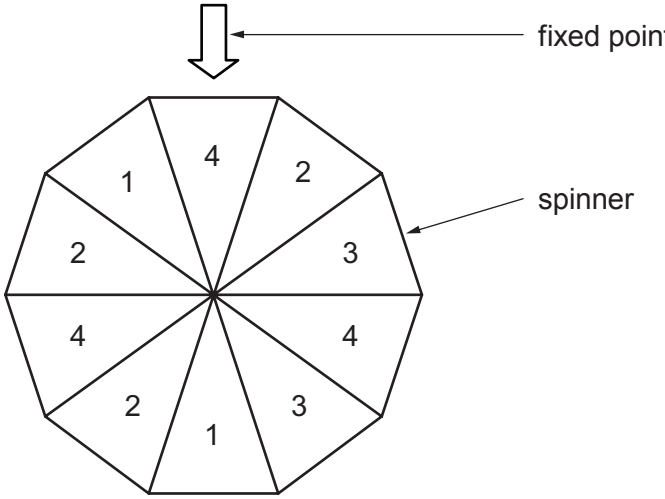
4. *(a)* A spinner has numbers on each of its equal sections, as shown in the diagram.



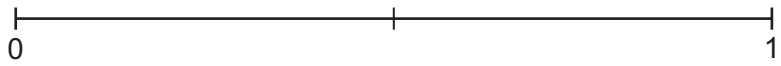
The spinner is spun and the number shown at the fixed pointer when it stops is the result.

On the probability scale shown below, mark the points **A**, **B** and **C** where:

A is the probability that the result is less than 5,

B is the probability that the result is more than 2,

C is the probability that the result is a 3. [3]



(b) Choose the best expression from those given below to describe the chance that the number spun is **not** a 2. [1]

impossible **unlikely** **even chance** **likely** **certain**

.....

Examiner only

5. *(a)* Simplify $6c - 4c + c$. [1]

.....

.....

(b) Use the formula $T = 7A - 3B - 8C$ to find the value of T when $A = 3$, $B = 4$ and $C = \frac{1}{4}$. [2]

.....

.....

.....

(c) The x and y values of the coordinates of the points (4, 16), (5, 20), (6, 24), ..., (x, y) all follow the same rule.
Write down the rule connecting x and y. [2]

.....

.....

.....

(d) Solve $10 - x = 4$. [1]

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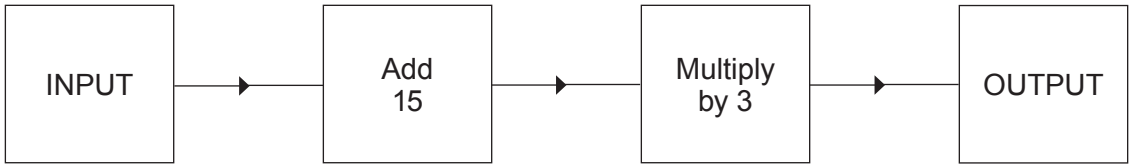
.....

.....

(e) The diagram below represents a number machine.



Find the OUTPUT when the INPUT is -8. [1]

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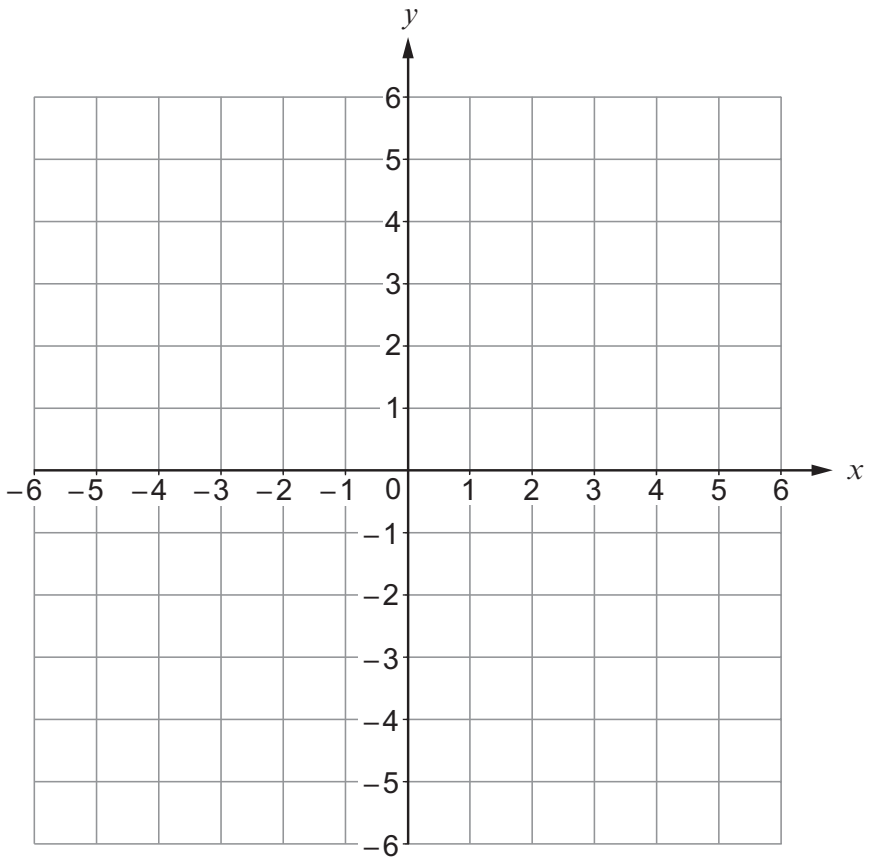
6. On the squared paper below, plot the points $A(5, -5)$, $B(-2, 4)$ and $C(-4, -3)$. [3]



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7. A washing machine engineer takes 1 hour 15 minutes to service a machine.

The cost is found using the following formula:

Cost = £40 × number of hours worked + total cost of parts

Calculate the cost for servicing 6 washing machines when the total cost of parts is £87. [4]

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8. The table below shows the times and heights of tides in Swansea Bay for a week in 2015.

	Tide out		Tide in		Tide out		Tide in	
	Time	Height (metres)	Time	Height (metres)	Time	Height (metres)	Time	Height (metres)
11th March	03:07	4·57	09:21	11·77	15:26	4·76	21:39	11·53
12th March	03:45	4·94	10:00	11·34	16:07	5·18	22:22	11·10
13th March	04:32	5·37	10:49	10·85	16:59	5·63	23:18	10·68
14th March	05:33	5·78	11:53	10·43	18:07	5·98		
15th March							00:30	10·39
	06:53	6·00	13:17	10·27	19:34	6·03		
16th March							02:00	10·51
	08:23	5·77	14:46	10·60	21:00	5·60		
17th March							03:22	11·07
	09:39	5·15	15:58	11·26	22:06	4·92		

(a) The times of tides differ every day.
When was the tide **in** for the first time on

(i) 12th March ..... [1]

(ii) 15th March ..... [1]

(b) How long is it between the times that the tides were **out** on 13th March? [2]

.....

.....

(c) How much earlier in the day was the **first tide out** on 11th March than the **first tide out** on 17th March? [2]

.....

.....

Examiner only

(d) When was the highest tide? [1]

Time ..... Date .....

(e) How much did the sea rise during the first tide on 14th March? [2]

.....

.....

9. A cuboid is labelled P.
A cone is labelled Q.
A cylinder is labelled R.
A triangular prism is labelled S.
A hexagon is labelled T.

Complete the following table. [3]

Property of the shape	Label on shape
It has 5 faces, 3 of which are rectangular	
It is not a 3D shape	
It has **exactly** one circular face	
It has 12 edges	

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10. An 8 cm by 3 cm rectangle is placed with two 6 cm by 3 cm rectangles to make the shape shown in the diagram.

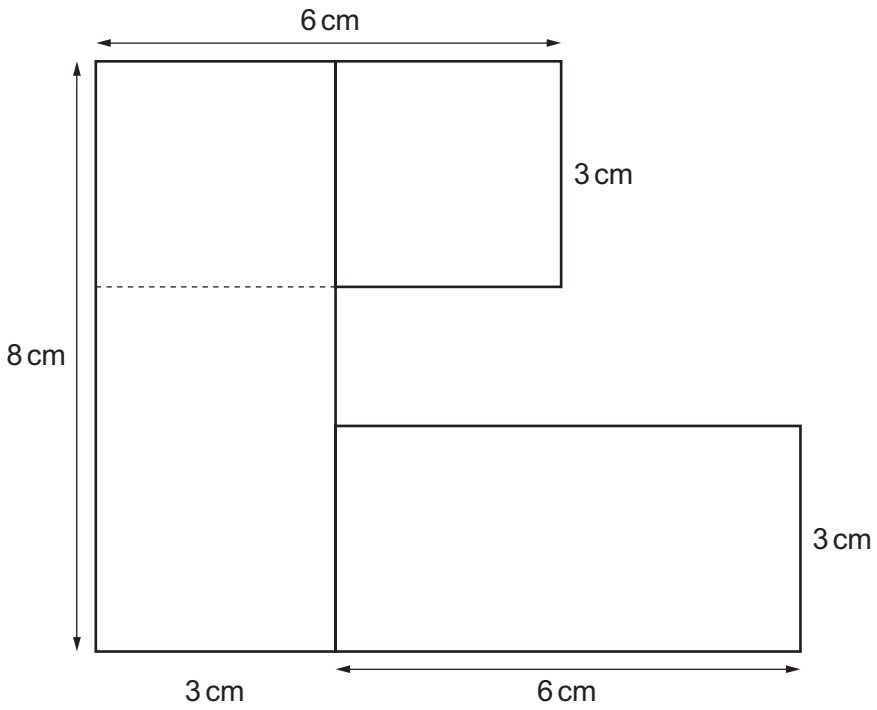

Diagram not drawn to scale

(a) Calculate the perimeter of the shape. [3]

.....

.....

.....

(b) Calculate the area of the shape.
Write down the units of your answer. [3]

.....

.....

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.....

Examiner only

11. The diagram shows the parallelogram $PQRS$ in which $\hat{QRS} = 48^\circ$.

The line QT is drawn so that $\hat{PQT} = 53^\circ$.

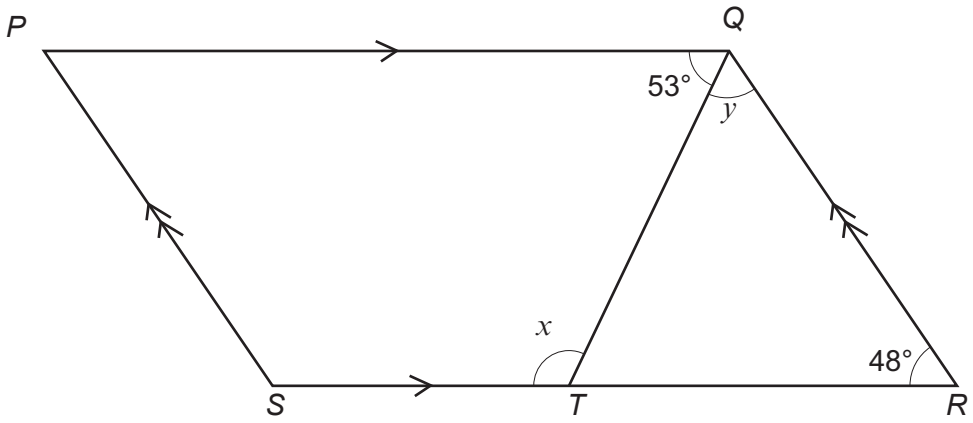

Diagram not drawn to scale

(a) Find the size of angle x. [2]

(b) Find the size of angle y. [2]

Examiner only

12. The graph opposite shows John's journey by car from his home in Bangor to a roadside café and then on to Cardigan.
Cardigan is 120 miles from Bangor.

(a) How far did John travel in the first hour? [1]

.....

(b) John was, on average, travelling faster before stopping at the café than he was after he left the café.
Without calculating any speeds, explain how you can tell this from the graph. [1]

.....

.....

(c) John's friend Marcus sets out from Cardigan at 13:00 and travels at an average speed of 30 mph to the café.
Draw his journey on the graph paper. [2]

(d) By how many minutes did Marcus miss meeting his friend at the café? [1]

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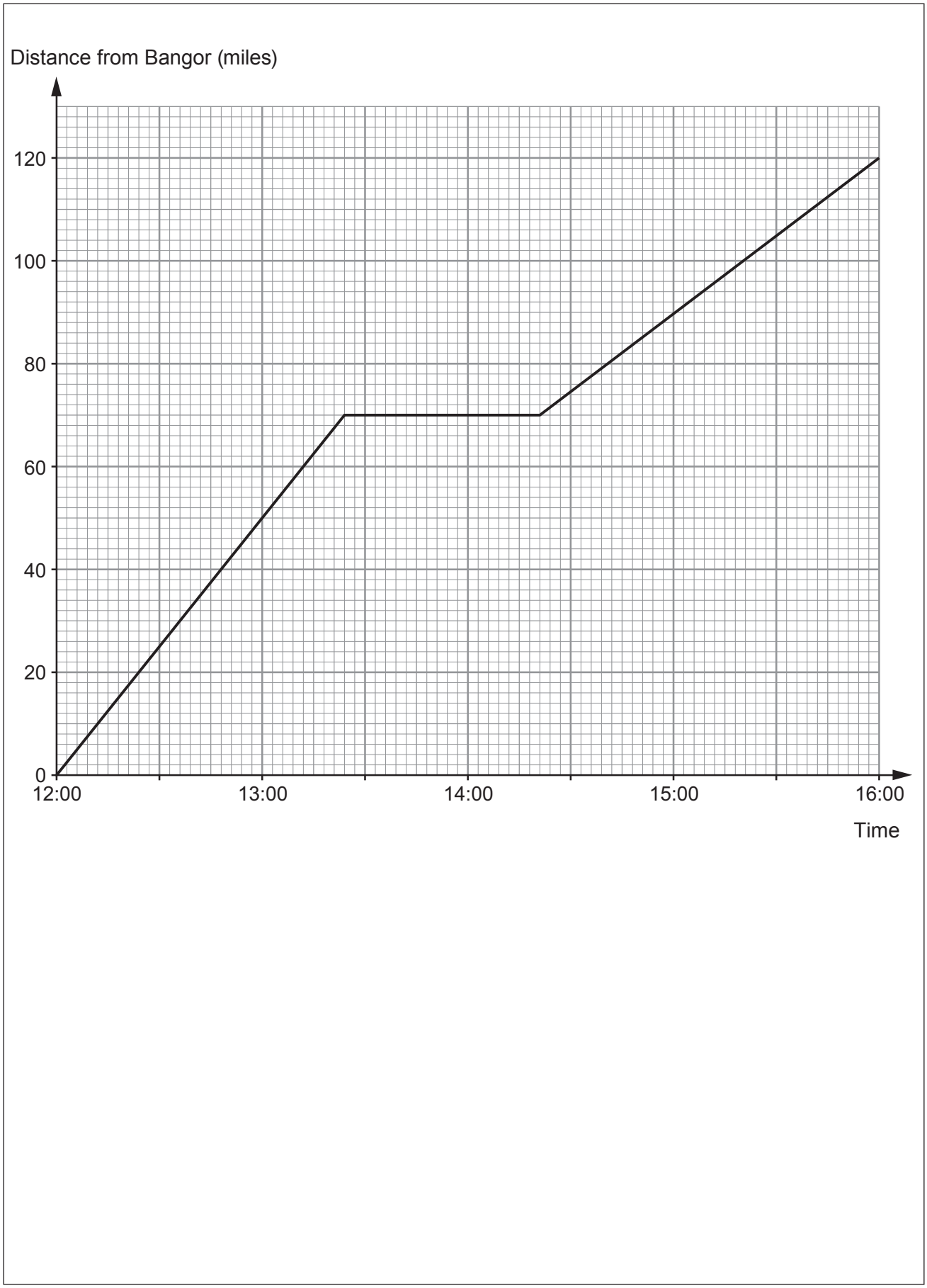
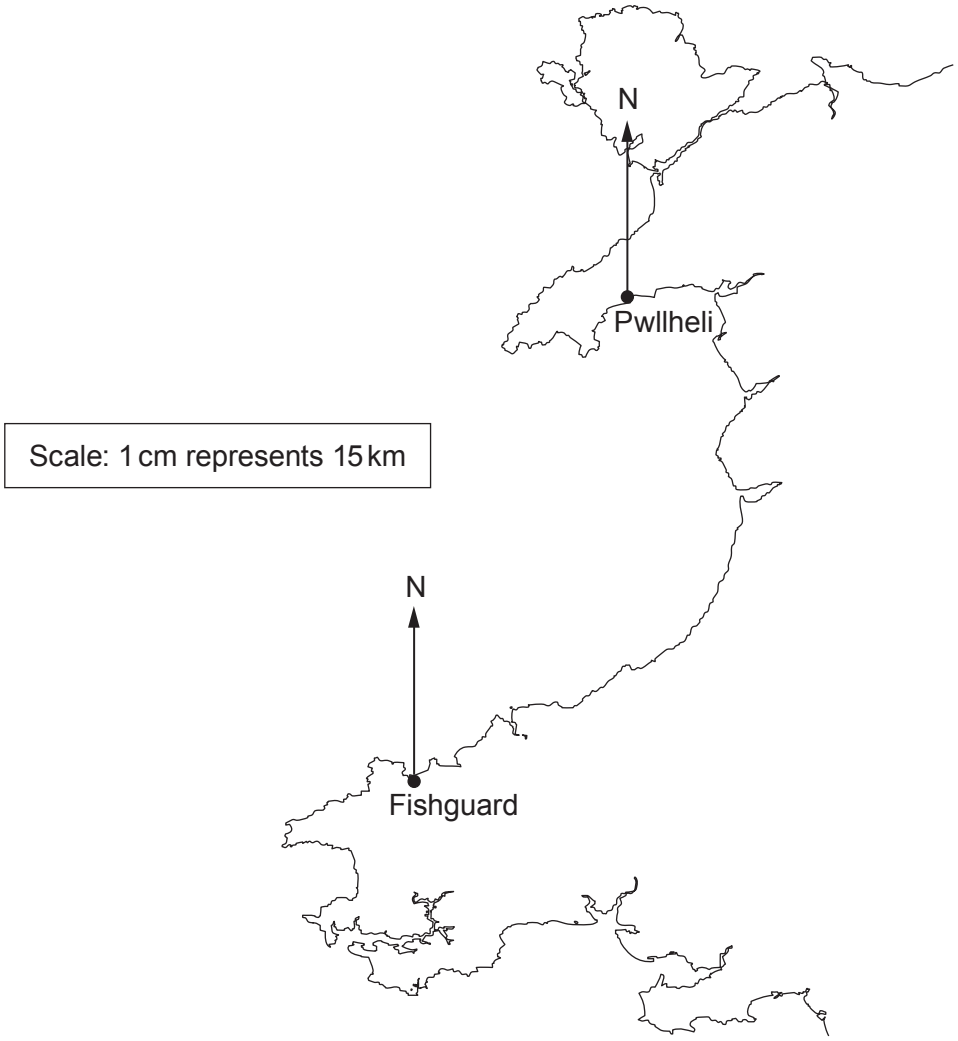


Turn over.

Examiner only

13. *(a)* The diagram shows Pwllheli and Fishguard on a map of Wales.
Calculate the actual straight-line distance between Pwllheli and Fishguard.
Give your answer in km. [3]



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Actual distance between Pwllheli and Fishguard = ... km

(b) What is the bearing of Pwllheli from Fishguard? [1]

.....

Examiner only

14.

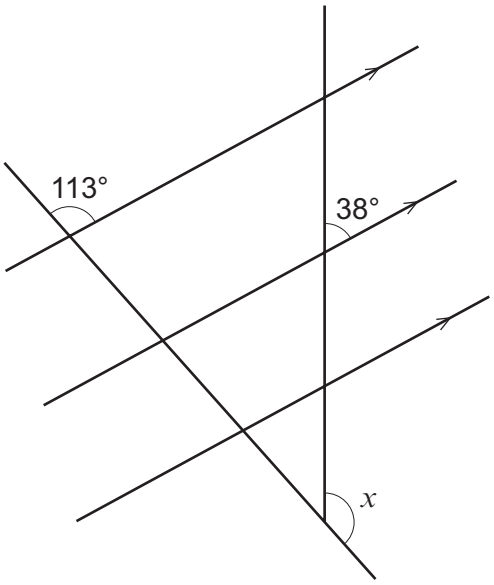


Diagram not drawn to scale

Calculate the size of angle x. [3]

.....

.....

.....

x = ... °

Turn over.

Examiner only

15. Maria sells ribbon.

She has a 400 cm length of ribbon.

Maria cuts off $\frac{3}{10}$ of this ribbon and sells this piece to a customer.

She uses $\frac{2}{5}$ of the **remaining** ribbon herself to decorate a card.

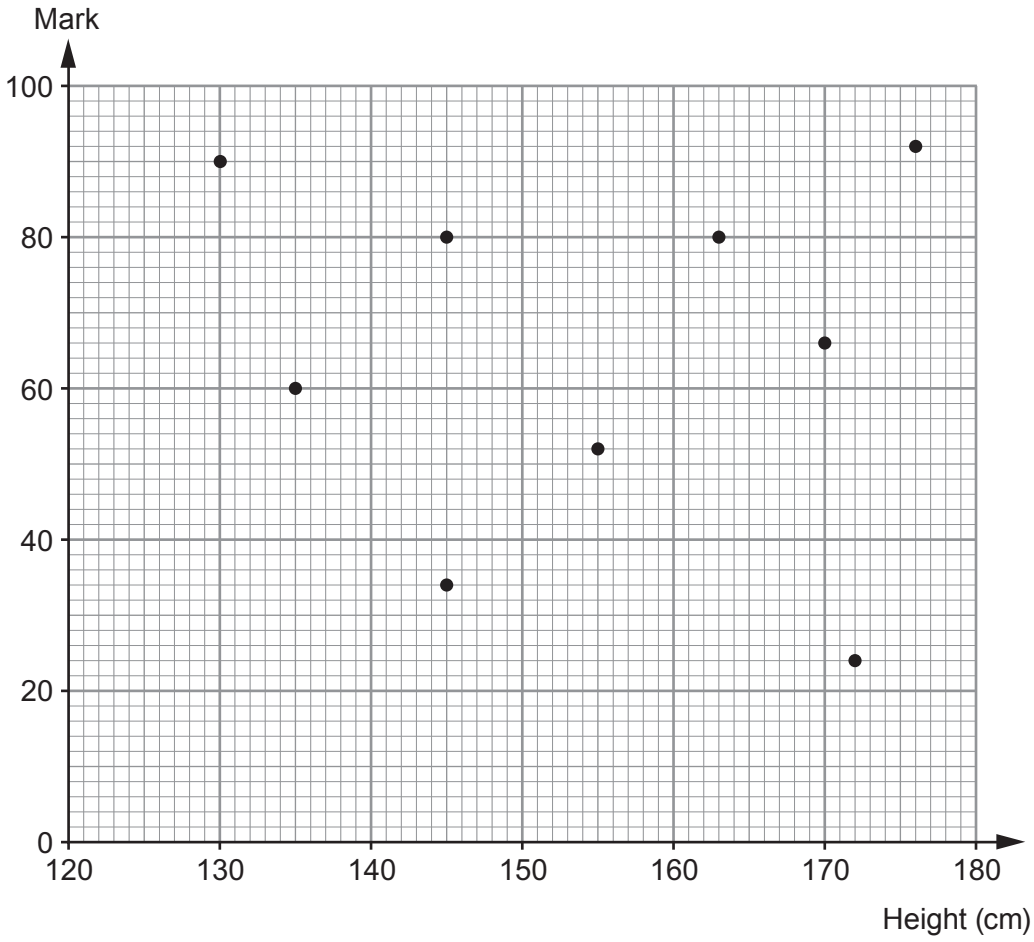
Then, Maria cuts the ribbon that is left over into three equal lengths.

What is the length of each of these three remaining pieces of ribbon? [5]

The length of each remaining piece of ribbon is ..... cm

Examiner only

16. A number of students took an examination.
The heights of these students and the mark they each scored is shown in the scatter diagram below.



(a) Describe the correlation shown by the scatter diagram. [1]

.....

(b) Charlotte scored the same mark as Dewi.
Charlotte is taller than Dewi.
Henri is the tallest student in the class.
Dewi and Gareth are both the same height.

Complete the table. [3]

Name	Height (cm)	Mark
Dewi		
Charlotte		
Henri		
Gareth		

Examiner only

17. Our recommended daily intake of food is often given in calories.

A small bag of 20 almonds provides 160 calories.

It is recommended that Joseff's diet should contain 1920 calories per day.

Joseff eats a large portion of almonds one day.
It is 25% of his recommended daily calories.

How many almonds does he eat?
You must show all your working. [5]

Examiner only

18. *(a)* Solve $5x - 65 = 3x - 17$. [3]

(b) Solve $\frac{x}{4} + 12 = 28$. [2]

(c) Expand $y(y + 8)$. [2]

(d) Solve $10x + 8 < 42$. [2]

END OF PAPER

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

Examiner only

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