Surname	Centre Number	Candidate Number
Other Names		0

GCSE

4351/01

W15-4351-01

MATHEMATICS (UNITISED SCHEME)

UNIT 1: Mathematics in Everyday Life

FOUNDATION TIER

A.M. FRIDAY, 9 January 2015

1 hour 15 minutes

For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
1.	**4**	
2.	**6**	
3.	**3**	
4.	**5**	
5.	**3**	
6.	**7**	
7.	**4**	
8.	**6**	
9.	**7**	
10.	**3**	
11.	**3**	
12.	**5**	
13.	**5**	
14.	**4**	
Total	**65**	

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ADDITIONAL MATERIALS

A calculator will be required for this paper.

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

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.

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.

Take π as 3·14 or use the π 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.

You are reminded that assessment will take into account the quality of written communication (including mathematical communication) used in your answer to question **6**.

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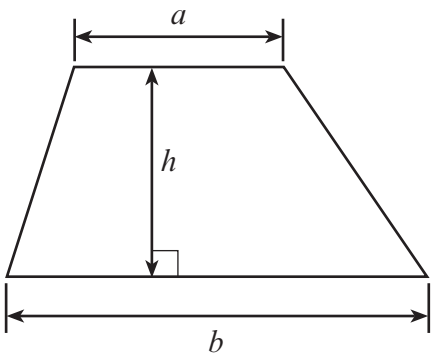
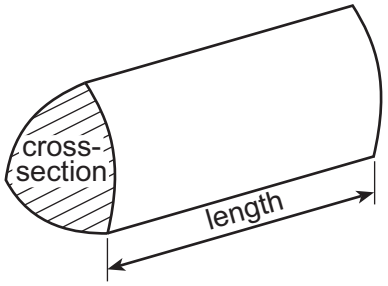
Formula List

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



Volume of prism = area of cross-section × length



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1. Twenty-five thousand and sixty-eight people have signed a petition.

(a) Write this number in figures. [1]

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(b) The organisers of the petition hope to get 30 000 people to sign.
How many more signatures do they need to reach this target? [1]

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(c) In the end they managed to get 30 810 signatures.

(i) Write this number correct to the nearest 1000. [1]

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(ii) The organisers had asked around 63 000 people to sign the petition.
Which **one** of the following fractions,

$$\frac{1}{10} \qquad \frac{1}{5} \qquad \frac{1}{4} \qquad \frac{1}{3} \qquad \frac{1}{2}$$

should be inserted in the statement below to make it accurate? [1]

'Nearly ..... of the people asked signed the petition.'

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2. Fifty people who regularly visit the cinema were asked which of four types of film they preferred. The four types of film were Comedy (C), Adventure (A), Science Fiction (SF) and Romantic (R). The answers given are recorded on the grid below.

A	R	C	SF	R	C	C	SF	A	C
SF	SF	R	C	R	C	SF	C	SF	R
R	C	C	SF	C	R	R	C	C	SF
C	A	C	R	SF	R	A	A	R	C
A	R	A	C	A	C	A	A	C	R

(a) Complete the frequency table below. [2]

Type of film	Tally	Frequency
Comedy (C)		
Adventure (A)		
Science Fiction (SF)		
Romantic (R)		

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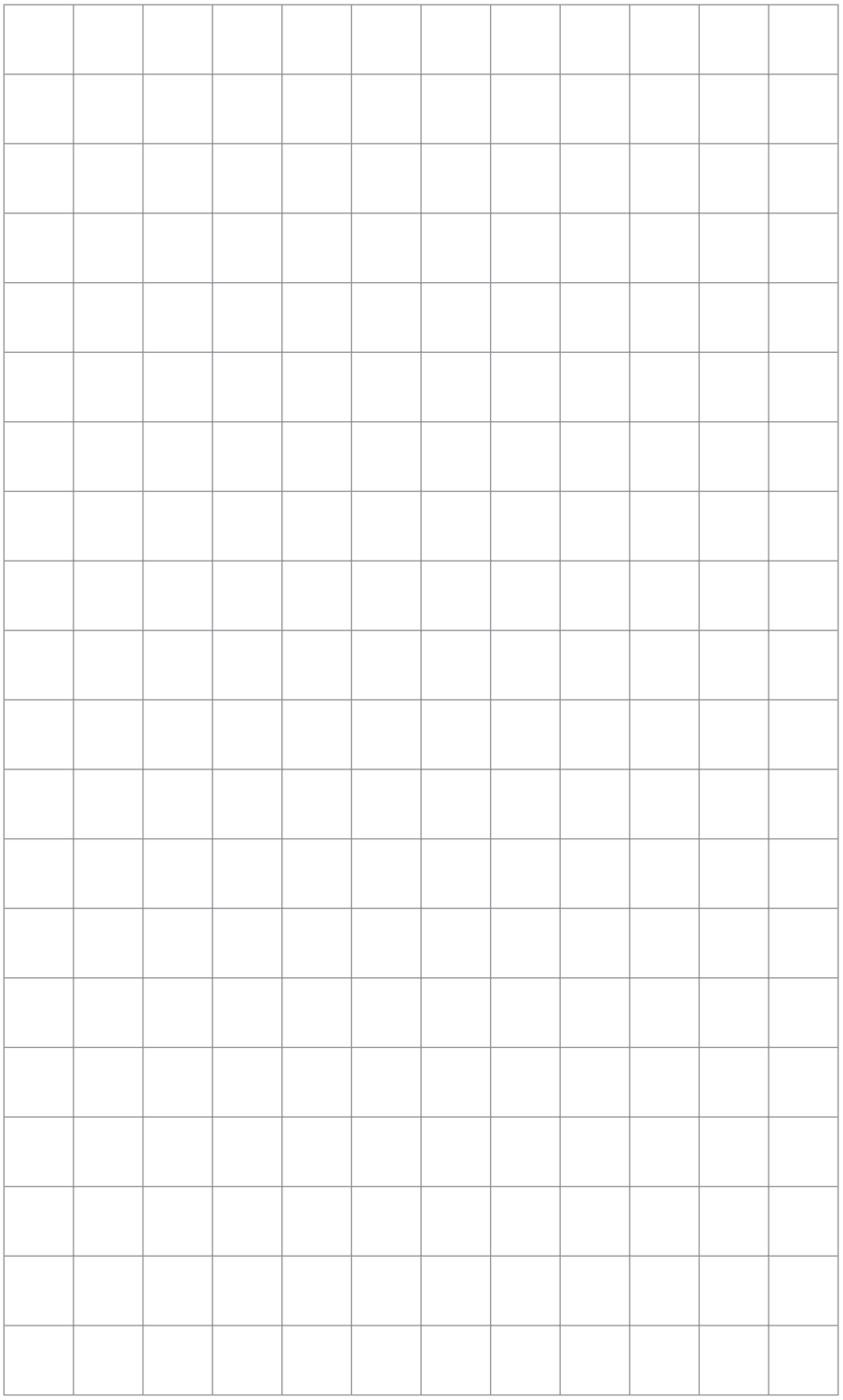
(b) Draw a bar chart to display the results. [4]



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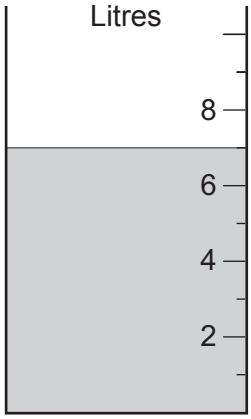
3. *(a)* The diagram below shows a glass container holding some water.

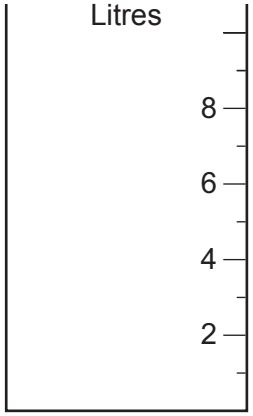


(i) What is the volume of water in the container? [1]

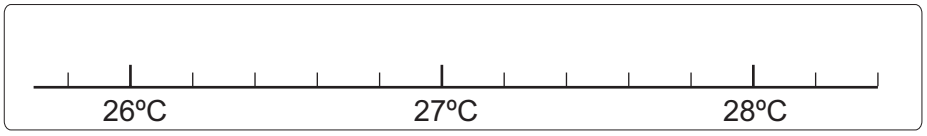
..... litres

(ii) 2·5 litres of water is emptied from the container shown above.

Clearly mark on the diagram below the height of the water left in the container. [1]



(b) A temperature is measured as 27·2°C.
Draw a pointer (↓) on the scale shown below to indicate this temperature. [1]



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4. The total number of points gained by a team playing in a hockey league is calculated as shown below.

$$\text{Points gained} = \text{games won} \times 3 + \text{games drawn} \times 1$$

(a) Oldborough Town have played 25 games.
They have won 13 games, lost 5 and have drawn the other games.
How many points have they gained? [3]

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(b) Aberfar Rovers play in the same hockey league.
They have gained 30 points and have drawn 9 of their games.
How many games did they win? [2]

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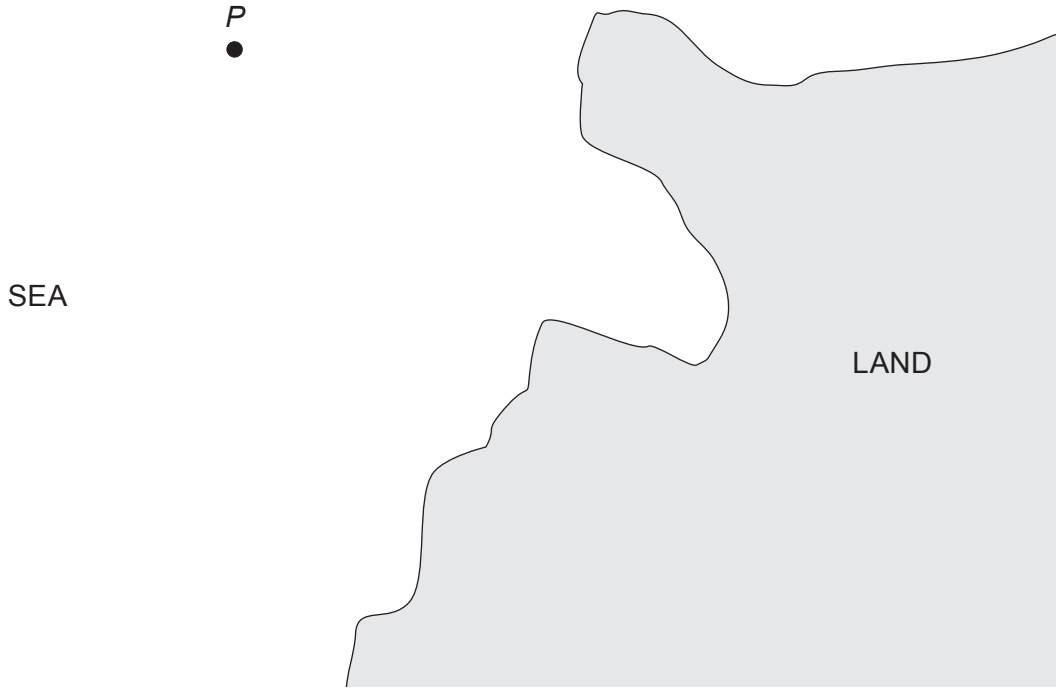
5. A boat was out at sea at point *P*, as shown in the diagram below.

It sailed **in a straight line** for exactly 6 km before reaching the land.

Using a scale of **1 cm to represent 1 km**, mark with a cross (**X**), all the possible points on the shore where the boat could have landed. [3]



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

Garry is arranging a birthday party for his grandmother at a local hotel.
Sixty people will be there, and half of them will be young children.

The hotel will provide food at a charge of £12 per portion.

To decide how many portions to order, Garry allows one portion of food for each adult and half a portion for each child.
To be sure there is enough food available; he then rounds up the total number of portions required to the nearest 10.

How many portions did Garry order and what was the total cost?
You must show all your working. [7]

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7. A shop sells pots of yoghurt at 74p each.
Anwen wants to buy as many pots as she can with a £5 note.

(a) How many pots of yoghurt can Anwen buy for £5? [2]

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(b) Is it possible for the shopkeeper to give Anwen her change using a single coin? You must explain your answer. [2]

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8. A school wanted to buy a number of identical wooden noticeboards.
These noticeboards normally cost £8 each.

The school found two firms, *'Boards for All'* and *'Get Noticed'*, that sell these noticeboards.
Both firms had a special offer on the normal price.

BOARDS FOR ALL

Buy 4 for the price of 3.

GET NOTICED

First 10 at normal price.
All extra boards at $\frac{1}{2}$ price.

(a) The school bought 17 noticeboards from *'Boards for All'*.
How much did they pay in total? [3]

(b) Depending on the number of noticeboards that are required, show that it can be cheaper to buy them from *'Get Noticed'*. [3]

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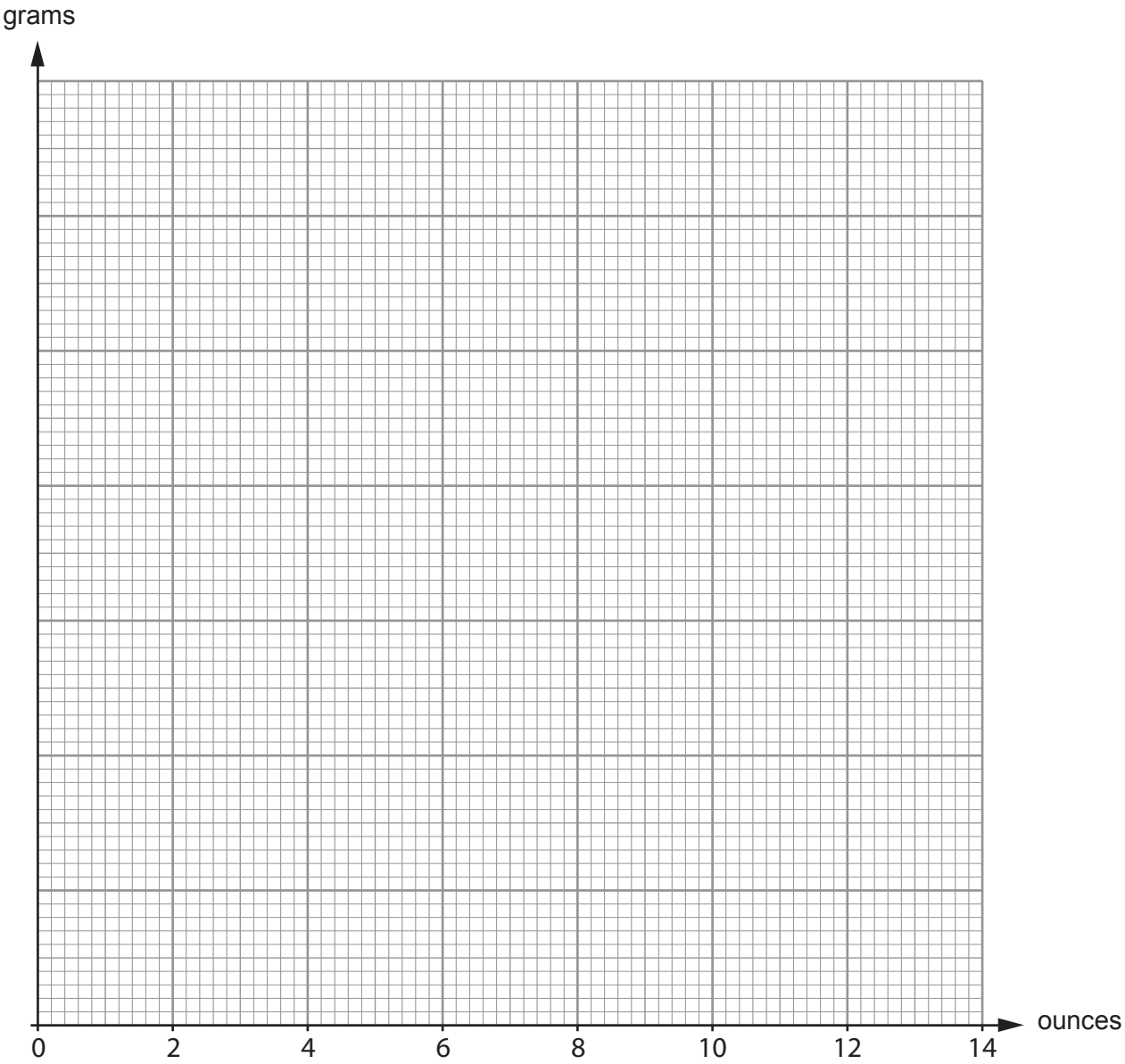
9. The label on a small jar of jam shows the following information.

Approximate weight 340g (12oz)

(a) Use this information to draw a conversion graph between ounces (oz) and grams (g). [3]



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(b) 16 ounces (oz) = 1 pound (lb).

Using your graph, or otherwise, estimate the weight, **in kilograms**, of an object whose weight is 50lb.

You must show your working. [4]

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Turn over.

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10. Azira is planning to paint the inside walls of her community centre.
A shop is selling the paint she wants in two different-sized tins.

- One tin of size A will cover an area of 24 m^2.
- One tin of size B will cover an area of 45 m^2.

Azira knows that 9 tins of size A will be just enough to paint all of the walls.

What is the least number of tins of size B that would be enough to paint all of the walls? [3]

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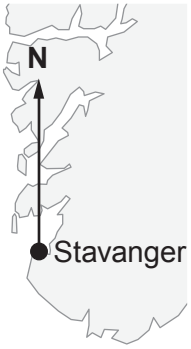
11. The map shows a scale diagram of part of the North Sea coastline.

A ship is on a bearing of 035° from Aberdeen in Scotland and on a bearing of 290° from Stavanger in Norway.

By drawing suitable lines on the diagram below, find and mark the position of the ship. [3]



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12. 800 students from the UK and 300 students from Russia apply to attend a Summer Camp. 20% of the UK students and 30% of the Russian students are chosen to attend the camp.

What percentage of all the students who are chosen to attend the camp are from Russia? [5]

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13. A company's logo is displayed on the outside of its factory wall.
The shape of the logo is made using a rectangle, a right-angled triangle and a semicircle, as shown in the diagram below.
Some of the lengths are shown on the diagram.

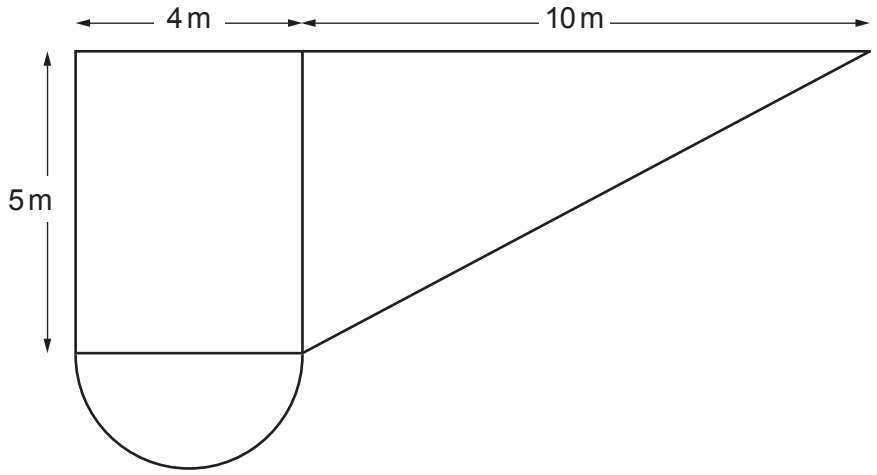

Diagram not drawn to scale

Calculate the total area of this logo. Give your answer correct to 1 decimal place. [5]

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14. A flower shop takes delivery of a large tray of daffodils.

A label on the side of the tray states

- Total weight of daffodils: 8 kg correct to the nearest kilogram,
- Height of each daffodil: 20 cm correct to the nearest 10 cm.

Complete the table below to show the least and greatest total weight of the daffodils delivered, and the least and greatest height of the daffodils delivered. [4]

	Least Value	Greatest Value
Total weight of daffodils	..... kg	..... kg
Height of daffodils	..... cm	..... cm

END OF PAPER

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