

Surname	Centre Number	Candidate Number
Other Names		0



GCSE

4351/01

MATHEMATICS (UNITISED SCHEME)

UNIT 1: Mathematics In Everyday Life

FOUNDATION TIER

A.M. WEDNESDAY, 6 November 2013

1 hour 15 minutes

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.

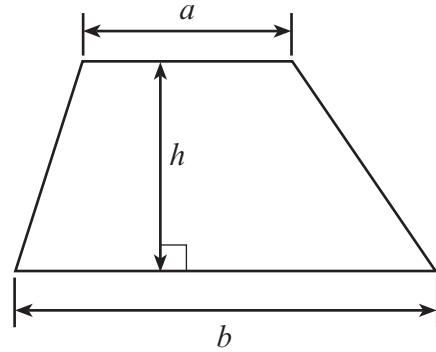
You are reminded that assessment will take into account the quality of written communication (including mathematical communication) used in your answer to question **9**.

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

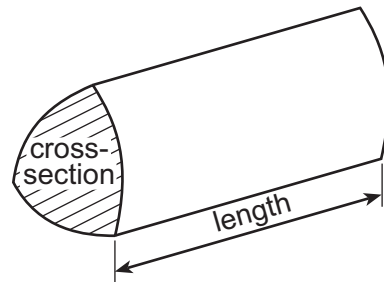
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Formula List

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



Volume of prism = area of cross-section \times length

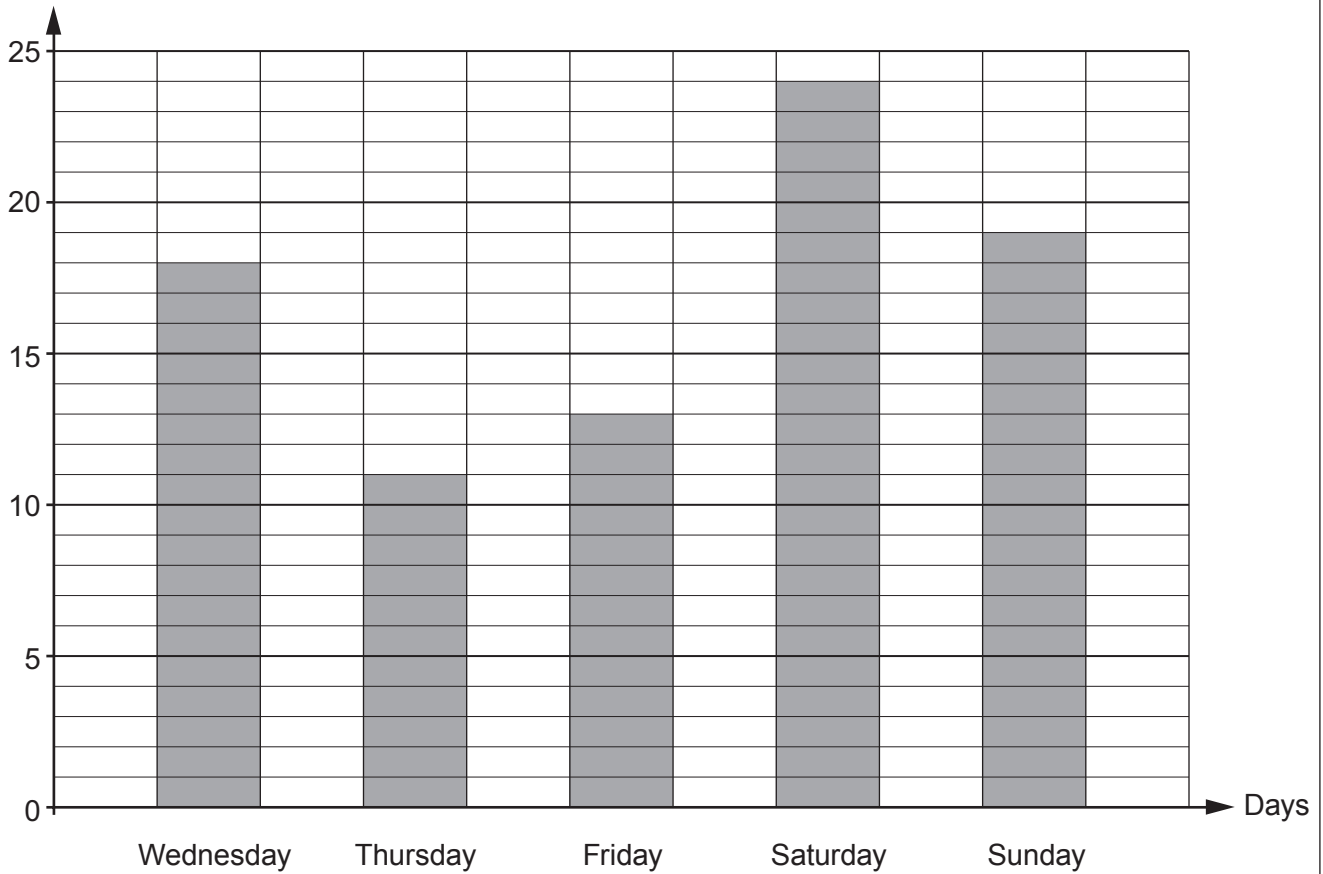


1. (a) The population of a country was officially recorded as,
'three million, twenty four thousand, seven hundred and fifty six'.
Write this number in figures. [1]
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- (b) The number of people recorded as being seventy years old or over was 62 856.
Write this number correct to the nearest 1000. [1]
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- (c) Of the 1224 people recorded as being one hundred years old or over, exactly one-third were male.
- (i) How many of these 1224 people were male? [1]
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- (ii) What fraction of these 1224 people were female? [1]
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2. Circle the quantity that is most appropriate to estimate each of the following. [4]
- | | | | | |
|-----------------------------|--------------------|------------------|---------------------|---------------------|
| Weight of an orange | 200 litres | 200 grams | 200 metres | 200 seconds |
| Height of the Eiffel Tower | 324 mm | 324 cm | 324 m | 324 km |
| Floor area of a school hall | 600 m ² | 6 m ² | 0.6 m ² | 600 cm ² |
| Volume of a swimming pool | 2000 ml | 2000 m | 2000 m ² | 2000 m ³ |

3. A 'Food Fair' was held in a town each day from Wednesday to Sunday.

The diagram shows the number of orders a cheese-maker took on each of these days.

Number of orders



- (a) On which day did she take the fewest orders?

[1]

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- (b) What was the total number of orders taken over the weekend (Saturday and Sunday)?

[1]

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(c) Every order she took on Friday was worth £12.50.
What was the total value of the orders taken on Friday?

[2]

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(d) She took more money on the Thursday than on the Wednesday.
Explain how this could have happened.

[1]

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4. The following formula was used by the organisers of a festival to calculate the parking fee for minibuses.

$$\text{parking fee} = \text{number of passengers} \times 30\text{p} + \text{£}5$$

- (a) How much was the parking fee for a minibus carrying 12 passengers? [2]

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- (b) The parking fee for another minibus was £7.40.
How many passengers were on this minibus? [2]

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5. A television channel needs to fit the following four programmes between its three 'News' slots.

Programme	Time needed
<i>Your Songs</i>	30 minutes
<i>Nature Trails</i>	25 minutes
<i>Theatre Review</i>	20 minutes
<i>The Comedy Slot</i>	20 minutes

The title of each news bulletin tells you how long it lasts.

Complete the following timetable to show the order in which the four programmes can be broadcast. [5]

TIME

PROGRAMME

11:00 a.m.

The 10 minute News Report.

11:10 a.m.

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11:55 a.m.

Your 15 minute News Update.

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1:00 p.m.

The 10 minute News Report.

6. Matthew wants to buy each of his six friends a box of chocolates.

Two shops are selling the identical chocolate boxes that Matthew wishes to buy. Both shops have a special offer for customers buying these chocolates.

The diagram consists of two shapes representing shops. On the left is a pentagon labeled 'SHOP A'. Inside the pentagon, the text reads: 'SHOP A', 'Yummy Chocs', '£5 per box', and 'Buy 3 for the price of 2'. On the right is a circle labeled 'SHOP B'. Inside the circle, the text reads: 'SHOP B', 'Yummy Chocs', '£4 per box', and '20% off when you buy 5 or more'.

Calculate the difference in the amount Matthew would have to pay when buying six boxes of Yummy Chocs at these shops. [4]

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7. A vertical radio mast stands on horizontal ground. It is 45 metres tall.

A steel cable is attached to the ground at a distance of 60 metres from the base of the mast. The other end of the steel cable is attached to the top of the radio mast. There is no slack in the cable, so that it is straight and not curved.

- (a) Make a scale drawing of the radio mast, the ground and the cable.
Use a scale of **1 cm to represent 10 metres**.

[3]

- (b) Using your drawing, find the actual length of the steel cable.

[2]

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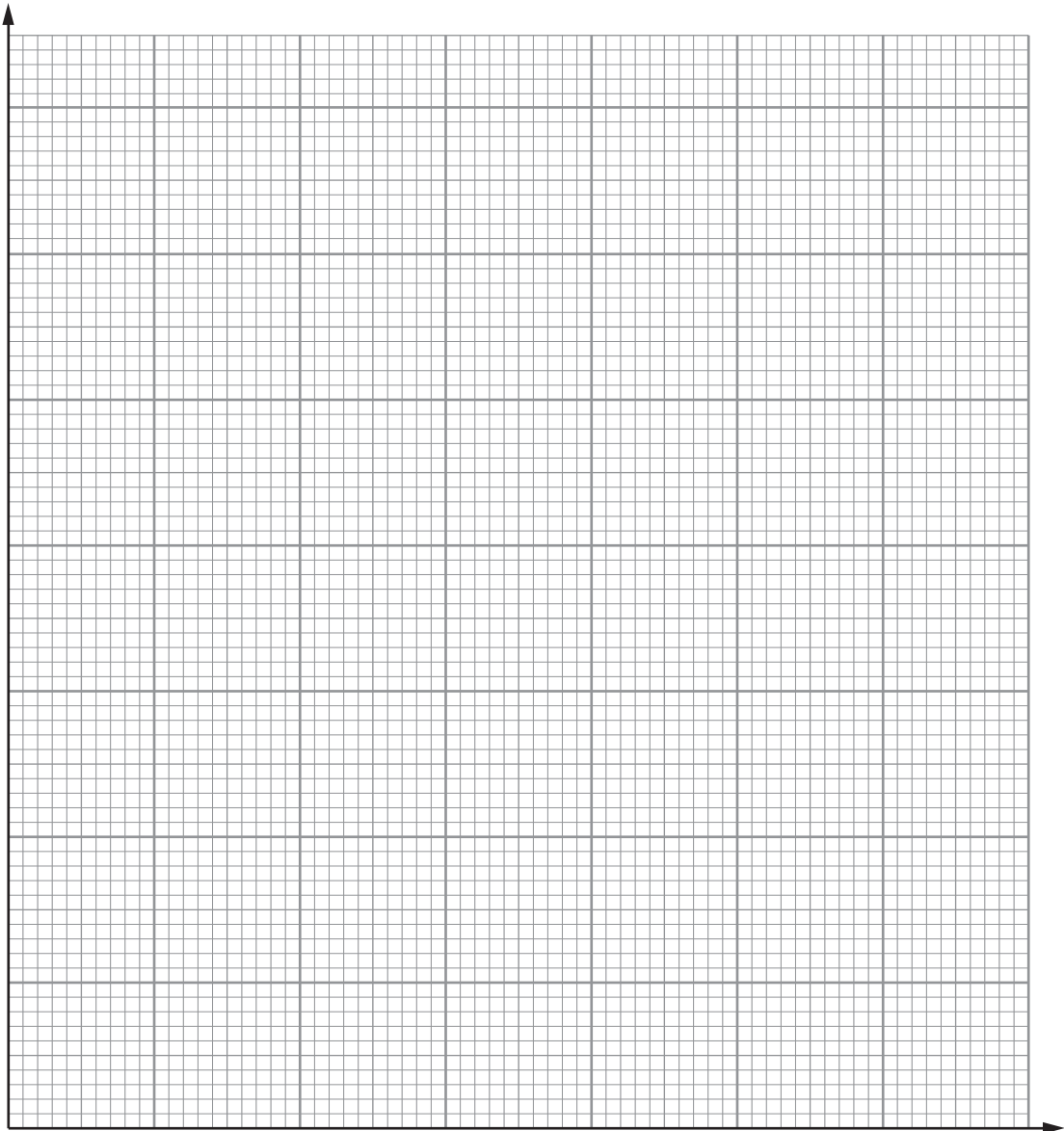
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8. A liquid is left to cool.
Its temperature is recorded every two minutes for a period of 12 minutes.
The results are summarised in the table below.

Time (minutes)	0	2	4	6	8	10	12
Temperature ($^{\circ}\text{C}$)	70	55	42	32	25	20	17

- (a) On the graph paper below, draw a curve to represent the information given in the table.

[4]

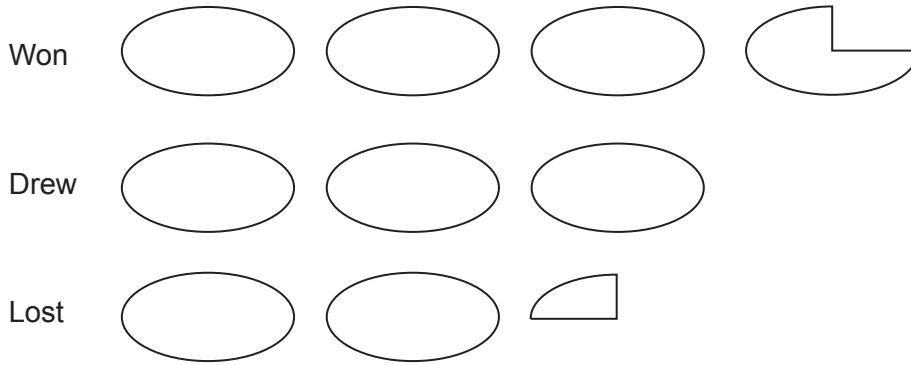


- (b) Use your graph to estimate the temperature of the liquid after three minutes.

[1]

10. A rugby team manager has illustrated how many matches the team won, drew and lost using a pictogram.

The symbol  represents 4 matches.



She decided that the above information would be better illustrated using a pie chart.

Draw a pie chart to show the same information.

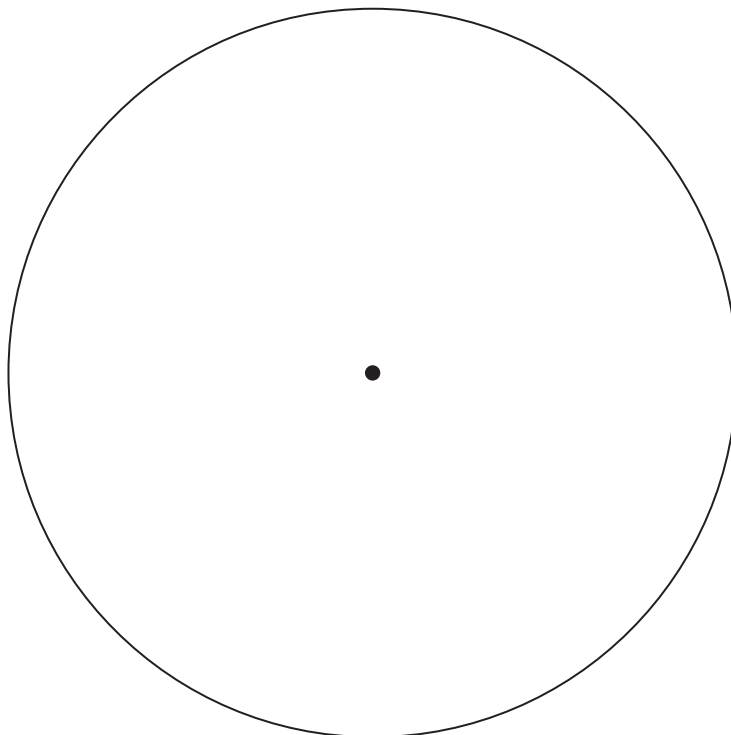
[4]

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11. A survey was carried out in Newcastle in the north of England.

The following two questions were asked.

Q1. *Do you think it is right to play all of England's international matches down in London, which makes it difficult for people from the north of England to attend?*

YES NO

Q2. *How often have you visited the new Wembley stadium in London?*

1-5 times 6-10 times 10 or more times

(a) Write down **one** criticism of the first question.

[1]

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(b) Give **two** reasons why the second question is **not** suitable.

[2]

Reason 1

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Reason 2

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12. The bearing of a ship in the Irish Sea is measured from two coastal locations. The ship is on a bearing of 040° from Moelfre and on a bearing of 335° from Hoylake.

(a) By drawing suitable lines on the diagram below, mark the position of the ship. [3]



(b) Write down the bearing of the ship from Douglas. [1]

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13. An empty cylindrical tank has a base radius of three metres and is four metres high.

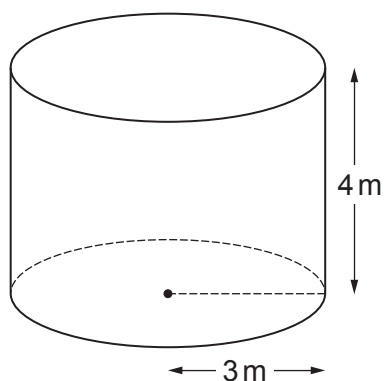


Diagram not drawn to scale

- (a) Calculate the volume of this tank.

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- (b) Water is pumped into the tank at a constant rate of 1800 litres per minute. The pump stops automatically immediately before the tank overflows. For how many whole minutes is water pumped into the tank?

[4]

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14. Each year, Enrico's car loses 12% of its value at the start of that year.
The car was worth £17 000 when it was new.
What was its value after 3 years?
Give your answer correct to the nearest £100.

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