

Surname	Centre Number	Candidate Number
Other Names		0



GCSE

4353/01

MATHEMATICS (UNITISED SCHEME)
UNIT 3: Calculator-Allowed Mathematics
FOUNDATION TIER

A.M. MONDAY, 12 November 2012

1 $\frac{1}{2}$ hours

ADDITIONAL MATERIALS

A calculator will be required for this paper.

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.

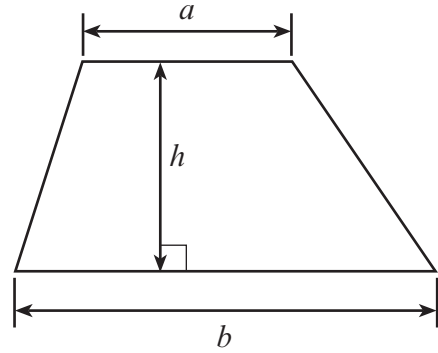
You are reminded that assessment will take into account the quality of written communication (including mathematical communication) used in your answer to question **10(a)**.

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

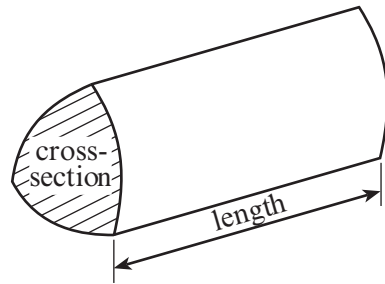
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Formula List

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



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



1. (a) (i) Simon does some shopping.

Complete his bill.

Item	Cost
2.5 kg of meat @ £8.66 per kg	£
700 g of cheese @ 73p per 100 g	£
6 bottles of squash @ £1.64 per bottle	£
Total	£

[4]

- (ii) Simon gets 5% discount.
How much is this discount and how much does Simon have to pay?

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[3]

- (b) Write 256.743

- (i) correct to 1 decimal place,

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[1]

- (ii) correct to the nearest whole number,

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[1]


- (iii) correct to the nearest 100.

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[1]

2. In a survey, people were asked to state their favourite season. The results are shown below.

Season	Spring	Summer	Autumn	Winter
Number of people	400	550	225	375

- (a) Draw a pictogram to represent the above information, using  to represent 100 people.

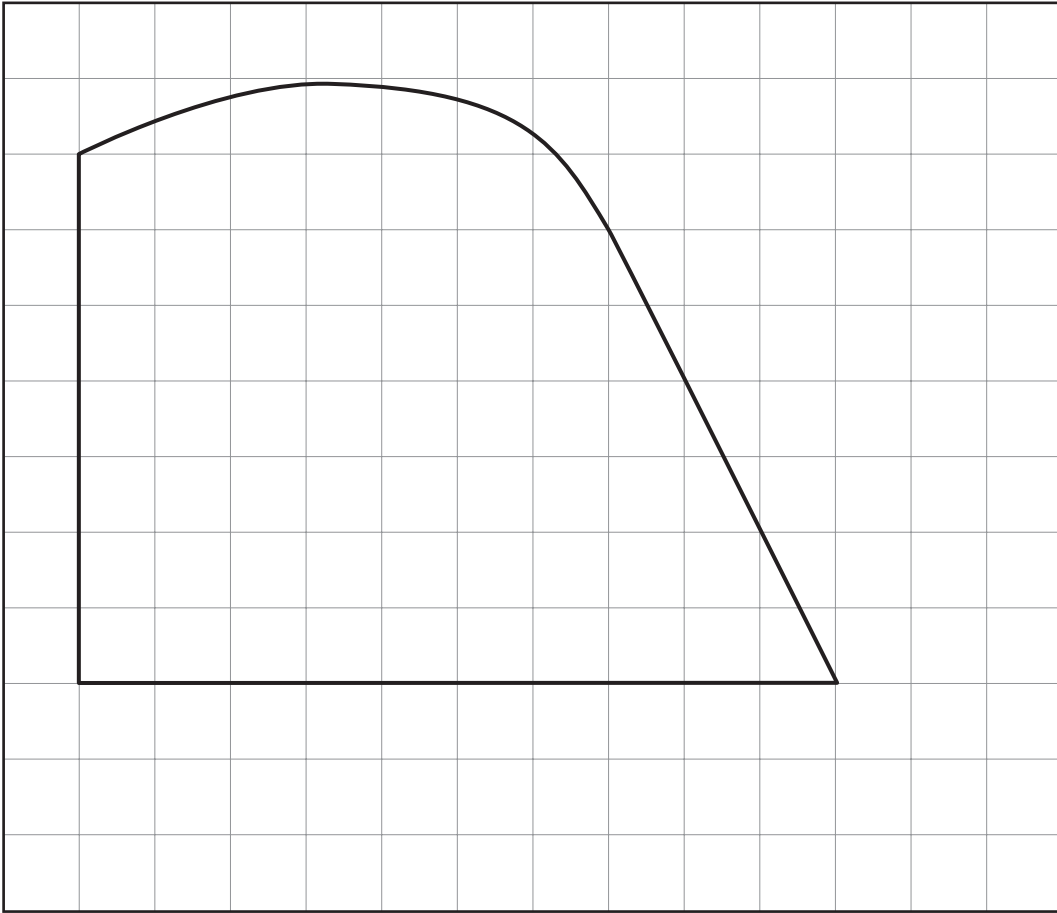
Spring	
Summer	
Autumn	
Winter	

- (b) Write down the mode.

[4]

[1]

3.



The above shape, drawn on a square grid, represents a field.
Estimate the area of the field if each square represents an area of 10 m^2 .

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Area of the field = m^2

[3]

4. (a) Complete an accurate drawing of the triangle XYZ , in which $XY = 12\text{ cm}$, $XZ = 9.6\text{ cm}$ and $\widehat{ZXY} = 63^\circ$.

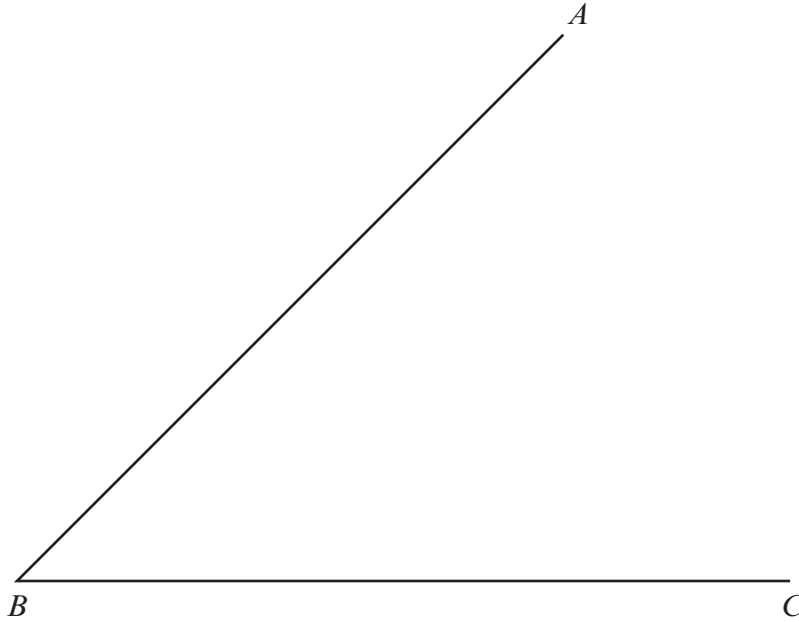
The line XY has been drawn for you.

[3]



- (b) Using a ruler and a pair of compasses, bisect \widehat{ABC} .

[2]



- (c) Using a ruler and a pair of compasses, construct an angle of 90° at the point A .

[3]



5. The gas meter readings at the beginning and at the end of a 90-day period were:

Reading at the end of the period

4	8	5	7	6
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Reading at the beginning of the period

4	8	2	6	2
---	---	---	---	---

The cost of the gas is 24p per unit.
There is also a charge of 35p per day.

Complete the following table to find the total cost.

Reading at the end of the period	48576
Reading at the beginning of the period	48262
Number of units used	
Cost of the units in £	£
Charge: 35p per day for 90 days	£
Total cost	£

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[5]

6. The diagram shows a 9 cm by 6 cm rectangle.

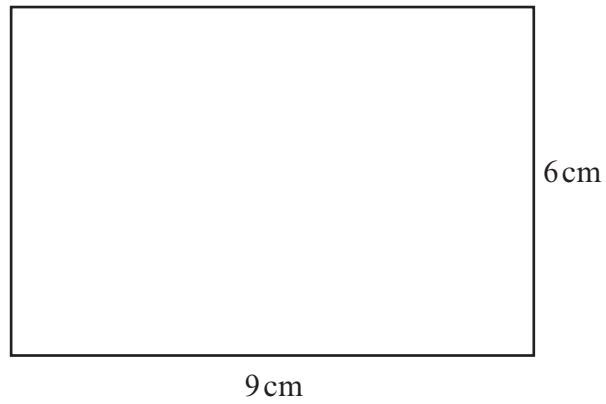


Diagram not drawn to scale

- (a) Calculate the area of the rectangle, giving the units of your answer.

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[3]

- (b) Calculate the perimeter of the rectangle.

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[1]

7. (a) Find the value of $4A + 3B$ when $A = 3$ and $B = 5$.

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..... [2]

- (b) Evaluate $3x + 4y - 6z$ when $x = 3$, $y = 2$ and $z = \frac{1}{2}$.

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..... [2]

8. Find the value of each of the following, giving each answer correct to three significant figures.

(a) $\frac{82.13}{123.7 - 53.8}$

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(b) $3 \cdot 4^3 + \sqrt{(0.225 + 0.459)}$

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9. Dennis walked the 1 km from his home to the bus stop.
 This took him 20 minutes.
 Dennis had to wait at the bus stop for 10 minutes before the bus arrived.
 The bus travelled at a constant speed for half an hour until it reached Dennis' school, a distance of 10 km from the bus stop.

(a) On the graph paper below, draw a graph of Dennis' journey from home to school.

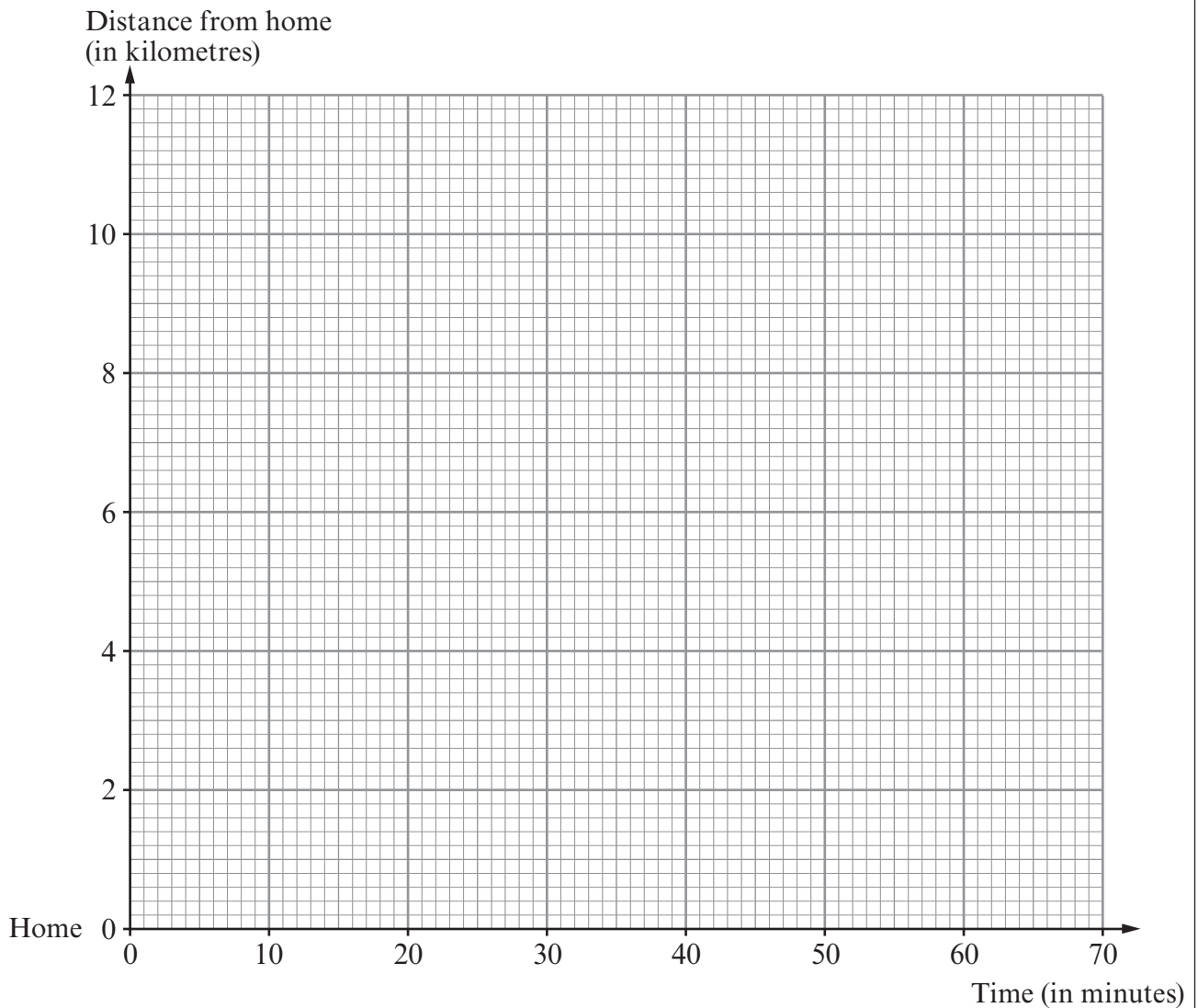
[4]

(b) What was the speed of the bus in km/h?

[2]

(c) After 50 minutes, how far was Dennis **from the school**?

[1]



(c) After how many days will all three types of tablets first run out on the **same day**?

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[2]

11. (a) The mean of 5 numbers in a list is 24.
When two extra numbers are added to the list, the mean increases by four.
What does this tell you about the values of the two extra numbers?

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[3]

(b) Four numbers are listed in ascending order.
The mode of the four numbers is 3.
No number in the list is greater than 3.
The range of the four numbers is 5.
The median of the four numbers is 2.
Find the four numbers.

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[3]

12. (a) Use a ruler and a pair of compasses only to construct an accurate drawing of the rhombus described below.

Rhombus

- All sides are of length 6 cm
- The acute angles are 60°

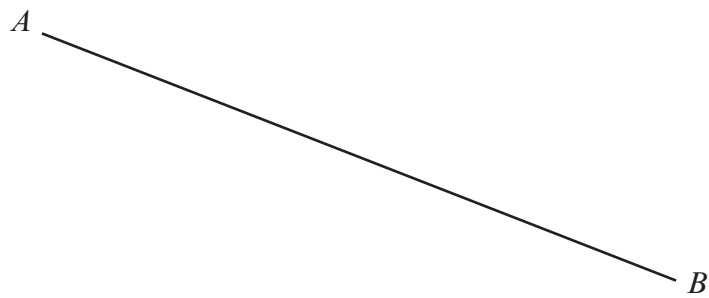
You must show all your construction lines.

[4]

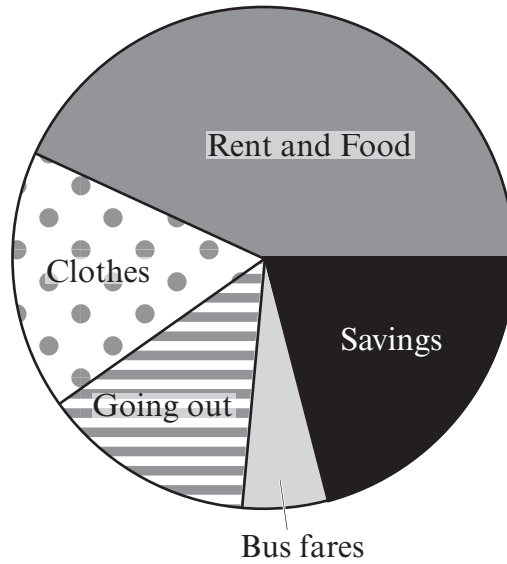
(b) Shade the region that satisfies both of the following conditions.

- (i) The points are less than 6.5 cm from A .
- (ii) The points are nearer to B than to A .

[3]

Examiner
only

13. The pie chart shows what Maria plans to do with her first month's salary of £1620.



(a) Calculate the amount Maria plans to spend on clothes from her first month's salary.

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[3]

(b) How much more does Maria plan to spend, in the first month, on clothes than on bus fares?

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[2]

- (c) Mark finds a job with a lower first month's salary than Maria's first month's salary. He draws a pie chart that shows what he plans to do with his first month's salary.

The angle for 'going out' on Mark's pie chart is the same as the angle for 'going out' on Maria's pie chart.

Looking at Mark's pie chart, Maria states

“We will both have the same amount of money to spend on going out.”

Explain, with reasons, whether Maria is correct or not.

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[2]