

Surname	Centre Number	Candidate Number
Other Names		0



GCSE

4353/01

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

A.M. MONDAY, 17 June 2013

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

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. 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 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**.

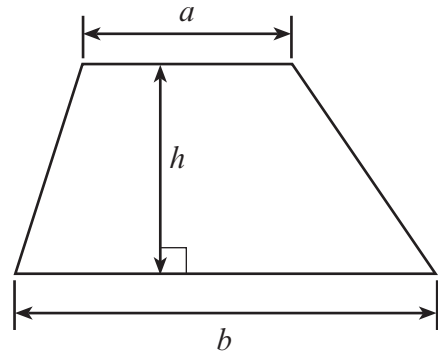
For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1	11	
2	7	
3	3	
4	4	
5	6	
6	4	
7	6	
8	5	
9	4	
10	6	
11	5	
12	4	
13	4	
14	3	
15	8	
TOTAL MARK		



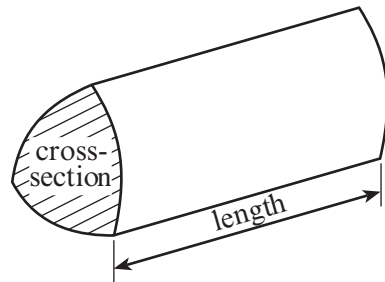
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Formula List

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



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



1. (a) (i) Mike buys the following on a superstore's online service.
Complete his bill.

Item	Cost
6 kg potatoes @ 76p per kg	£
3 packets of cereal @ £3.36 per packet	£
4 cartons of milk @ £1.89 each	£
Total	£

[4]

- (ii) The superstore offers a 5% discount on this service.
How much discount does Mike get?

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.....

[2]

- (b) Write 9627 correct to the nearest 10.

.....

[1]

- (c) Write 8.47

- (i) correct to 1 decimal place,

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[1]

- (ii) correct to the nearest whole number.

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[1]

- (d) Use the formula $H = 3A + 4B$ to find the value of H when $A = 6$ and $B = 8$.

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[2]



2. 30 pupils were asked to think of their favourite football team and to write down which League their team belonged to: Premier (P), Championship (C) or Other league (O). Pupils who did not have a favourite football team wrote down 'None' (N). Their results are shown below.

P	C	O	P	N	C	O	P	C	C
C	P	O	N	C	P	N	C	O	O
P	N	C	P	O	C	C	O	P	C

- (a) Using the centimetre squared grid on the opposite page, draw a bar chart for the data given.

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For use with question 2

[6]

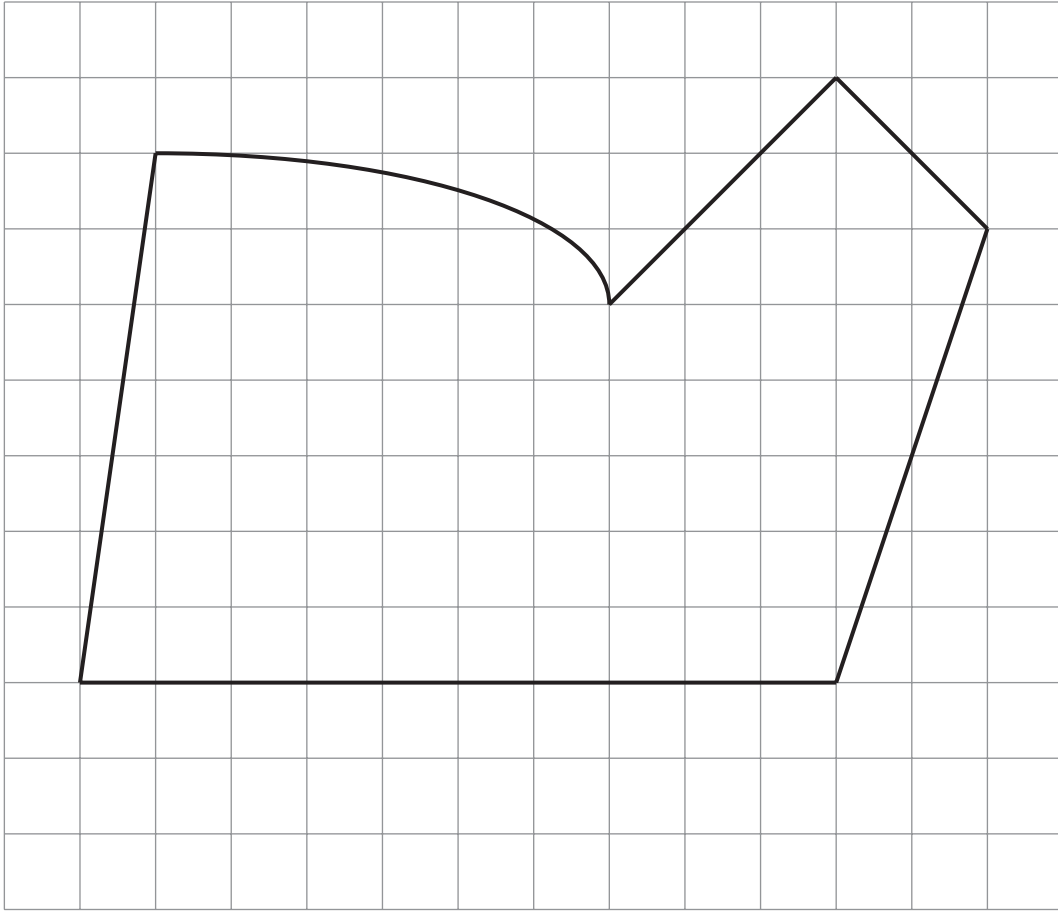
(b) Write down the mode.

..... [1]

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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 5 m^2 .

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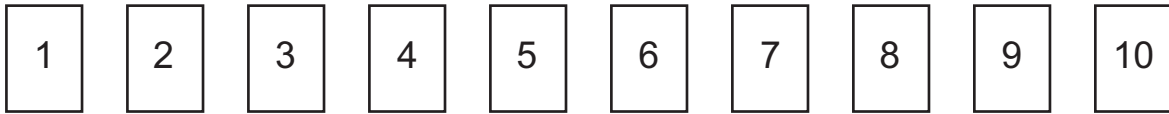
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Area of the field = m^2

[3]



4. Selvy, Megan, David and Roberta are playing with ten cards, numbered 1 to 10.



Each player gets two cards.
Selvy's cards add up to 4.
Megan's cards add up to 8.
David's cards add up to 11.
Roberta's cards add up to 15.
Work out which cards each person has.

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Selvy's cards are and

Megan's cards are and

David's cards are and

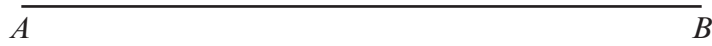
Roberta's cards are and

[4]



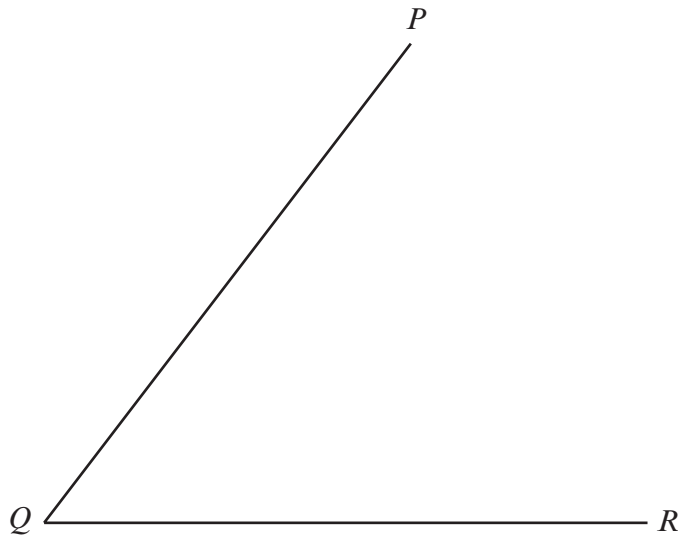
5. (a) Complete an accurate drawing of the quadrilateral $ABCD$, in which $AB = 9$ cm, $\widehat{BAD} = 67^\circ$, $AD = 7.5$ cm, $\widehat{ABC} = 106^\circ$ and $BC = 10$ cm. The side AB has been drawn for you.

[4]



- (b) Using a ruler and a pair of compasses, construct the bisector of \widehat{PQR} .

[2]



6. Find the value of

(a) $\frac{43.73 \times 26.23}{523.9 - 26.74}$, giving your answer correct to three significant figures,

..... [2]

(b) $\sqrt{(43^3 \div 52)}$, giving your answer correct to two decimal places.

..... [2]

7. The populations of some villages were:

419 510 122 162 74 19 206 272

(a) Find the range of these populations.

..... [1]

(b) Find the mean of these populations.

..... [3]

(c) Find the median of these populations.

..... [2]



8. The travel graph below represents part of Nigel's journey.

(a) How far from Bangor was Nigel when he started out?

..... [1]

(b) How far did he travel in the first hour?

..... [1]

(c) For how many minutes did he stop on his journey?

..... [1]

(d) After his stop, he continued his journey at a steady speed. By 14:18 he had reached a point 48 miles from Bangor. Draw the graph for this part of his journey.

[2]

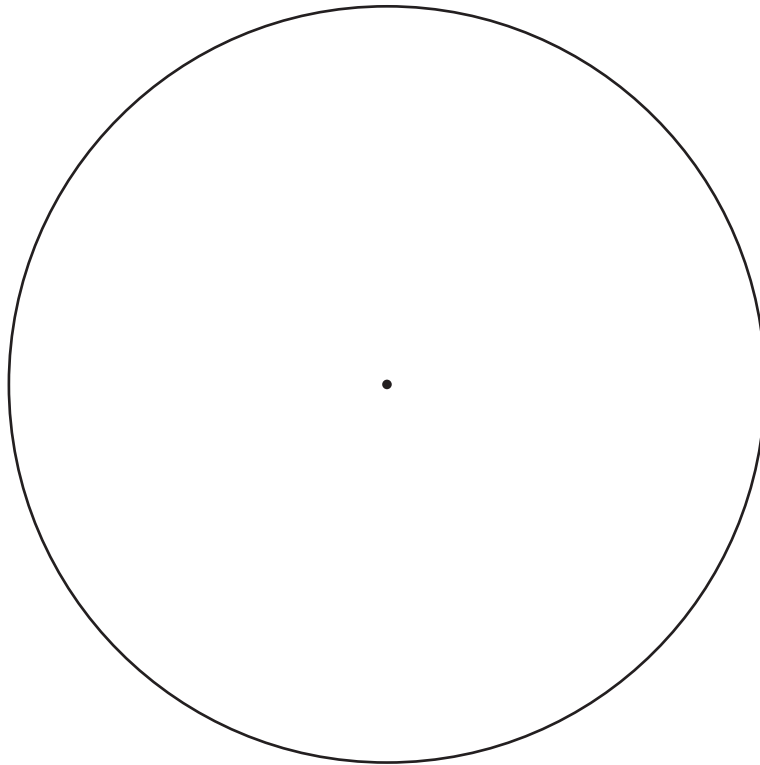
Distance from Bangor
in miles



9. The table shows the number of ice creams of each of four flavours bought from a van one Saturday.

Ice cream flavour	Vanilla	Chocolate	Strawberry	Raspberry
Number bought	110	70	38	22

Draw a pie chart to illustrate this data. You should show how you calculate the angles of your pie chart.



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[4]



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

Melanie earns £1200 per month.

Of this, she spends $\frac{1}{3}$ on rent and $\frac{1}{4}$ on food.

What fraction of her earnings does she have left?

You must show all your working and write your fraction in its simplest form.

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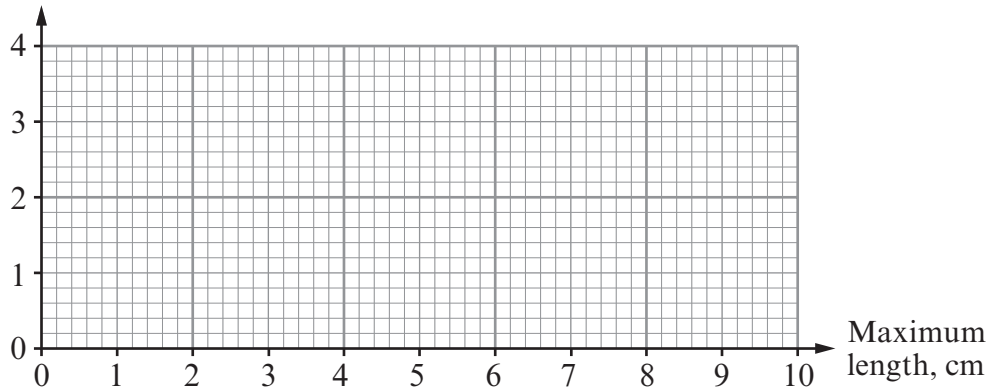
11. The maximum lengths and maximum widths of a number of leaves from one tree were measured.

Maximum length, cm	6.8	7.4	3.2	8.2	9.4	7.6	4.2	2.8	8.4
Maximum width, cm	2.4	2.6	1.2	3.0	3.4	2.8	1.4	1.0	3.2

(a) Draw a scatter diagram to display these measurements.

[2]

Maximum width, cm



(b) Draw, by eye, a line of best fit on your scatter diagram.

[1]

(c) State the type of correlation shown in your scatter diagram.

..... [1]

(d) Another leaf from the same tree has a maximum length of 5 cm.
Use your line of best fit to estimate the maximum width of this leaf in cm.

..... cm

[1]



12. Daisy buys a torch and a battery.
The torch costs eight times as much as the battery.
Daisy pays with a £20 note and gets £15.86 change.
How much does the battery cost?

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[4]

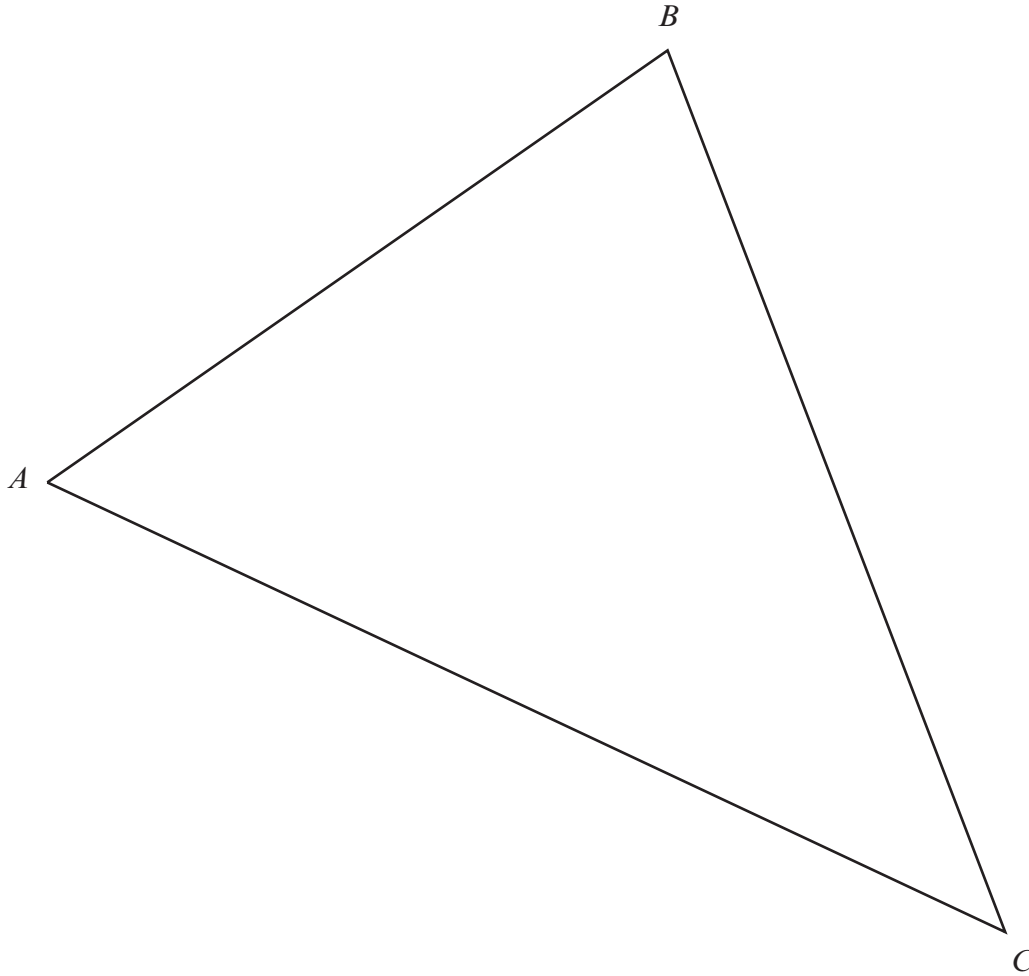


15. (a) A region is found within triangle ABC using the following criteria.
Points in the region are:

- nearer to B than to C ,
- greater than 4 cm from A .

Shade this region in the triangle ABC .

[3]



(b) Calculate the area of the quadrilateral $ABCD$.

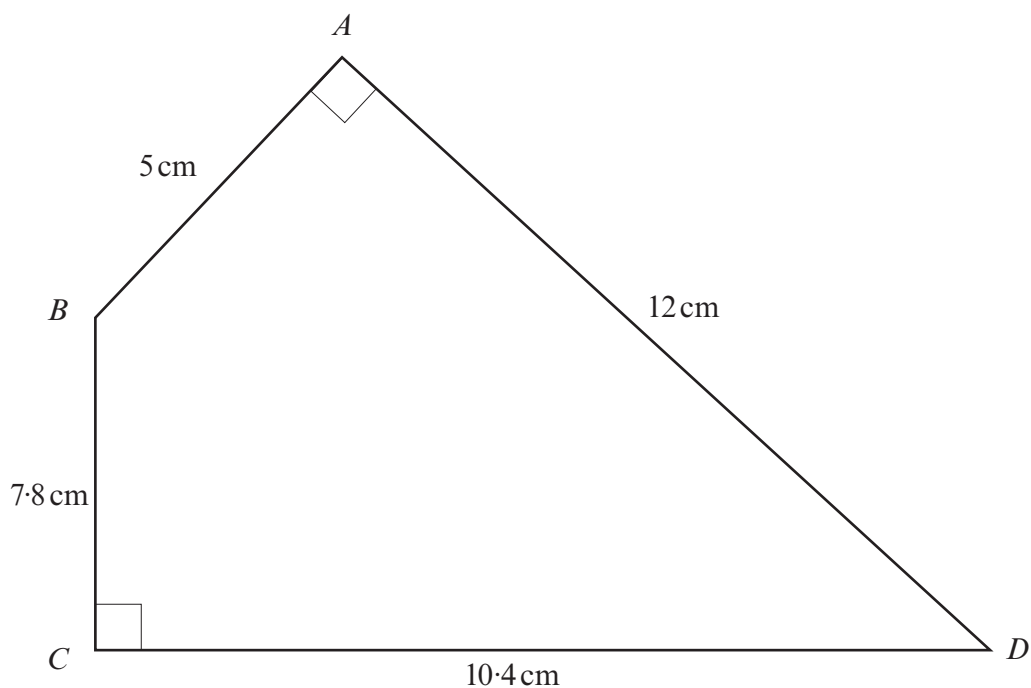


Diagram not drawn to scale

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