

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, 11 January 2012

1 $\frac{1}{4}$ hours

ADDITIONAL MATERIALS

A calculator will be required for this paper.

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.

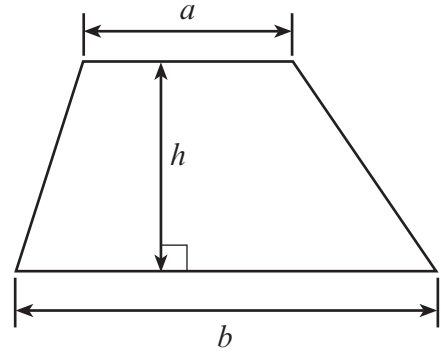
You are reminded that assessment will take into account the quality of written communication (including mathematical communication) used in your answer to question 5.

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

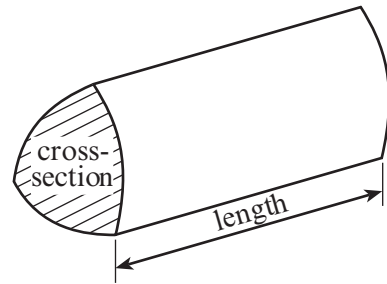


Formula List

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



$$\text{Volume of prism} = \text{area of cross-section} \times \text{length}$$



1. (a) Hilary visits a garden centre.
She buys a wheelbarrow, 5 large pots and 12 bags of compost.

Complete the following table to show her bill for these items.

ITEM	COST
1 wheelbarrow	£76.99
5 large pots @ £6.35 each	
12 bags of compost @ £3 per bag	
TOTAL	

[3]

- (b) She earns 1 point on her store card for every £10 she spends.

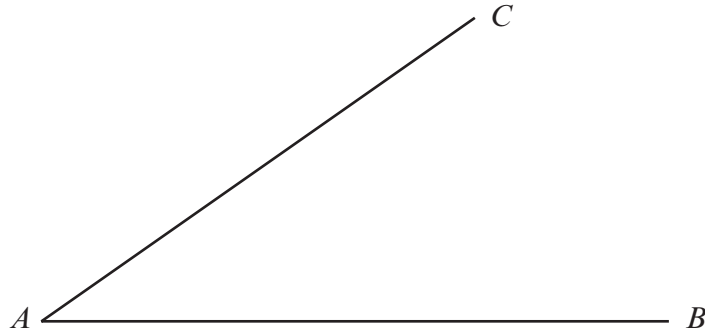
How many points will be added to Hilary's store card after paying the above bill?

..... [1]



2. The scale drawing below shows two straight paths AB and AC meeting at point A .

Scale: 1 cm represents 20 m



(a) Measure and write down the size of the angle between the two paths.

.....^o

[1]

(b) Measure the length of the line AB and then calculate the actual length of the path AB .

Length of line AB

.....

.....

Length of path AB

[3]

(c) On the scale drawing above, draw a line from the end of the path at B to the mid-point of the path AC .

[1]



3. Some carrots were collected from a vegetable garden. Their lengths (to the nearest mm) are recorded below.

83 112 128 108 78 107 105 117 91 119 144
 92 107 106 123 112 106 122 72 135 75 103

Using **equal** class intervals, complete the following table.

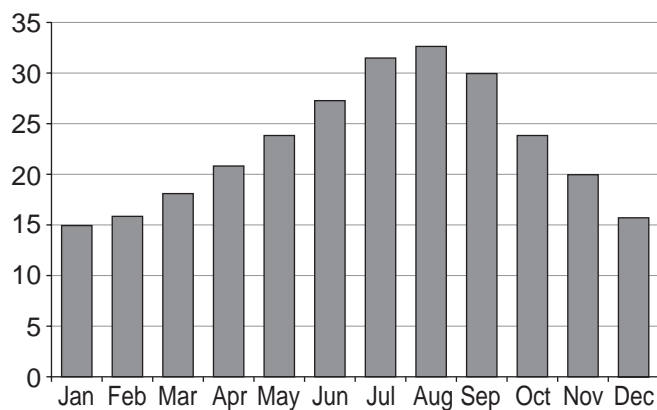
Length (mm)	70 to 89	90 to 109		130 to 149
Tally	////			
Frequency	4			

[4]

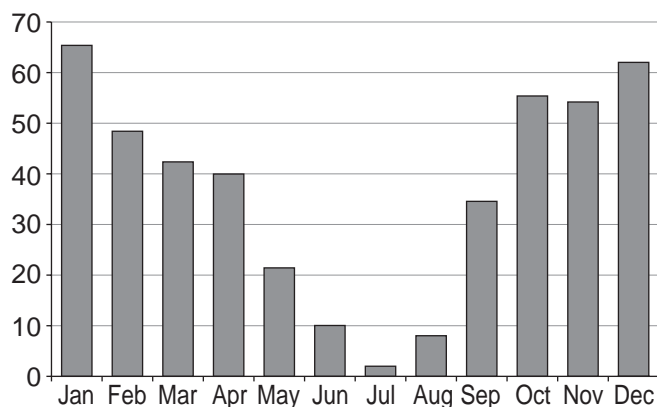


4. (a) A holiday magazine displays the following two graphs.

Average maximum daily temperature ($^{\circ}\text{C}$) in Tunisia



Average monthly rainfall (mm) in Tunisia



- (i) Which month has the highest average monthly rainfall?

..... [1]

- (ii) Which month would best suit a person going on holiday to Tunisia if they did not want the average maximum daily temperature to be over 25°C but hoped for as little rain as possible?

.....

[1]



- (b) A group of friends went on holiday to Tunisia and hired a car to travel around the country.

The cost of hiring the car (in Tunisian dinars) is given by the formula

$$\text{Hire cost} = 50 \text{ dinars} \times \text{Number of days} + \text{Fixed charge.}$$

How much did they pay in dinars for hiring a car for 5 days if the fixed charge was 85 dinars?

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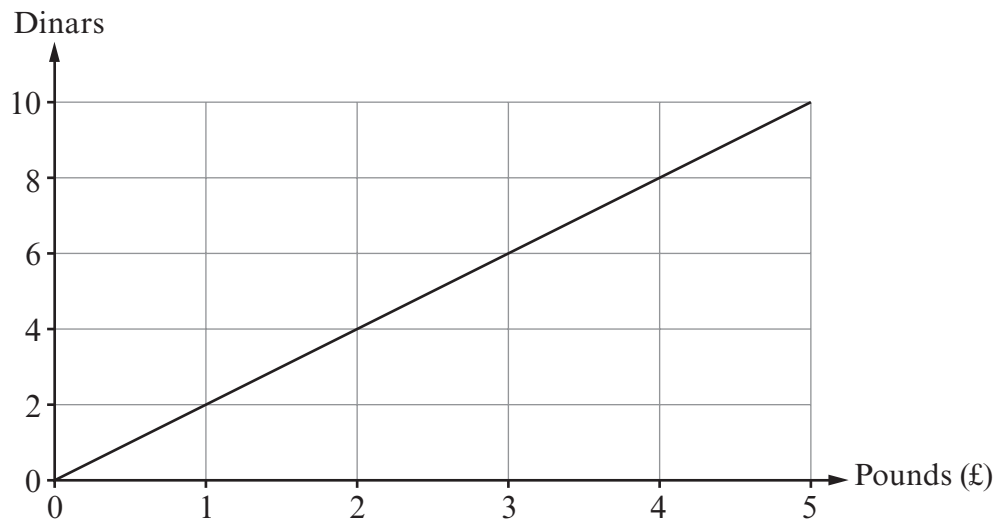
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[2]

- (c) One of the group has made a simple conversion graph, shown below, to help them convert pounds (£) into Tunisian dinars.

The group paid a total of 60 dinars for a meal.

Using the conversion graph, calculate how much this would be in pounds (£)?



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[2]



6. (a) Using the numbers

2**3****10****15**

once only in each case, fill in the boxes so that the equations are correct.

(i) + = -

[1]

(ii) × = ×

[1]

(iii) ÷ = ÷

[1]

(b) Use **two** of the symbols

+

-

×

÷

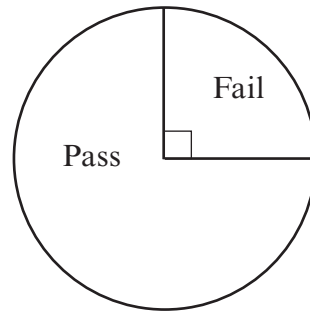
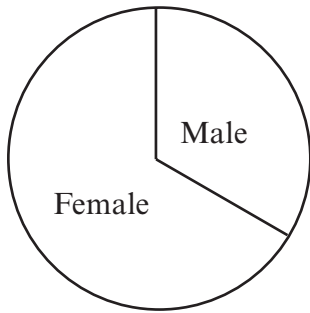
to make the following equation correct.

=

[1]



7. (a) The pie charts below give information about a group of students and their results in an end of year examination.



- (i) What does the first pie chart tell you about the group?

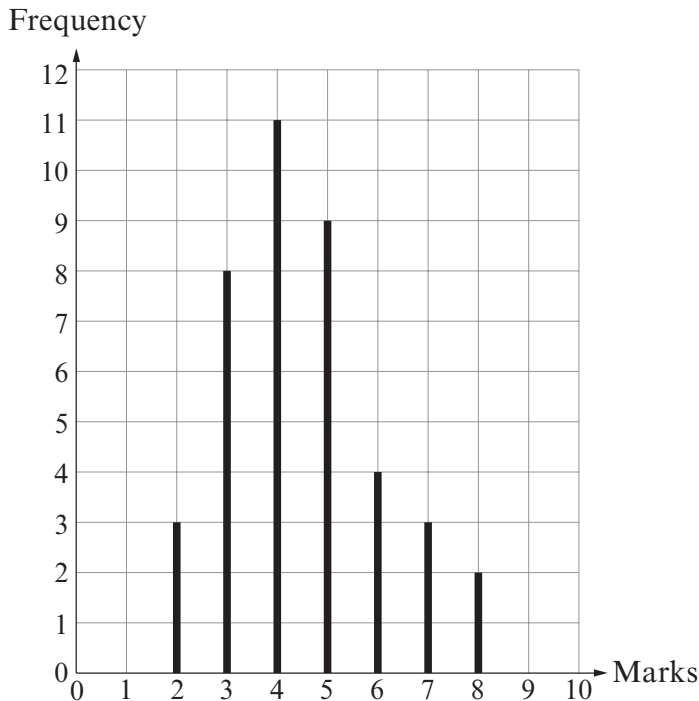
..... [1]

- (ii) What percentage of the group failed the examination?

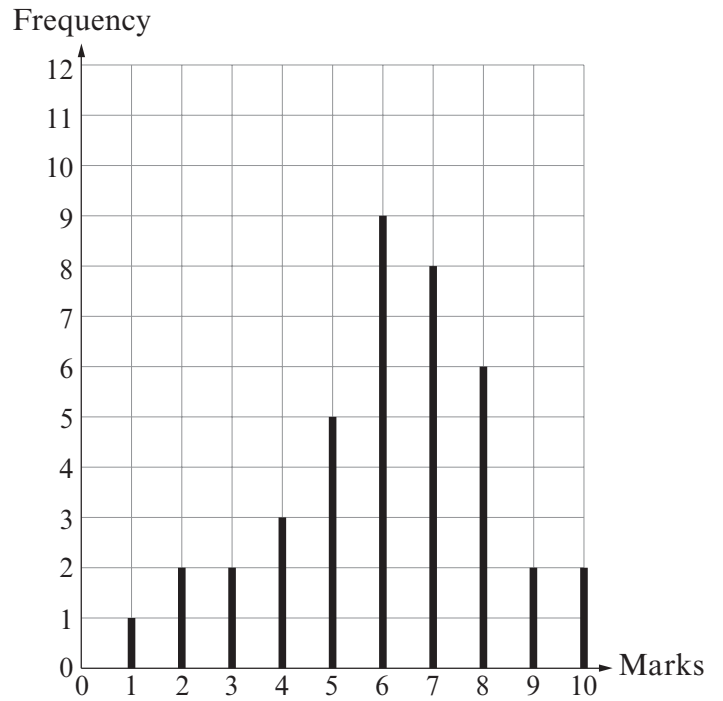
..... [1]

- (b) The diagrams below show how a group of 40 pupils performed in their History test and in their Geography test.

History



Geography



Compare the ranges of marks gained in the two tests.

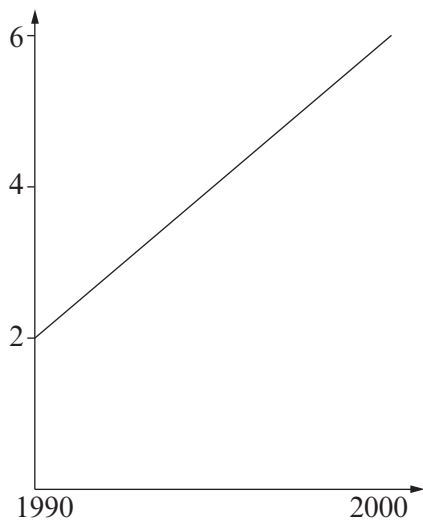
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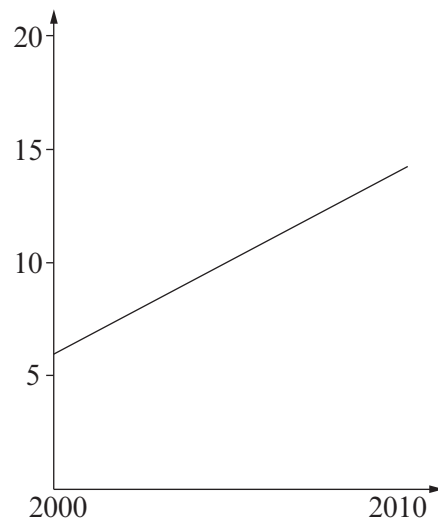
(c) A newspaper printed the diagrams shown below with the headline

'Changes in unemployment over two ten-year periods'

% unemployed



% unemployed



In what way could the information shown in the diagrams be misunderstood?

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.....

What is the reason for this?

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.....

[2]



8.

Cash Price
£1240

Dining Table
and
4 Chairs



Hire Purchase Price
Deposit: 15% of Cash Price
+ 36 monthly payments of £42

Calculate the total hire purchase price.

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[4]



10. An agricultural college weighed the fruit produced from a certain tree. They did this each year for a period of 3 years.

The tree produced 225 kg of fruit in its first year.

Each year following, the weight of the fruit reduced by $\frac{1}{3}$ of that produced in the previous year.

Showing all your calculations, find how many kilograms of fruit the tree produced in the third year.

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[3]



11. A survey was carried out to find whether more women than men visit the cinema.

The following two questions were asked.

<i>Q1. What is your age?</i>			
<i>Q2. How often do you visit the cinema?</i>			
<i>Never</i>	<i>1-2 times</i>	<i>3-5 times</i>	<i>5 or more times</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(a) For each question give **one** reason why it is not suitable.

Q1

.....

Q2

.....

[2]

(b) The survey was carried out by questioning people leaving a cinema one Wednesday afternoon.

Give **one** criticism on how the survey was carried out.

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[1]



12. Sian is driving along a road in Germany, which has a speed limit of 80 km per hour. She is driving at 55 mph.

By how much is her speed above or below the speed limit?

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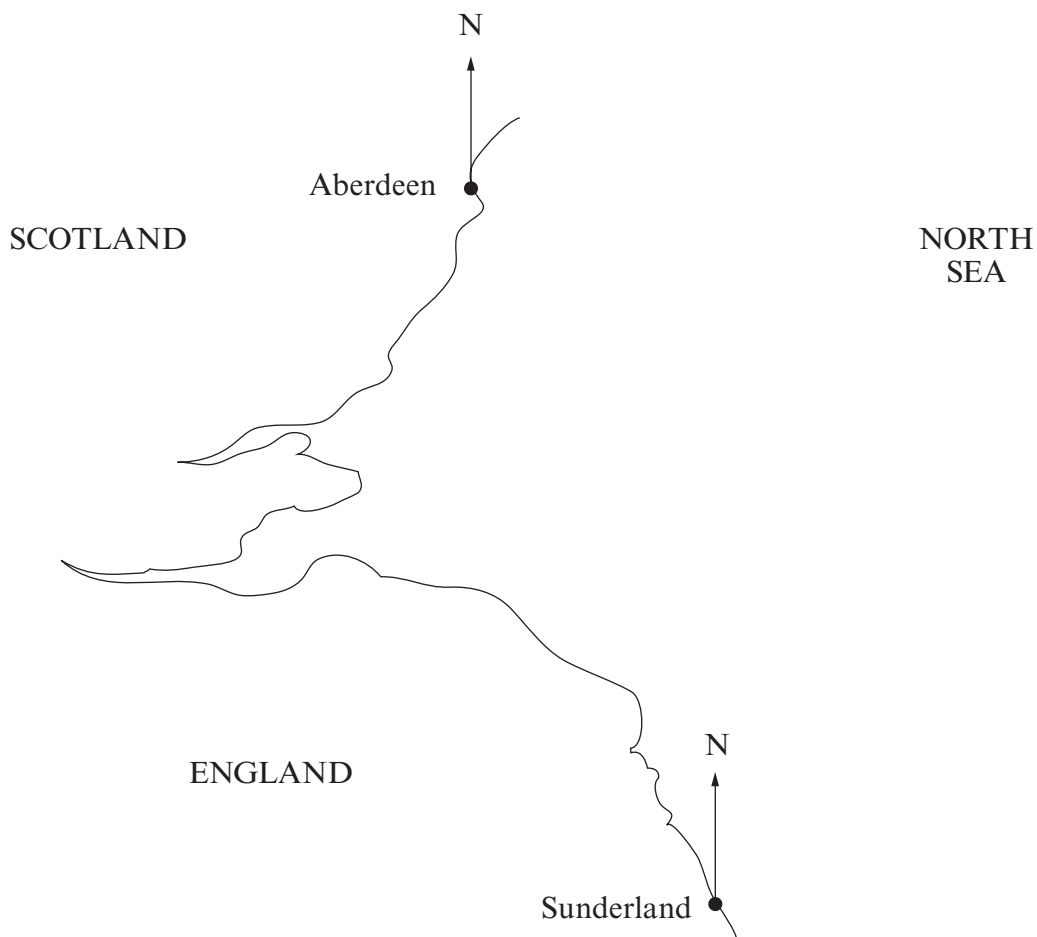
[3]



- 13. An oil ship is sailing in the North Sea.
It is 150 km from Sunderland on a bearing of 065°.

Plot its position on the diagram below and give its bearing from Aberdeen.

Scale : 1 cm represents 25 km



The bearing of the ship from Aberdeen is

[3]



