

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Pages	Mark
3	
4 – 5	
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20 – 21	
TOTAL	



General Certificate of Secondary Education
Foundation Tier

Mathematics (Linear) B

4365/2F

Paper 2 Calculator

Practice Paper 2012 Specification (Set 1)

F

<p>For this paper you must have:</p> <ul style="list-style-type: none"> a calculator mathematical instruments. 	
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Time allowed

- 1 hour 45 minutes

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work that you do not want to be marked.
- If your calculator does not have a π button, take the value of π to be 3.14 unless another value is given in the question.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 105.
- The quality of your written communication is specifically assessed in questions 7 and 20.
These questions are indicated with an asterisk (*).
- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer booklet.
- Use a calculator where appropriate.

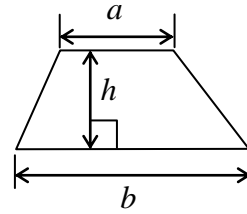
Advice

- In all calculations, show clearly how you work out your answer.

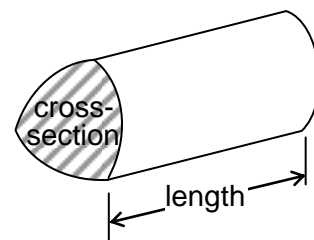
4365/2F

Formulae Sheet: Foundation Tier

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



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



Answer **all** questions in the spaces provided.

1 Here is a list of units.

Metric units centimetres litres kilometres kilograms

Imperial units inches pounds miles pints

From the list, for each of the following, choose a suitable metric unit and a suitable imperial unit.

	Metric Unit	Imperial Unit
The length of a human foot
The amount a cat weighs
The amount of water in a kettle
The distance between Paris and London

(4 marks)

2 Liz wants to double $\frac{1}{4}$

This is what she does: $\frac{1 \times 2}{4 \times 2} = \frac{2}{8}$

Has she doubled the fraction?

Tick a box.

Yes

No

Show clearly how you decide.

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(2 marks)

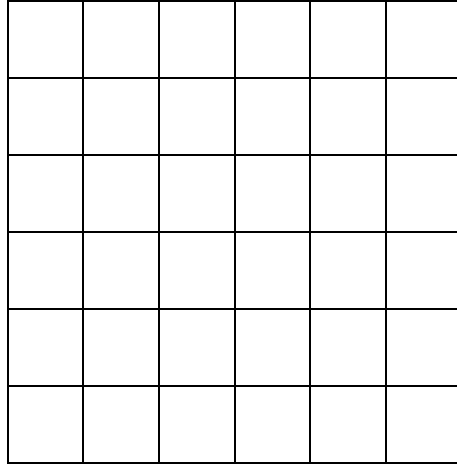
3 Hamdi describes a quadrilateral.

“It has only one pair of parallel sides.”

3 (a) (i) What is the name of the quadrilateral he is describing?

Answer (1 mark)

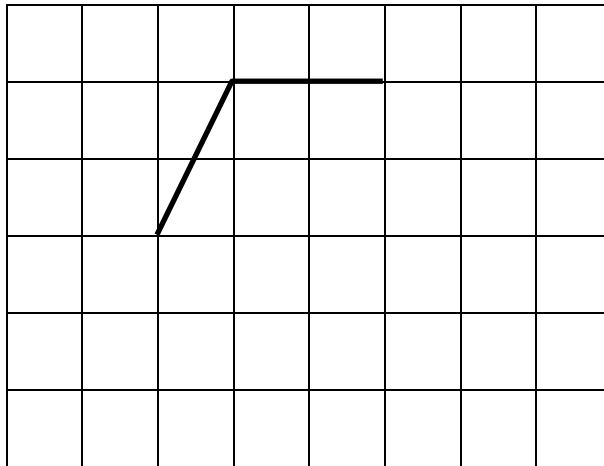
3 (a) (ii) On the grid draw this type of quadrilateral.



(1 mark)

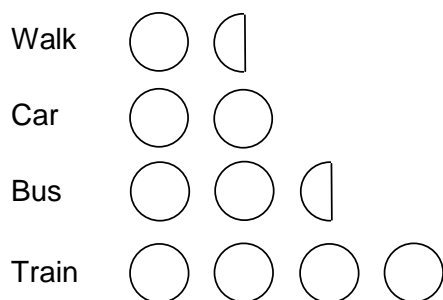
3 (b) On this grid draw a hexagon.


Two sides have been drawn for you.



(1 mark)

4 The pictogram shows how 20 people travel to work.



Key:  represents people

4 (a) Complete the key.

.....
(1 mark)

4 (b) What fraction of the 20 people travel to work by bus?

Give your answer in its simplest form.

.....
.....

Answer (2 marks)

4 (c) Which way of travelling to work is the mode?

Answer (1 mark)

5 Work out 8.13×4.28

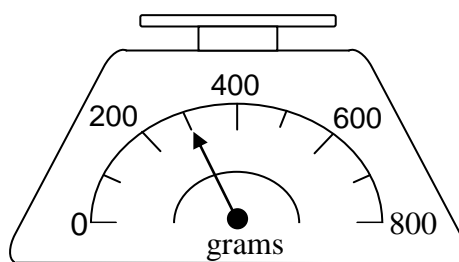
5 (a) Write down your full calculator display.

Answer (1 mark)

5 (b) Give your answer to one decimal place.

Answer (1 mark)

6 Sugar is weighed on these scales.



6 (a) How much does the sugar weigh?

Answer grams (1 mark)

6 (b) A recipe uses 550 grams of sugar.

How much more sugar is needed?

.....

Answer grams (2 marks)

6 (c) How can the scales be used to weigh 1.5 kilograms of flour?

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(2 marks)

6 (d) An empty jug weighs 80 grams.
A millilitre of water weighs 1 gram.
I need half a litre of water.

How much will the jug with half a litre of water weigh altogether?

.....
.....
.....

Answer grams (2 marks)

- *7 Value Added Tax (VAT) is 20%.
Here is a formula for working out the price of items including VAT.

$$\text{Price including VAT} = \text{Price excluding VAT} \times 1.2$$

- 7 (a) The price of an item excluding VAT is £84
Use the formula to work out the price including VAT.

.....
.....

Answer £ (2 marks)

- 7 (b) The table shows the prices of some clothes in a shop.

	Shirt	Trousers	Dress	Jumper
Price excluding VAT	£20	£34	£81	£42
Shop price	£24	£40.99	£97.50	£50.40

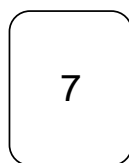
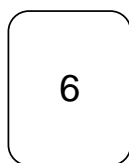
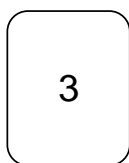
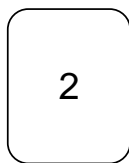
The shop price of some clothes is higher than the price including VAT.

Which clothes are these?

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Answer (2 marks)

8 Here are five number cards.

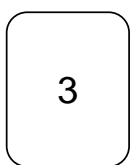
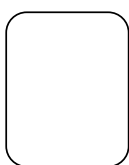
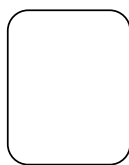


8 (a) Write down the largest number that can be made with the cards.

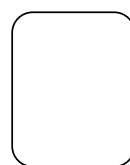
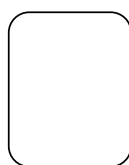
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Answer (1 mark)

8 (b) Use the cards 2, 6, 7 and 9 to make this calculation correct.



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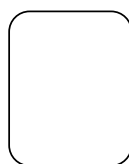
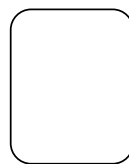
= 855

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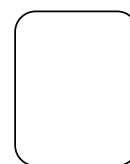
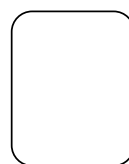
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(2 marks)

8 (c) Use the cards 2, 6, 7 and 9 to make this calculation correct.



-



= 581

.....

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(2 marks)

9 (a) Complete the table.

Fraction	Decimal	Percentage
$\frac{3}{4}$		
	0.73	
		74%

(4 marks)

9 (b) Put $\frac{3}{4}$, 0.73 and 74% in order of size, starting with the smallest.

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Answer (1 mark)

10 (a) A number has two digits.
It is a multiple of 9.
It is even.

What is the largest number it could be?

.....

.....

Answer (2 marks)

10 (b) A number has three digits.
It is a cube number.

What is the largest number it could be?

.....

.....

Answer (2 marks)

11 n is a whole number.

For each expression tick the correct box.

	Always odd	Either odd or even	Always even
$n + 1$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
$2n$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
$3n$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n^2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(3 marks)

12 It takes 15 minutes to get to the bus stop from home.
Buses leave the bus stop at 10 minutes past each hour and 20 minutes to each hour.
The bus journey to work takes 25 minutes.

I need to be at work for 9 am.

What is the latest time that I can set off from home?

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Answer (3 marks)

13 Jim buys 4 kilograms of oranges at £ 1.37 per kilogram.

13 (a) He pays with a £10 note.

13 (a) (i) How much change should he receive?

.....
.....

Answer £ (2 marks)

13 (a) (ii) List the coins he should receive.

Use as few coins as possible.

.....

Answer (2 marks)

13 (b) Jim squeezes the 4 kilograms of oranges to make juice.

Every kilogram of oranges makes 300 millilitres of juice.

13 (b) (i) How much juice does he make?

Give your answer in litres.

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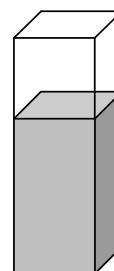
Answer litres (2 marks)

13 (b) (ii) 960 millilitres of juice is put in this carton.

The base of the carton is a square of side 8 cm.

1 millilitre of juice fills 1 cubic centimetre.

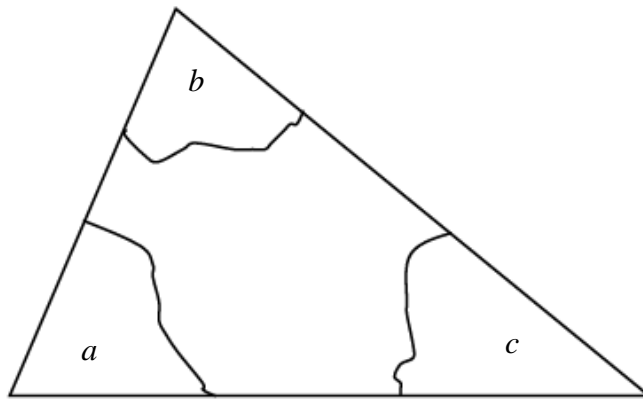
Calculate the height of the juice in the carton.



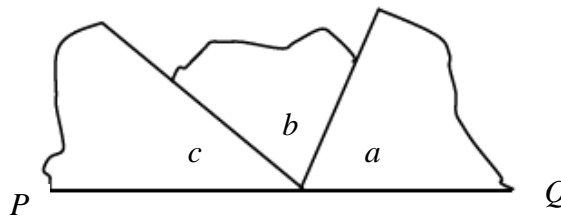
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Answer cm (4 marks)

14 (a) The diagram shows a triangular piece of paper.



The corners are cut off and pieced together as shown.

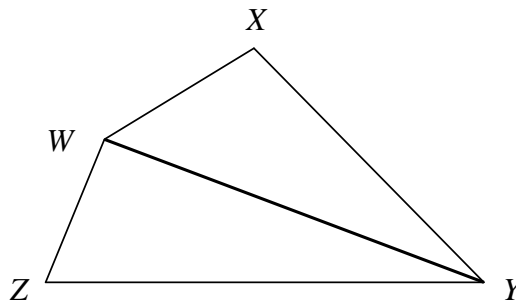


PQ is a straight line.

14 (a) (i) Write down an equation connecting a , b and c .

Answer (1 mark)

14 (a) (ii) $WXYZ$ is a quadrilateral.



Show that the angles of a quadrilateral add up to 360° .

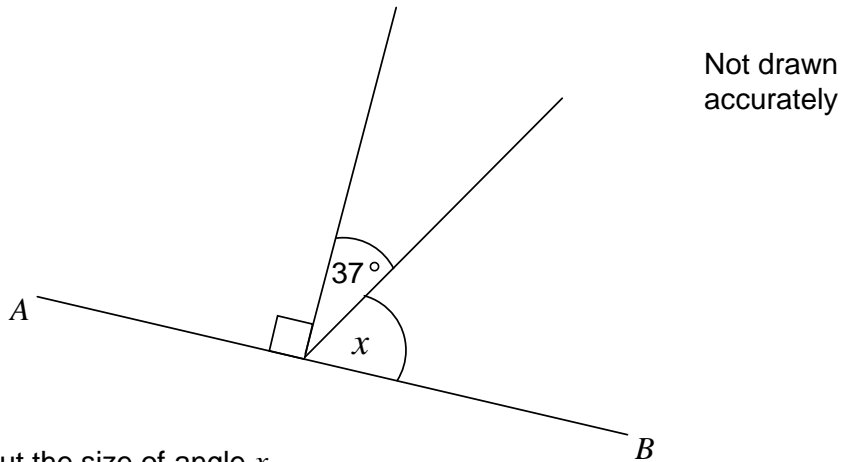
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(2 marks)

14 (b) AB is a straight line.



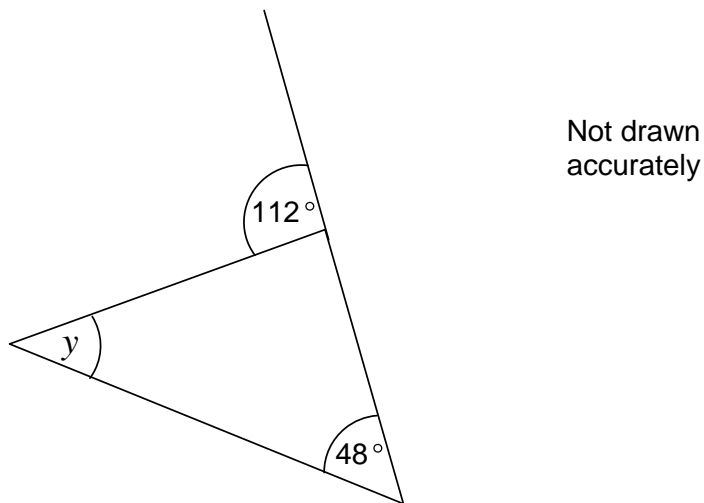
Work out the size of angle x .

.....

.....

Answer degrees (2 marks)

14 (c) The diagram shows a triangle with an exterior angle of 112° .



Work out the size of angle y .

.....

.....

Answer degrees (2 marks)

- 15 (a)** A bag contains 9 green, 7 black and 4 yellow counters.
A counter is chosen at random.

- 15 (a) (i)** What is the probability that it is black?

.....

Answer (2 marks)

- 15 (a) (ii)** What is the probability that it is **not** green?

.....

Answer (1 mark)

- 15 (b)** A different bag contains red, blue and white counters.
A counter is chosen at random.
The probability that it is red is double the probability that it is blue.
The probability that it is blue is double the probability that it is white.

What is the least number of counters in the bag?

.....

.....

Answer (2 marks)

- 16 (a)** Solve $\frac{w}{4} = 10$

.....

Answer $w =$ (1 mark)

- 16 (b)** Solve $7x + 2 = 6 - 3x$

.....

.....

.....

Answer $x =$ (3 marks)

17 (a) Simplify $2x + 8y + 7x - 3y$

.....
.....

Answer (2 marks)

17 (b) Factorise $8w - 10$

.....

Answer (1 mark)

18 A bank has these exchange rates for customers buying and selling Euros.

Buying Euros £1 = 1.15 Euros
Selling Euros £1 = 1.29 Euros

Ben buys Euros for £600
He spends 570 Euros on his holiday.

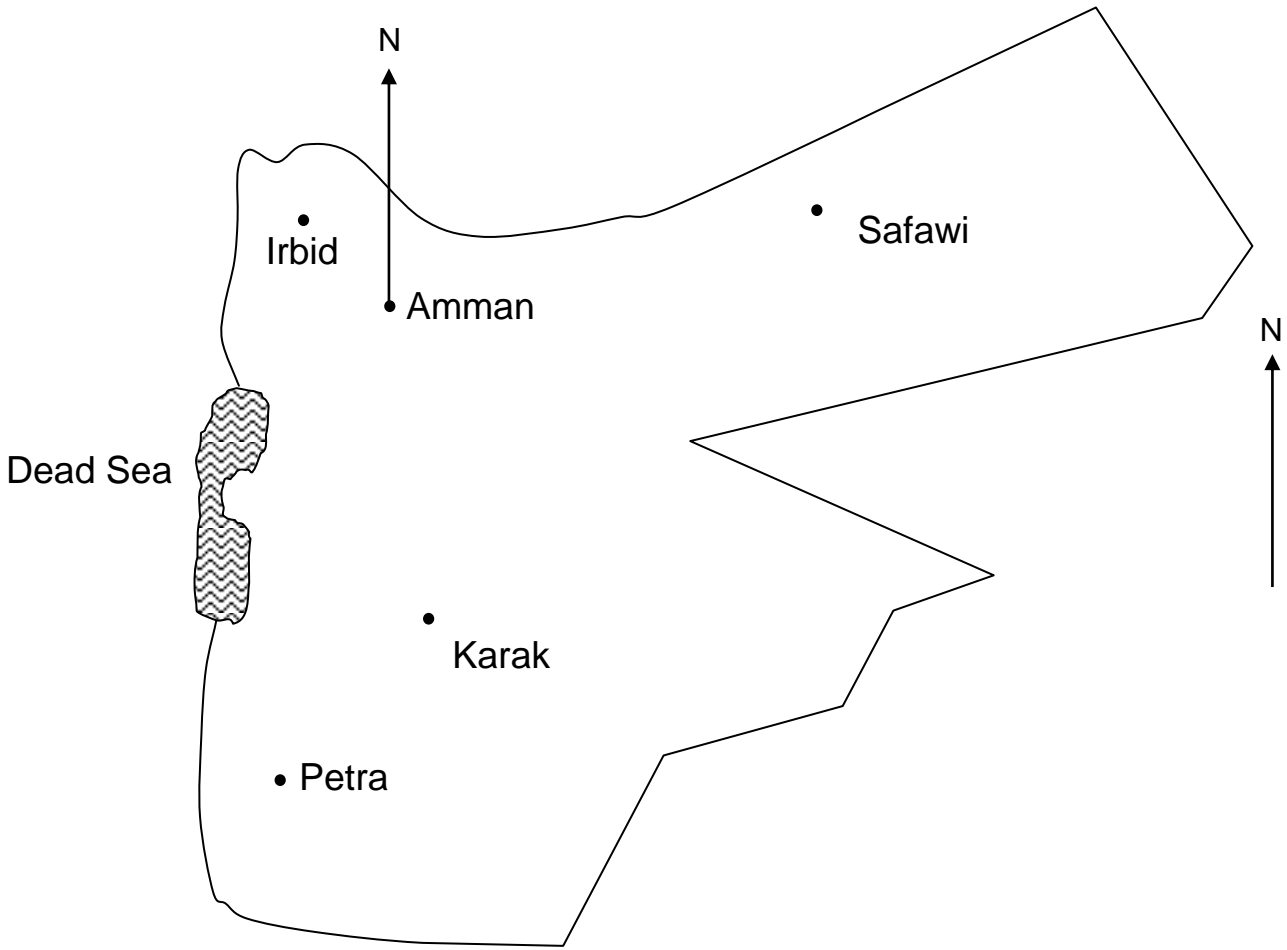
He sells the remaining Euros back to the bank.

How much does he get back from the bank?

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Answer £ (5 marks)

19 Here is a map of Jordan.



19 (a) Ezraq is on a bearing of 110° from Amman.
 Ezraq also lies on the straight road between Karak and Safawi.
 Mark the position of Ezraq on the map.

(2 marks)

19 (b) The distance from Amman to Irbid is 70 km.
 Calculate the distance from Amman to Petra.

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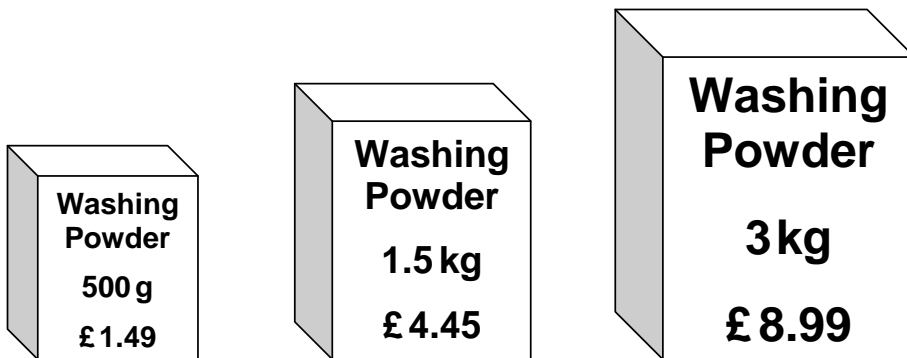
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Answer km (3 marks)

*20 A shop sells washing powder in three different sizes.



Amanda wants to buy 6 kg of washing powder in the cheapest possible way.

What should she buy?
You **must** show your working.

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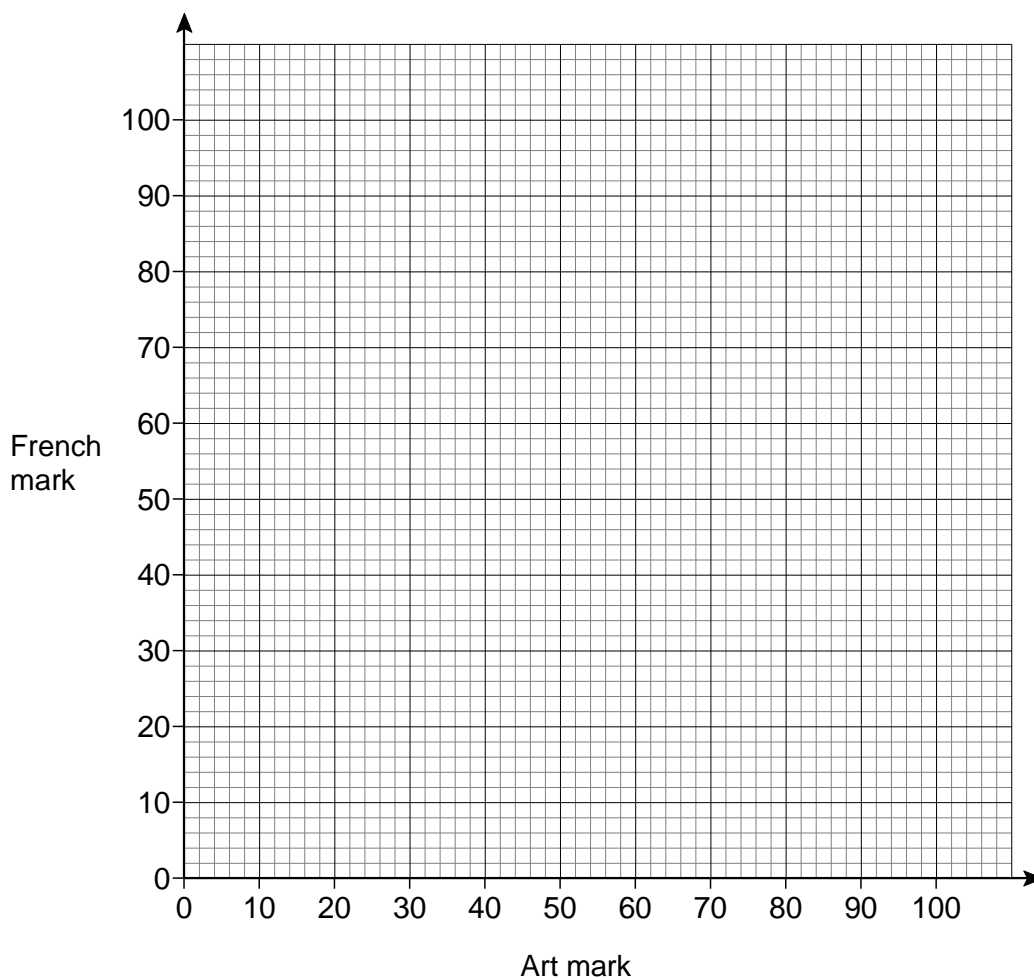
(4 marks)

Turn over for the next question

21 The table shows the marks for 10 students in Art and French examinations.

Student	A	B	C	D	E	F	G	H	I	J
Art mark	32	41	62	84	90	20	30	45	20	30
French mark	84	75	30	60	20	60	50	35	40	20

21 (a) Show this information on a suitable diagram on the grid below.



(3 marks)

21 (b) Describe the correlation between the marks in Art and French.

.....

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(1 mark)

21 (c) One of these students is chosen at random.

Work out the probability that this student has a mark of over 50 in at least one of the examinations.

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Answer (2 marks)

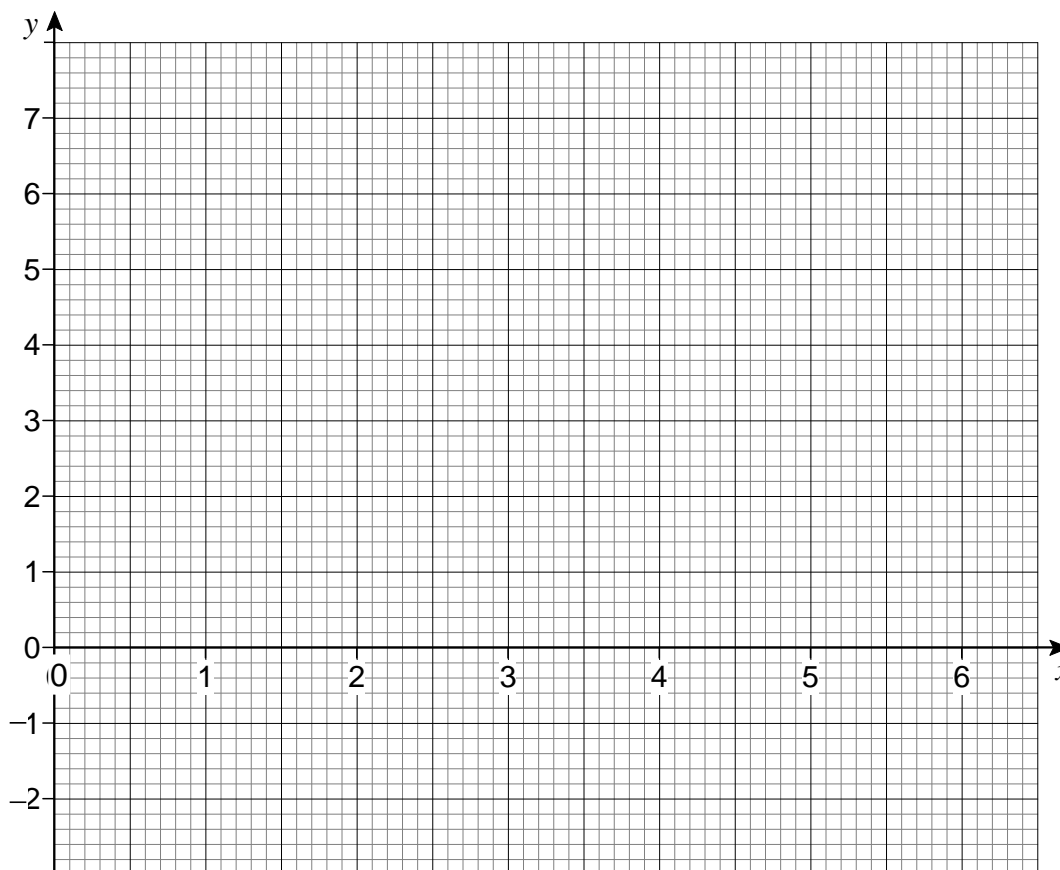
Turn over for the next question

22 (a) Complete the table of values for $y = x^2 - 6x + 7$

x	0	1	2	3	4	5	6
y	7		-1	-2		2	7

(2 marks)

22 (b) Complete the graph of values for $y = x^2 - 6x + 7$ for values of x from 0 to 6



(3 marks)

22 (c) Does the graph pass through the point (10, 51)?
Show how you decide.

.....

.....

(1 mark)

23

The table shows the number of goals scored in 37 football matches.

Number of goals	Frequency
0	12
1	10
2	6
3	4
4	3
5	2
Total 37	

One more match is played.

The mean number of goals per match is now 1.5

Work out the number of goals scored in the last match.

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Answer (4 marks)

END OF QUESTIONS

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