

Surname					Other Names				
Centre Number					Candidate Number				
Candidate Signature									

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General Certificate of Secondary Education
June 2004



MATHEMATICS (SPECIFICATION A) 3301/1F
Foundation Tier
Paper 1 Non-Calculator

F

Tuesday 8 June 2004 1.30 pm to 3.00 pm

<p>In addition to this paper you will require: mathematical instruments. You must not use a calculator.</p>	
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For Examiner's Use	
Pages	Mark
3	
4 – 5	
6 – 7	
8 – 9	
10 – 11	
12 – 13	
14 – 15	
16 – 17	
18 – 19	
TOTAL	
Examiner's Initials	

Time allowed: 1 hour 30 minutes

Instructions

- Use blue or black ink or ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions in the spaces provided.
- Do all rough work in this booklet.

Information

- The maximum mark for this paper is 100.
- Mark allocations are shown in brackets.
- Additional answer paper, graph paper and tracing paper will be issued on request and must be tagged securely to this answer booklet.
- The use of a calculator is **not** permitted.

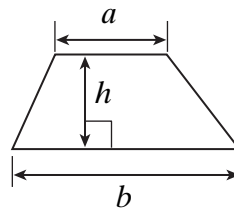
Advice

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

Formula Sheet: Foundation Tier

You may need to use the following formula:

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



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

1 The populations of three towns are given below.

Arton 15 748 **Barton** 9682 **Carton** 12 403

(a) Write the number 15 748 to the nearest thousand.

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Answer (1 mark)

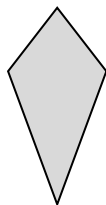
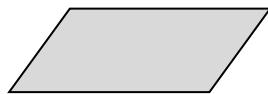
(b) Put the towns in order of their population, with the smallest first.

.....

.....

Answer (2 marks)

2 Draw arrows on the diagram to match each shape with its name.
The first arrow has been drawn for you.



square

rectangle

parallelogram

rhombus

trapezium

kite

(3 marks)

6

Turn over ▶

- 3 (a) Write down two multiples of 4.

Answer and (1 mark)

- (b) Write down two multiples of 7.

Answer and (1 mark)

- (c) Write down a number which is a multiple of both 4 and 7.

Answer (1 mark)

4 Work out

- (a) $426 + 37 + 384$

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

Answer (2 marks)

- (b) $800 - 472$

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.....
.....

Answer (2 marks)

- (c) 132×8

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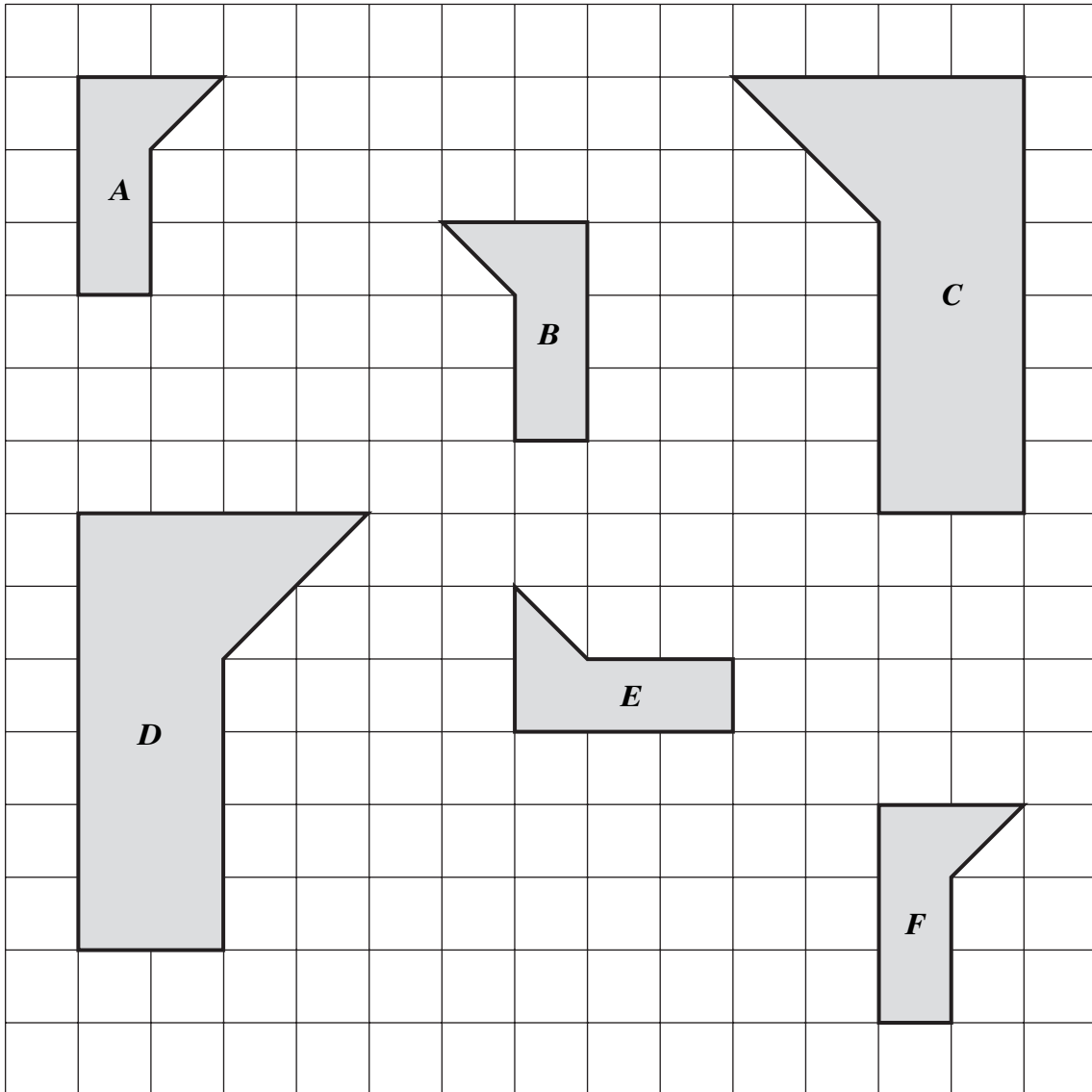
Answer (2 marks)

- (d) 0.2×0.4

.....

Answer (1 mark)

5 The grid shows six shapes *A*, *B*, *C*, *D*, *E* and *F*.



Write down the letters of the shapes which are congruent to shape *A*.

Answer (2 marks)

6 (a) Write down the next two terms in this sequence.

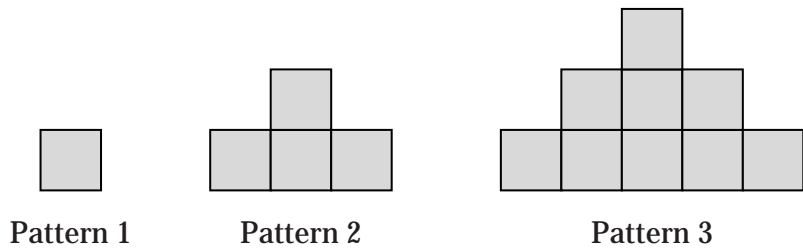
1 3 5 7

Answer and (1 mark)

(b) What type of numbers are the terms in the sequence?

Answer (1 mark)

(c) These patterns are made from squares.



(i) Complete the table below.

Pattern number	1	2	3	4	5
Number of squares in each pattern					

(3 marks)

(ii) Explain how you worked out the number of squares in Patterns 4 and 5.

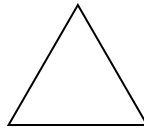
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(1 mark)

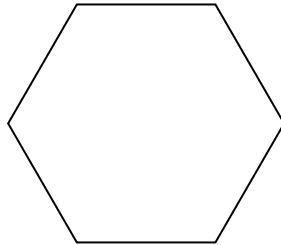
- 7 (a) In this triangle all the sides are the same length.



- (i) What name is given to this special type of triangle?

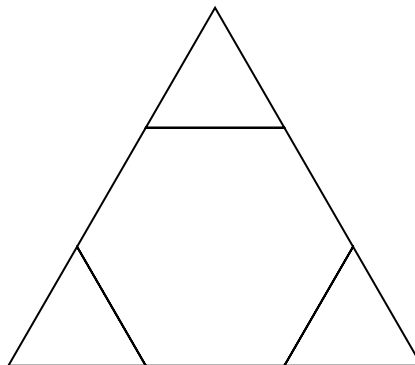
Answer (1 mark)

- (ii) What name is given to this regular polygon?



Answer (1 mark)

- (b) This shape is made from three of the triangles and the polygon.



- (i) Write down the order of rotational symmetry of the shape.

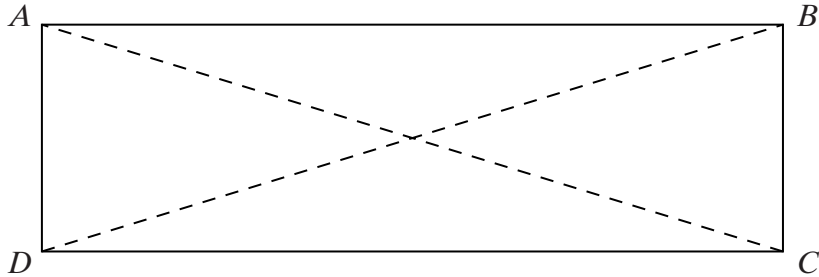
Answer (1 mark)

- (ii) Draw all the lines of symmetry on the shape.

(2 marks)

Turn over ►

- 8 $ABCD$ is a rectangle.
The rectangle has two diagonals AC and BD .

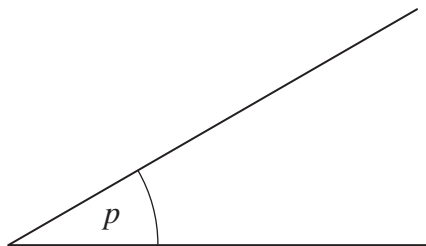


Tick the correct boxes to say whether the following statements are true or false.

- | | True | False |
|--|--------------------------|--------------------------|
| (a) The diagonals are equal in length. | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) The diagonals cross at right angles. | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) The diagonals bisect each other. | <input type="checkbox"/> | <input type="checkbox"/> |
| (d) The diagonals are lines of symmetry. | <input type="checkbox"/> | <input type="checkbox"/> |

(3 marks)

- 9 (a) Measure and write down the size of the angle p .
(b) Write down what type of angle it is.



(a) Size of angle	(b) Type of angle
$p = \dots\dots\dots$ degrees	$\dots\dots\dots$

(2 marks)

10 This passage is from a reading book for Primary School children.

Philip was staring into the night from his bedroom window. He was watching for aliens.

(a) Complete this frequency table by counting the number of letters in each word in the passage.

Number of letters in each word	Tally	Frequency
1		
2		
3		
4		
5		
6		
7		
8		
	Total	

(3 marks)

(b) Write down the mode of the number of letters in a word.

Answer (1 mark)

(c) A word is chosen at random from the passage.
Find the probability that the word has

(i) exactly four letters,

Answer (1 mark)

(ii) more than five letters.

Answer (2 marks)

(d) What do you think would happen to the average word length if a similar passage was chosen from an adult science fiction novel?

.....

.....

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(1 mark)

Turn over ▶

11 Cans of cola are sold in packs of six.
Each pack costs £2.18
Sam buys eight packs of cola.

(a) How many cans does he buy altogether?

.....

Answer (1 mark)

(b) How much does Sam pay for the eight packs?

.....

.....

.....

Answer £ (2 marks)

(c) Sam pays for the packs with a £20 note.
How much change is he given?

.....

.....

.....

Answer £ (1 mark)

12 Write down the values of

(a) 4^2

.....

Answer (1 mark)

(b) $\sqrt{81}$

.....

Answer (1 mark)

- 13 In the table below, the letters w , x , y and z represent different numbers. The total of each row is given at the side of the table.

w	w	w	w	24
w	w	x	x	28
w	w	x	y	25
w	x	y	z	23

Find the values of w , x , y and z .

.....

.....

.....

.....

Answer $w = \dots\dots\dots$, $x = \dots\dots\dots$, $y = \dots\dots\dots$, $z = \dots\dots\dots$ (4 marks)

- 14 Kath knows a quick way to work out 15% of any amount of money.

To work out 15% of £160

10% of £160 = £16

So 5% of £160 = £8

So 15% of £160 = £24



Use Kath's method to work out 15% of £420.

.....

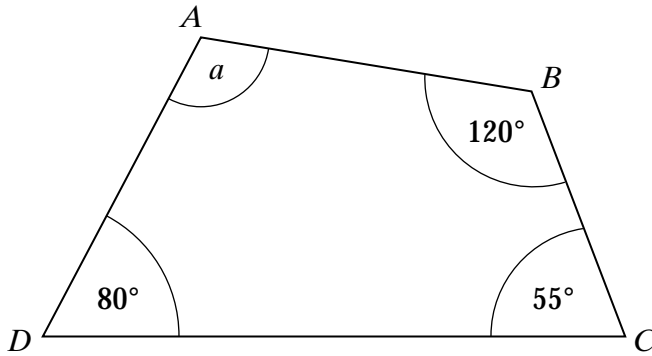
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Answer £ $\dots\dots\dots$ (3 marks)

Turn over ►

15 $ABCD$ is a quadrilateral.



Not drawn accurately

Work out the value of a .

.....

.....

.....

Answer degrees (2 marks)

16 Mr Smith is collecting money for a school trip.
All pupils pay the same amount.
He keeps a record of what he collects in this table.

Day	Number of pupils	Amount collected
Monday	16	£48
Tuesday		£36
Wednesday	20	

Complete Mr Smith's table.

.....

.....

.....

.....

(3 marks)

17 Sharon travels from Leeds to London in her car.
 The distance she travels is 200 miles.
 The journey takes her 4 hours.
 Find Sharon's average speed.

.....

Answer (3 marks)

18

60% of £40

$\frac{2}{5}$ of £55

Which is the larger amount?
 You **must** show your working.

.....

Answer (4 marks)

19 Simplify the following

(a) $3x + 2x - x$

.....

Answer (1 mark)

(b) $5x + 3y - 2x + 4y$

.....

Answer (2 marks)

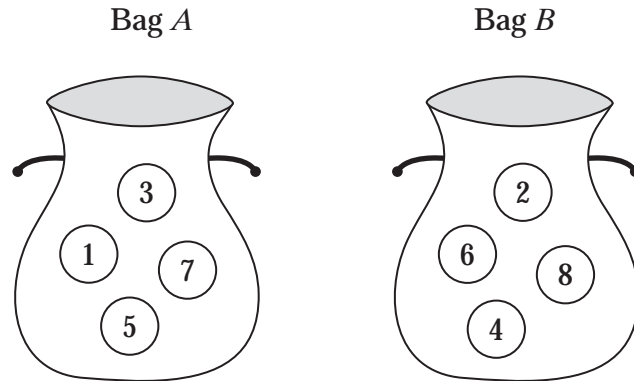
(c) $3 \times a \times 4$

.....

Answer (1 mark)

Turn over 

20 Two bags, *A* and *B*, each contain four numbered discs that are all the same size.



- (a) A disc is drawn at random from bag *A* and a disc is drawn at random from bag *B*. A score is obtained by adding the numbers on the two discs. Complete the table to show all the possible scores.

		Bag A			
+		1	3	5	7
Bag B	2	3	5		
	4				
	6				
	8				

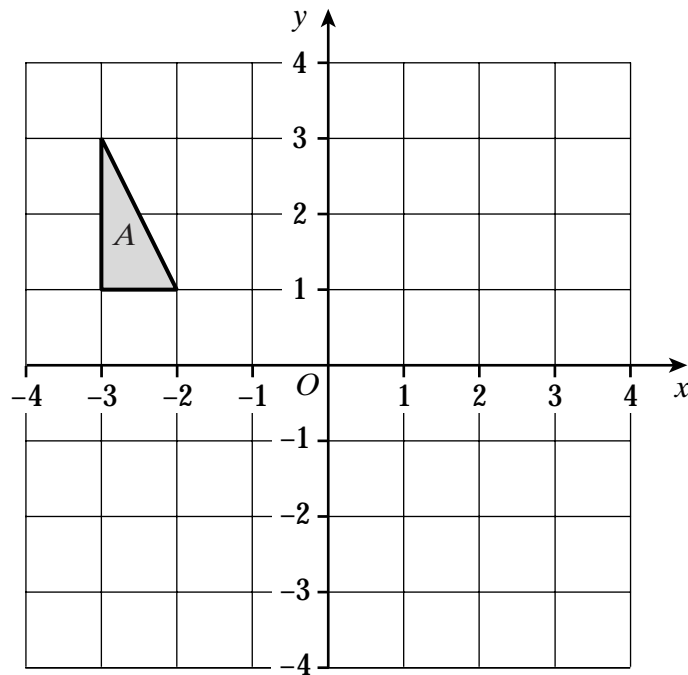
(2 marks)

- (b) Find the probability of scoring less than 9.

.....

Answer (2 marks)

21 Triangle A is drawn on the grid below.



- (a) Reflect triangle A in the x -axis.
Label the triangle B .

(1 mark)

- (b) Rotate triangle A 90° clockwise about the origin O .
Label the triangle C .

(2 marks)

TURN OVER FOR THE NEXT QUESTION

Turn over

22 Solve these equations

(a) $4x - 7 = 5$

.....

.....

Answer $x =$ (2 marks)

(b) $2(y + 5) = 28$

.....

.....

.....

Answer $y =$ (3 marks)

(c) $7z + 2 = 9 - 3z$

.....

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.....

Answer $z =$ (3 marks)

23 Heather is revising fractions for her homework.
This is how she answers one of the questions.

$$\frac{1}{2} + \frac{1}{3} = \frac{2}{5}$$

Heather is wrong.

Show the correct way to work out $\frac{1}{2} + \frac{1}{3}$

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.....

(3 marks)

24 Bob and Mary win £250 on the Premium Bonds.
They share the money in the ratio 1 : 4

(a) How much money does each person receive?

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.....

.....

.....

Answer Bob £, Mary £ (2 marks)

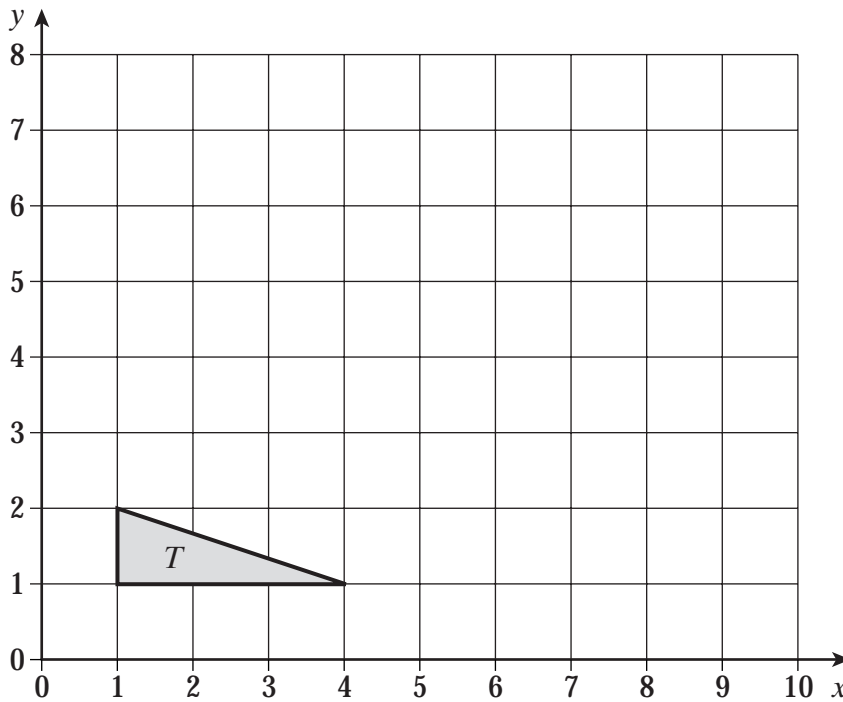
(b) What percentage of the £250 does Mary receive?

.....

.....

Answer % (2 marks)

25 The vertices of triangle T are (1, 1), (1, 2) and (4, 1).

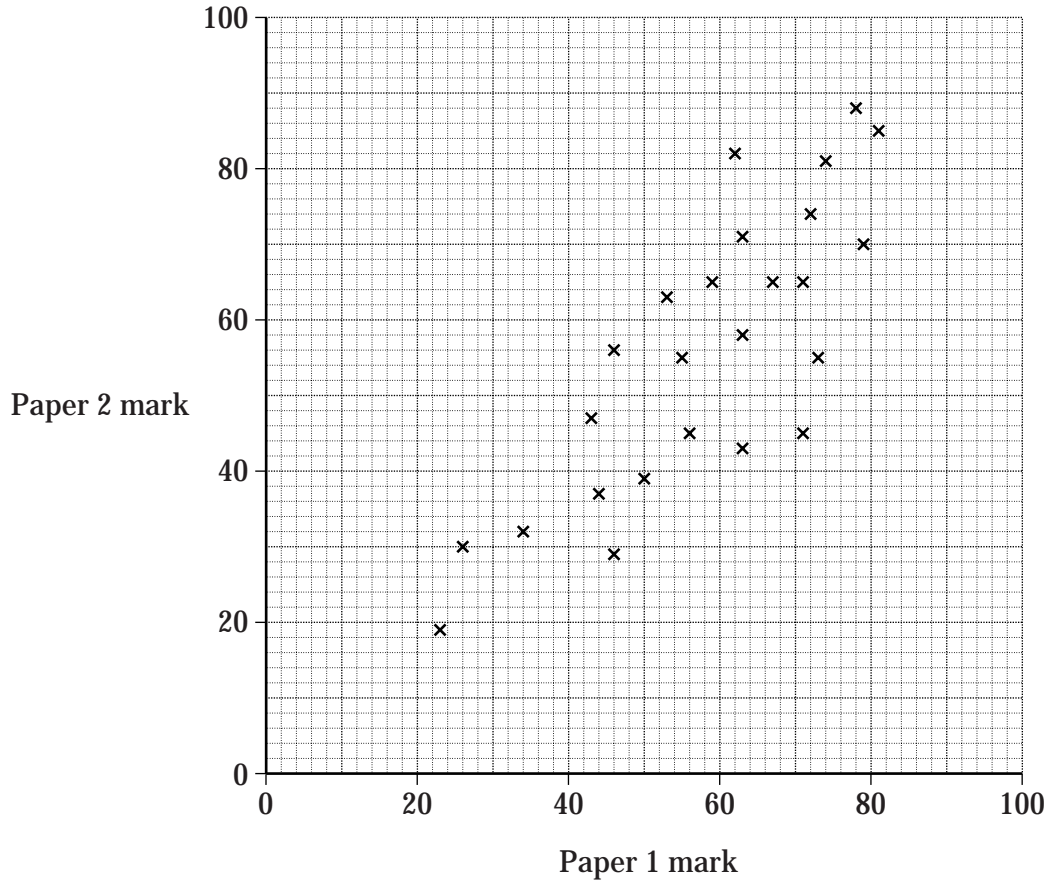


Enlarge triangle T by scale factor 2, with (0, 0) as the centre of enlargement.

(3 marks)

Turn over ►

26 Mrs Millington gives her class two mock GCSE examination papers. The scatter graph shows the results.



(a) Write down the highest mark scored on Paper 2.

Answer marks (1 mark)

(b) Describe the relationship shown on the scatter graph.

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(1 mark)

(c) Draw a line of best fit on the scatter graph.

(1 mark)

(d) Kay was absent for Paper 2, but scored a mark of 56 on Paper 1.
Use your line of best fit to estimate Kay's mark on Paper 2.

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Answer marks (1 mark)

END OF QUESTIONS

THERE ARE NO QUESTIONS PRINTED ON THIS PAGE