

Candidate Name	Centre Number	Candidate Number
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GCSE

185/01

**MATHEMATICS (2 Tier)
FOUNDATION TIER
PAPER 1**

A.M. THURSDAY, 6 November 2008

2 hours

**CALCULATORS ARE
NOT TO BE USED
FOR THIS PAPER**

INSTRUCTIONS TO CANDIDATES

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.

Calculators are **not** allowed for this paper.

Take π as 3.14.

INFORMATION FOR CANDIDATES

You should give details of your method of solution when appropriate.

Unless stated, diagrams are not drawn to scale.

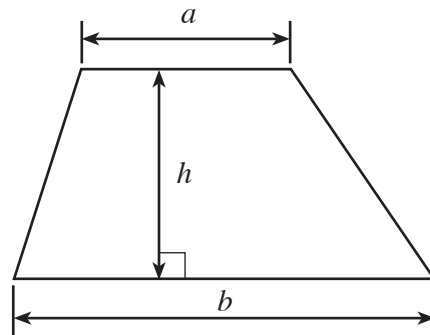
Scale drawing solutions will not be acceptable where you are asked to calculate.

The number of marks is given at the end of each question or part-question.

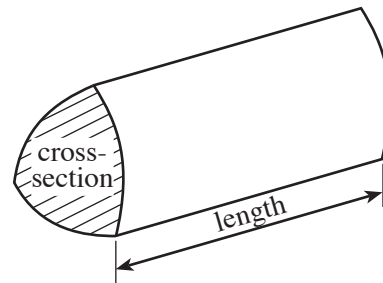
For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1	7	
2	9	
3	4	
4	9	
5	4	
6	5	
7	7	
8	5	
9	4	
10	4	
11	4	
12	3	
13	4	
14	6	
15	4	
16	4	
17	6	
18	4	
19	4	
20	3	
TOTAL MARK		

Formula List

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



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



1. (a) 32 7 34 27 57 58 16 68 48 26

Using the above numbers only, write down

- (i) two numbers which add up to 90,
- (ii) two numbers which have a difference of 18,
- (iii) a number which is a multiple of 12,
- (iv) the answer to $56 \div 8$

[4]

- (b) Four numbers are written on cards.

5

4

9

6

Rearrange these four cards to form

- (i) the smallest four-digit number,

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- (ii) the largest four-digit number.

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[2]

- (c) John buys a new computer for £300.

Each month, he pays $\frac{1}{6}$ of this amount for the computer.

How much does John pay each month?

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.....

[1]

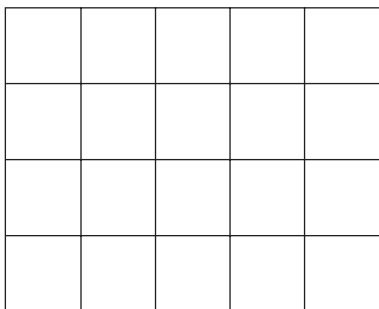
2. (a) Write down, in words, the number 8043.

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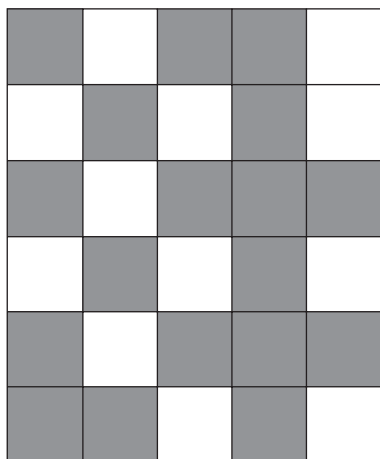
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[1]

- (b) (i) Shade 75% of the following figure.



- (ii) What fraction of the following figure is NOT shaded? Write the fraction in its lowest terms.



.....

.....

[3]

- (c) Circle the fractions that are equivalent to $\frac{1}{5}$.

$$\frac{2}{12} \quad \frac{2}{10} \quad \frac{5}{25} \quad \frac{3}{20} \quad \frac{6}{20}$$

[2]

- (d) Write $\frac{1}{4}$ as a decimal.

Write 30% as a decimal.

Write $\frac{1}{4}$, 30% and 0.28 in ascending order.

.....

[3]

3.



Hire with us - excellent rates

$\text{Cost} = \text{Number of days} \times \text{£}60 + \text{handling fee}$

- (a) Find the **cost** for Peter to hire a car, when the **number of days** is 5 and the **handling fee** is £40.

.....

.....

[2]

- (b) Wendy hires a different car and is charged a **handling fee** of £30.
The **cost** for Wendy is £510.
Find the **number of days** for which Wendy hires the car.

.....

.....

[2]

4. Each of the forty pupils voted for a candidate to represent them on a school committee. The candidates were:

Andrea (A) Brian (B) Clara (C) David (D)

The results of the voting are as shown below.

B	A	D	B	C	C	A	B	C	B
D	B	C	A	B	D	C	D	B	A
B	C	A	B	D	A	B	C	A	C
D	A	B	C	A	D	C	C	B	D

- (a) Complete the frequency table below.

Candidate	Tally	Frequency
A		
B		
C		
D		

[2]

- (b) Write down the mode

[1]

- (c) Using the graph paper on the opposite page, draw a suitable bar chart of the data given in the table.

[4]

- (d) One pupil is chosen at random. What is the probability that the pupil voted for Clara?

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[2]

For use with question 4



5. The following diagram shows a rectangular box without a lid.

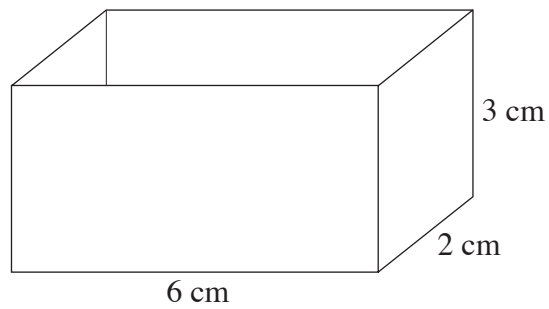


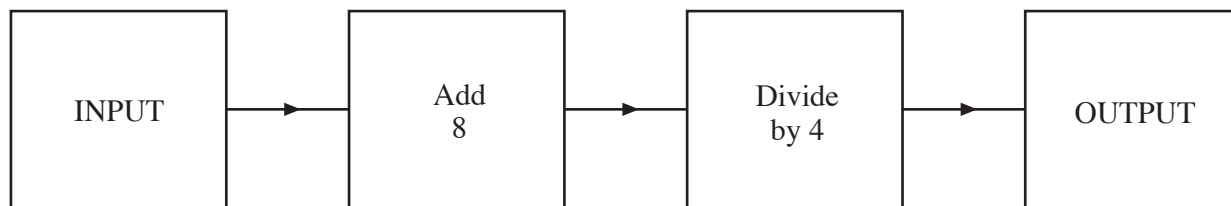
Diagram not drawn to scale.

Draw an accurate net for this box.
The base has been drawn for you.

[4]



6. (a)



- (i) Find the value of the OUTPUT when the INPUT is 12.

.....
 [1]

- (ii) Find the value of the INPUT when the OUTPUT is 10.

.....
 [2]

- (b) The coordinates of each of the points (2, 10), (3, 15) and (4, 20) satisfy a rule.

- (i) The point (10, y) satisfies the same rule.
Find the value of y .

.....

- (ii) The point (x , 100) satisfies the same rule.
Find the value of x .

.....
 [2]

7. (a) Which metric unit is best used to measure

- (i) the length of a football pitch,
- (ii) the weight of a bag of potatoes,
- (iii) the amount of petrol in the petrol tank of a car,
- (iv) the area of the floor of a classroom?

[4]

(b)

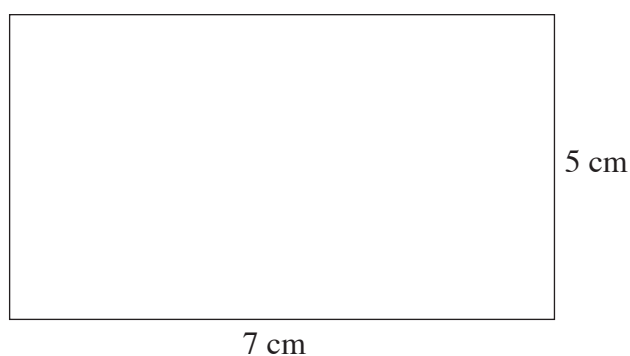


Diagram not drawn to scale.

- (i) Calculate the perimeter of the rectangle.

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.....

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[1]

- (ii) Calculate the area of the rectangle.

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[2]

8. (a) Find 70% of 60.

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[2]

- (b) Find the value of 536×43 .

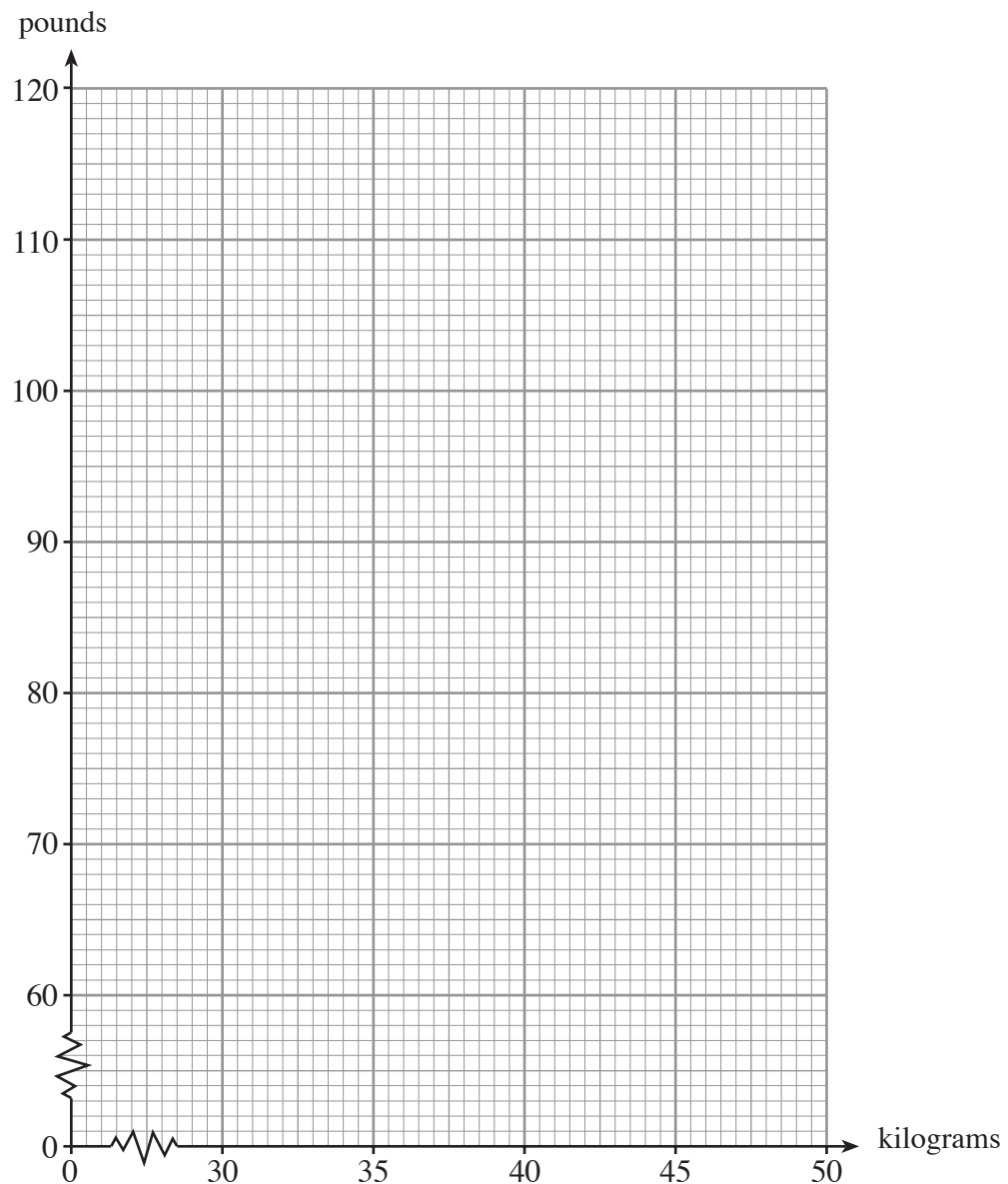
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[3]

9. (a) The table gives the masses of 3 people, both in pounds and in kilograms.

Kilograms	30	40	50
Pounds	66	88	110

Use the data in the table to draw a conversion graph between kilograms and pounds. [2]



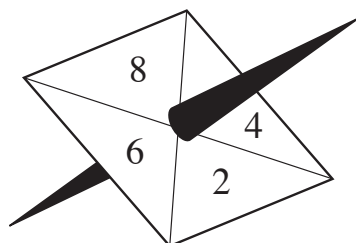
- (b) Use your graph to find an estimate for the number of kilograms in 200 pounds.

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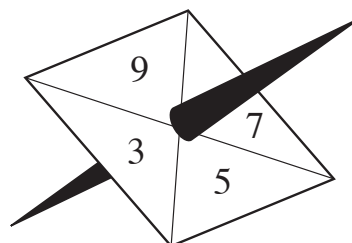
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[2]

10. Spinner A has four equal sections numbered 2, 4, 6 and 8. Spinner B has four equal sections numbered 3, 5, 7 and 9. In a game both spinners are spun and the two numbers obtained are multiplied together to give the score.



Spinner A



Spinner B

- (a) Complete the following table to show **all** the possible scores.

Spinner B	9	18	36	54	72
	7	14	28	42	56
	5	10
	3	6
		2	4	6	8
		Spinner A			

[2]

- (b) Find the probability that the score is less than 20.

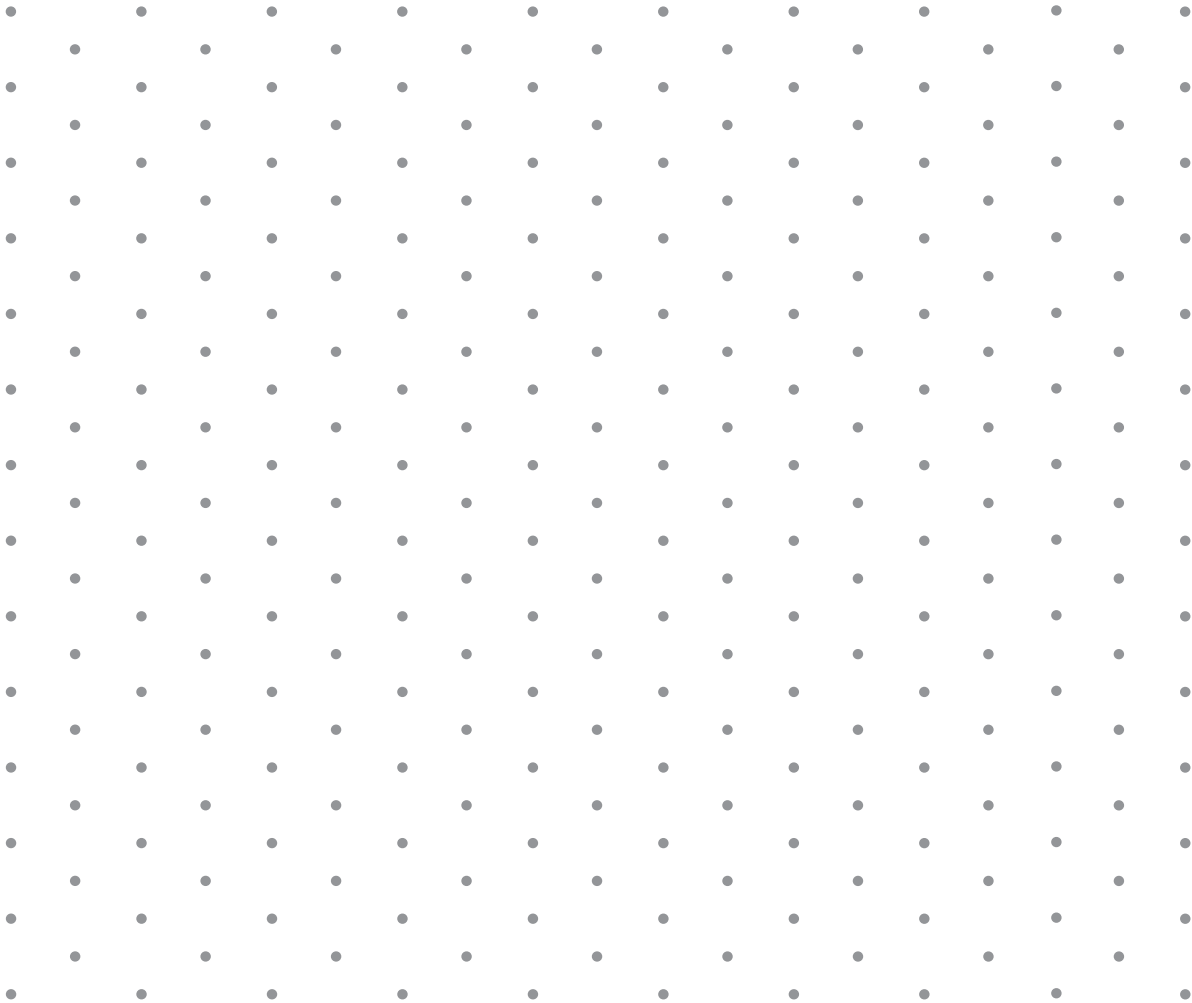
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[2]

11. (a) On the isometric paper provided, draw an isometric representation of a cuboid with dimensions 6 cm by 4 cm by 5 cm.

[2]



- (b) A water tank has the shape of a cube with side of length 30 cm.
Calculate the volume of the tank.

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[2]

12. Using the scale of 1 cm to represent 40 cm, draw the triangle ABC , in which $AB = 400$ cm, $BC = 360$ cm and $\angle ABC = 50^\circ$.

[3]

13. Find the value of

(a) 0.6×0.1 ,

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[1]

(b) $23.1 - 15.48$,

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[1]

(c) $2^4 \times 3^2$.

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[2]

14. (a) Stan's printer prints 8 copies per minute.
Julia's printer prints 11 copies per minute.

Stan's printer prints for x minutes.

- (i) Write down, in terms of x , the **number of copies** that Stan's printer prints in these x minutes.

.....
[1]

- (ii) Julia's printer prints for 4 minutes less than Stan's printer.
Write down, in terms of x , the **number of minutes** for which Julia's printer prints.

.....
[1]

- (iii) Write down, in terms of x , the **number of copies** that Julia's printer prints.

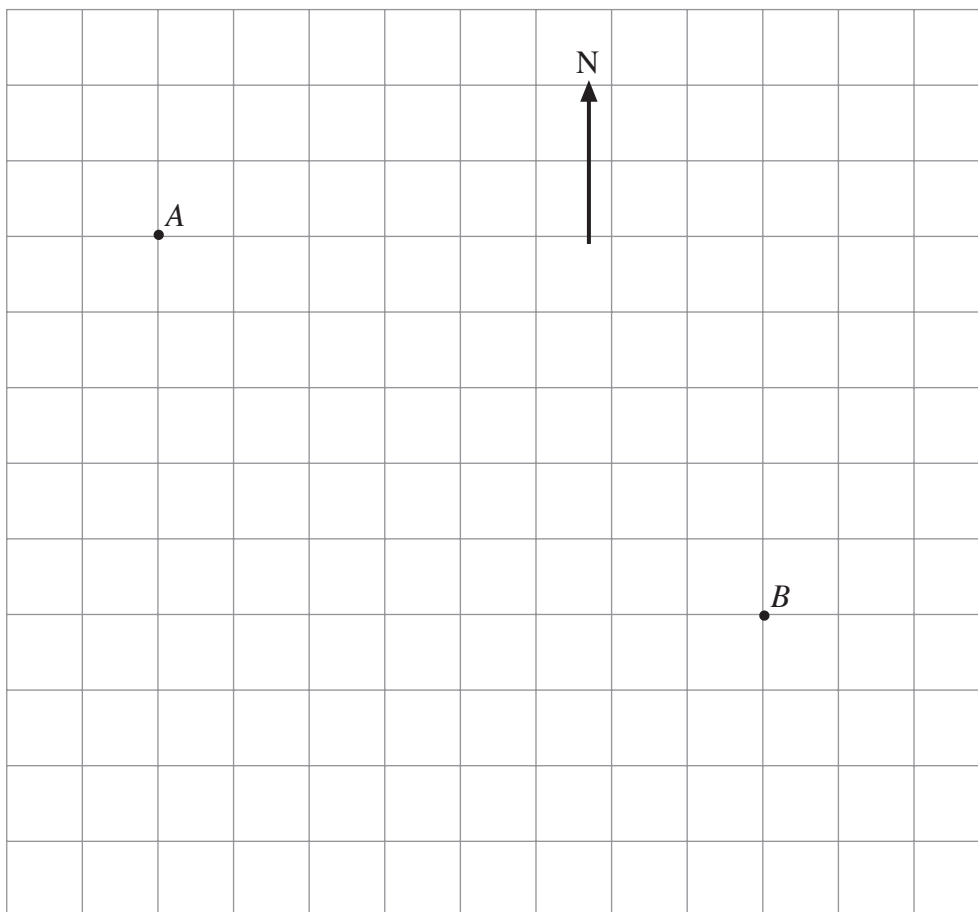
.....
[1]

- (b) Simplify $2(3x - 1) + 3x + 4$.

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.....
.....
[3]

15. (a) Two towns are represented by the points A and B on the grid below. Write down the bearing of A from B .

[1]



- (b) Another town, C , is on a bearing of 145° from A and on a bearing of 243° from B . Plot, as accurately as you can, the position of this town.

[3]

16. (a) Clearly showing how you obtained your answer, ESTIMATE the value of:

$$\frac{148 \times 2987}{610}$$

.....

.....

.....

[2]

- (b) In an examination, a pupil scores 165 marks out of a total of 300 marks. What percentage is this?

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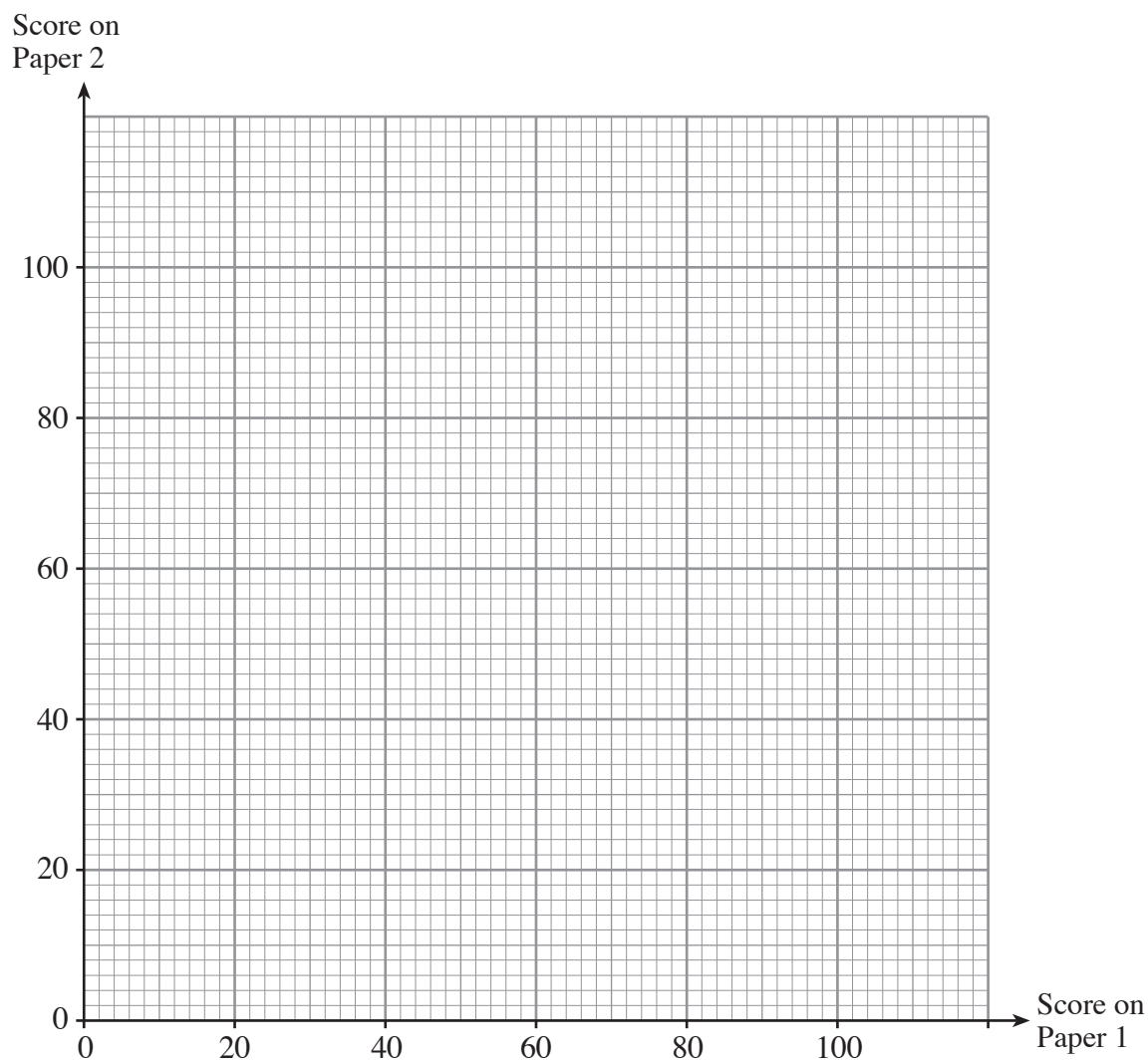
[2]

17. The table shows the pairs of scores obtained by 8 pupils on Paper 1 and Paper 2 of a mathematics examination.

Pupil	1	2	3	4	5	6	7	8
Paper 1	18	36	88	66	98	46	52	84
Paper 2	34	30	86	68	80	54	52	68

- (a) On the graph paper provided draw a scatter diagram for these results.

[2]



- (b) Describe the type of correlation shown by your scatter diagram.

[1]

- (c) The mean mark for the pupils on Paper 1 is 61 and the mean mark on Paper 2 is 59.
Draw a line of best fit on your scatter diagram.

[2]

- (d) Another pupil sat Paper 1 and was given a mark of 78, but was absent for Paper 2. Use your line of best fit to estimate the mark on Paper 2 for this pupil.

[1]

18. (a) Express 1323 as a product of prime numbers in index form.

[3]

- (b) Write down the least whole number by which 1323 should be multiplied to make the result a perfect square.

[1]

19. The table shows the values of $y = 2x^2 + x - 3$ for values of x from -3 to 3 .

x	-3	-2	-1	0	1	2	3
$y = 2x^2 + x - 3$	12	3	-2	-3	0	7	18

- (a) On the graph paper opposite, draw the graph of $y = 2x^2 + x - 3$ for values of x between -3 and 3 . [2]
- (b) Draw the line $y = 6$ on your graph paper and write down the x -values of the points where your two graphs intersect.

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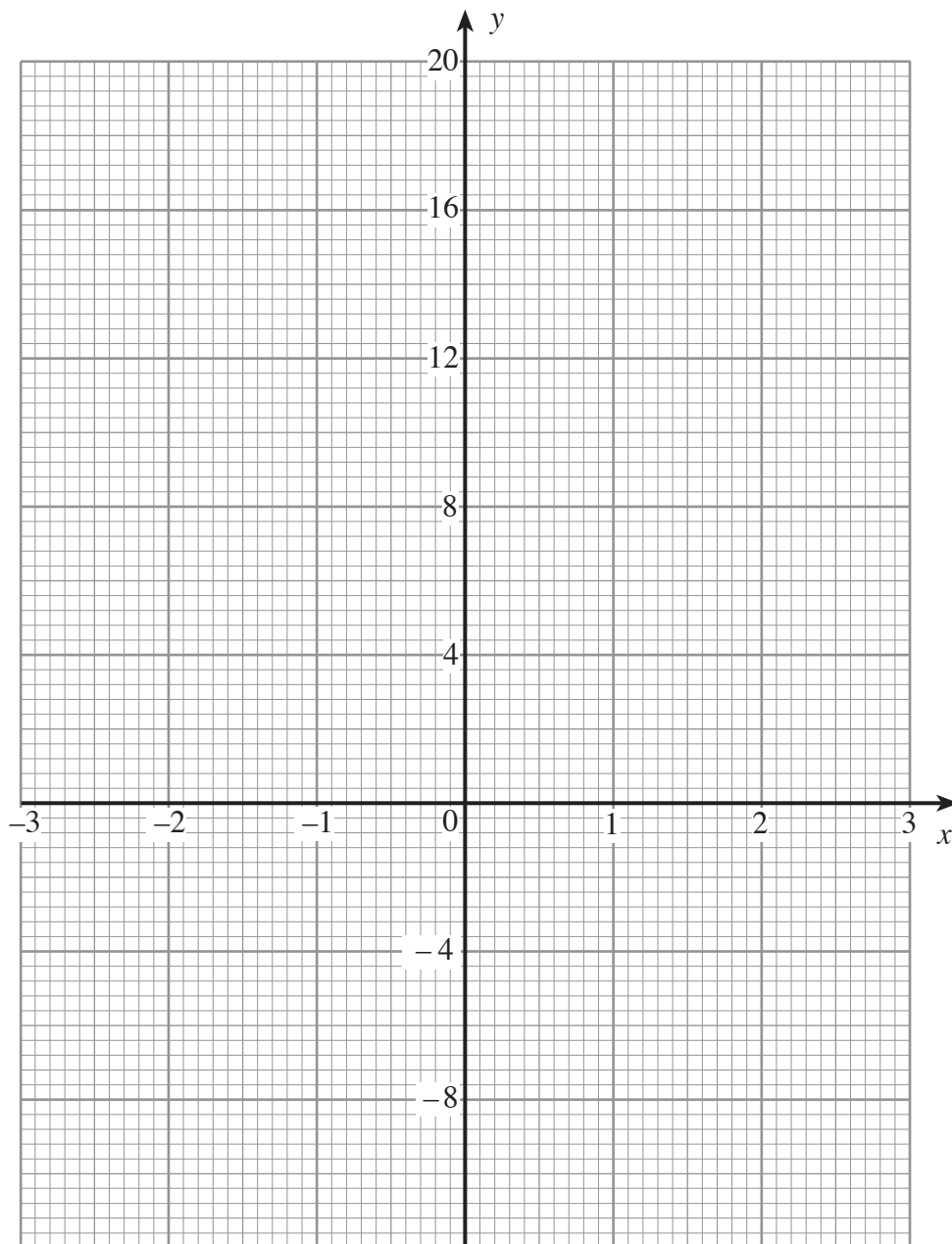
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[2]

For use with question 19.



20. Find and shade the region of points inside the trapezium $ABCD$ that satisfy **both** of the following conditions.

- (i) The points are nearer to AD than to DC .
- (ii) The points are further than 3 cm from the line AB .

[3]

