Centre No.						Paper Reference							Surname	Initial(s)
Candidate No.						5	5	2	3	/	0	3	Signature	

Paper Reference(s)

5523/03

Examiner's use only

Team Leader's use only

Edexcel GCSE

Mathematics A – 1387

Paper 3 (Non-Calculator)

Intermediate Tier

Tuesday 6 November 2007 – Morning

Time: 2 hours

Materials required for examination

Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser.
Tracing paper may be used.

Items included with question papers

Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
You must NOT write on the formulae page. Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
There are 21 questions in this question paper. The total mark for this paper is 100.
There are 20 pages in this question paper. Any blank pages are indicated.
Calculators must not be used.

Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

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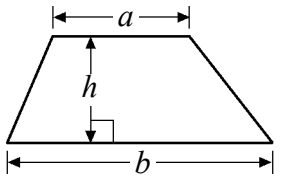
GCSE Mathematics 1387/8

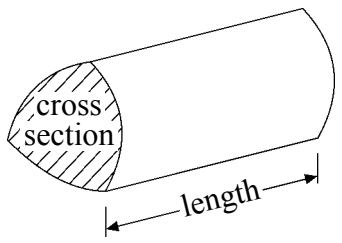
Formulae: Intermediate Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

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



Volume of prism = area of cross section × length



N 2 9 1 0 9 A 0 2 2 0

Leave blank

Answer ALL TWENTY ONE questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator.

1. (a) Work out £3.75 × 24

£ .....

(3)

(b) Divide £135 by 20

£ .....

(3)

(Total 6 marks)

Q1

Leave blank

2. (a) Write these fractions in order of size.
Start with the smallest fraction.

$\frac{3}{4}$ $\frac{5}{6}$ $\frac{2}{3}$ $\frac{7}{12}$

.....

(2)

(b) Work out $\frac{3}{4}+\frac{1}{6}$

.....

(2)

(c) (i) Which of these fractions can be written as a recurring decimal?

$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{5}$

.....

(ii) Explain your answer.

.....

.....

.....

(2)

Q2

(Total 6 marks)

Leave blank

3.

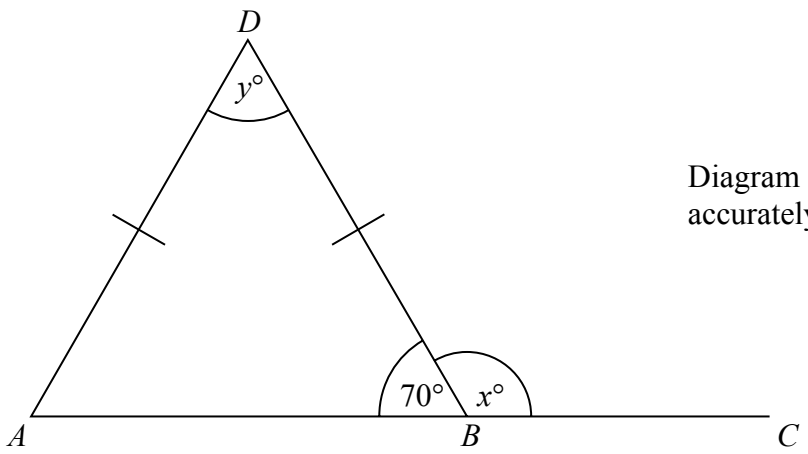


Diagram **NOT** accurately drawn

ABD is a triangle.
ABC is a straight line.
Angle *ABD* = 70°.
AD = *BD*.

(a) (i) Work out the value of *x*.

x = ...

(ii) Give a reason for your answer.

.....

(2)

(b) (i) Work out the value of *y*.

y = ...

(ii) Give a reason for your answer.

.....

.....

(3) **Q3**

(Total 5 marks)

Leave blank

4. The two-way table shows some information about the colours of Ford cars and of Toyota cars in a garage.

	white	blue	red	Total
Ford	5			21
Toyota		7		
Total	9	16		40

(a) Write down the total number of white cars.

.....

(1)

(b) Complete the two-way table.

(3)

One of these 40 cars is to be picked at random.

(c) Work out the probability that this car will be blue.

.....

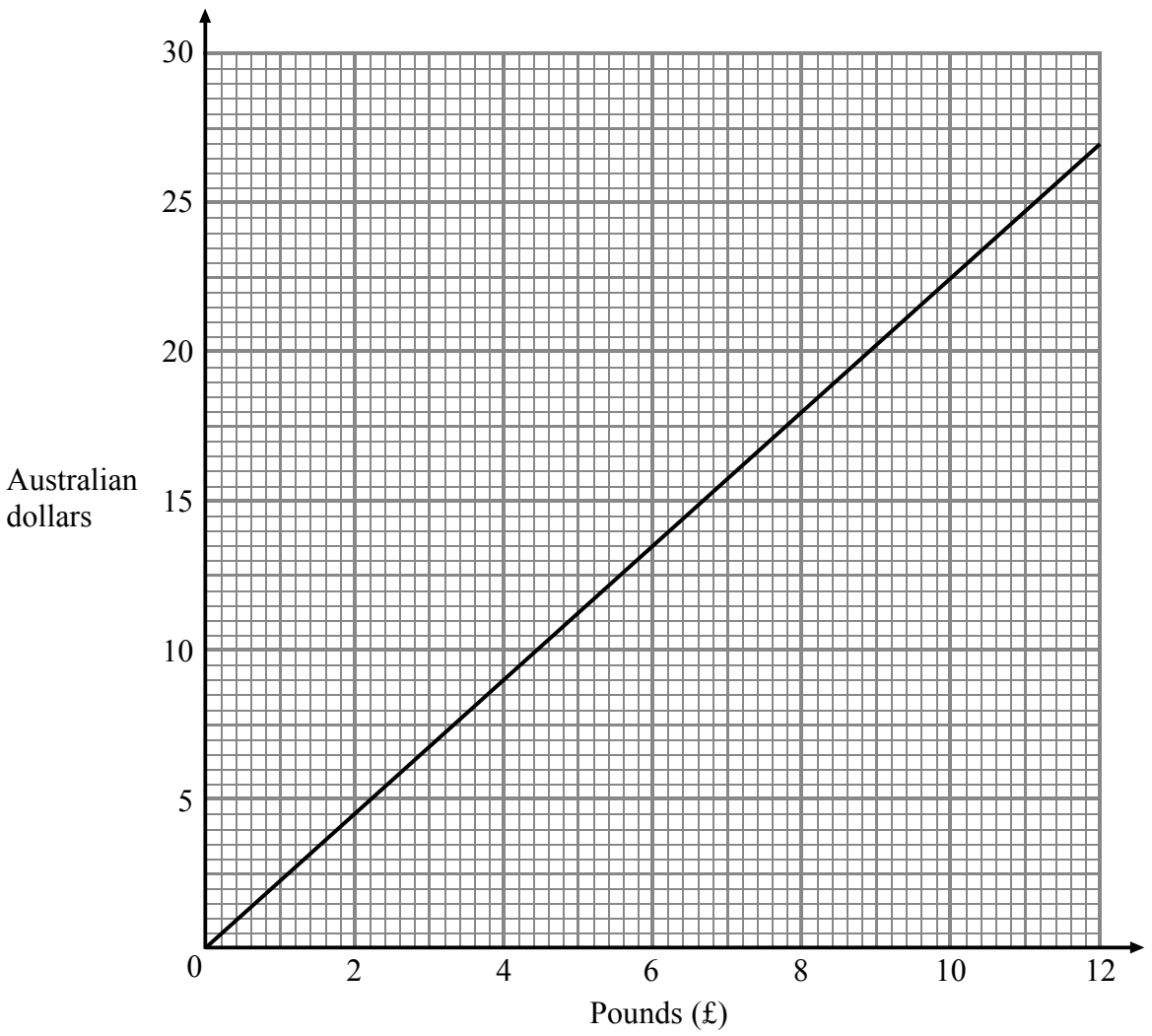
(1)

Q4

(Total 5 marks)

Leave blank

5. Here is a conversion graph between pounds (£) and Australian dollars.



(a) Change 20 Australian dollars to pounds.

£ .....

(1)

(b) Change £7 to Australian dollars.

..... Australian dollars

(1)

(c) Change £400 to Australian dollars.

..... Australian dollars

(2)

Q5

(Total 4 marks)

Turn over

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6.

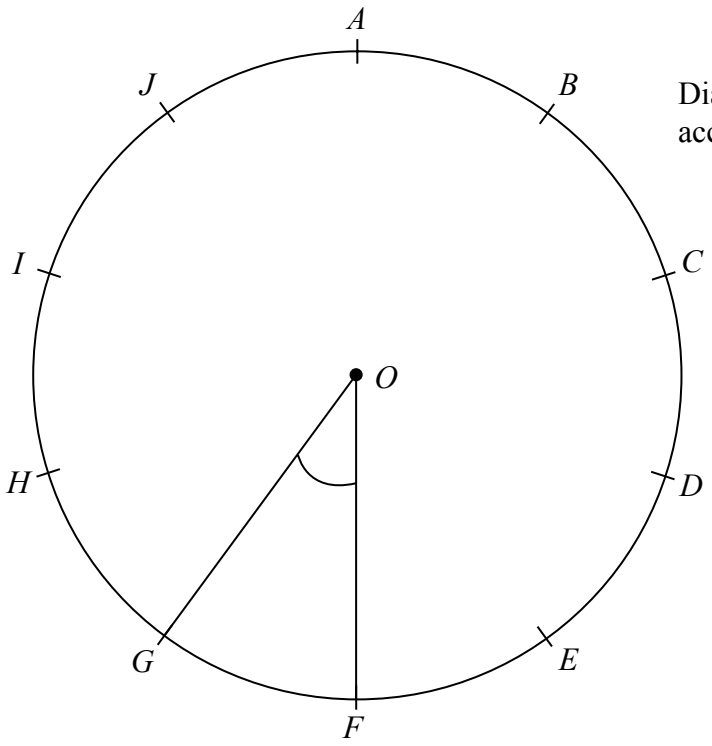


Diagram **NOT** accurately drawn

The diagram shows a circle centre O.

Ten points A, B, C, D, E, F, G, H, I and J are equally spaced around the circle.

(a) Work out the size of angle GOF.

..... °

(2)

(b) Work out the size of angle COE.

..... °

(1)

Q6

(Total 3 marks)

7. The size of each exterior angle of a regular polygon is 40°.

Work out the number of sides of the regular polygon.

.....

(Total 2 marks)

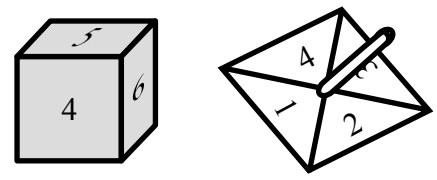
Q7

Leave blank

8. Joe rolls a 6-sided dice and spins a 4-sided spinner.

The dice is labelled 1, 2, 3, 4, 5, 6

The spinner is labelled 1, 2, 3, 4



Joe adds the score on the dice and the score on the spinner to get the total score.

He records the possible total scores in a table.

+	1	2	3	4	5	6
1	2	3	4	5	6	7
2	3					
3	4					
4	5					

(a) Complete the table of possible total scores.

(2)

(b) Write down all the ways in which Joe can get a total score of 5
One of them has been done for you.

(1, 4), ...

(2)

(c) Write down all the ways Joe can get a total score of 8 or more.

.....

(2)

Q8

(Total 6 marks)

N 2 9 1 0 9 A 0 9 2 0

Turn over

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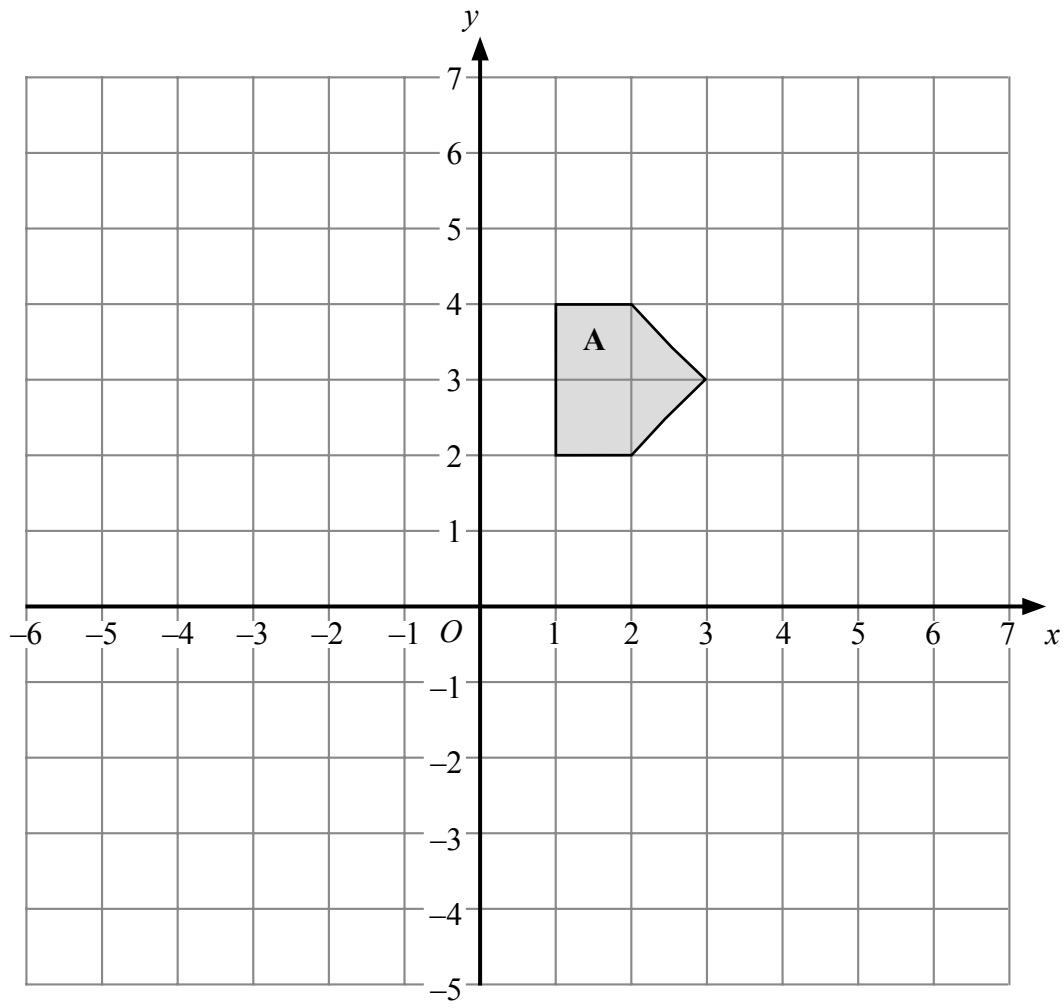
9.



(a) Reflect Shape **A** in the y axis.
Label your new shape **B**.

(2)

(b) Translate Shape **A** by the vector $\begin{pmatrix} 3 \\ -2 \end{pmatrix}$

Label your new shape **C**.

(2) **Q9**

(Total 4 marks)

N 2 9 1 0 9 A 0 1 0 2 0

Leave blank

10. The cost of hiring a car can be worked out using this rule.

Cost = £90 + 50p per mile

Bill hires a car and drives 80 miles.

(a) Work out the cost.

£ .....

(2)

The cost of hiring a car and driving m miles is C pounds.

(b) Complete the formula for C in terms of m.

C = ...

(2)

Zara hired a car.

The cost is £240

(c) How many miles did Zara drive?

..... miles

(3)

(Total 7 marks)

Q10

Leave blank

11.

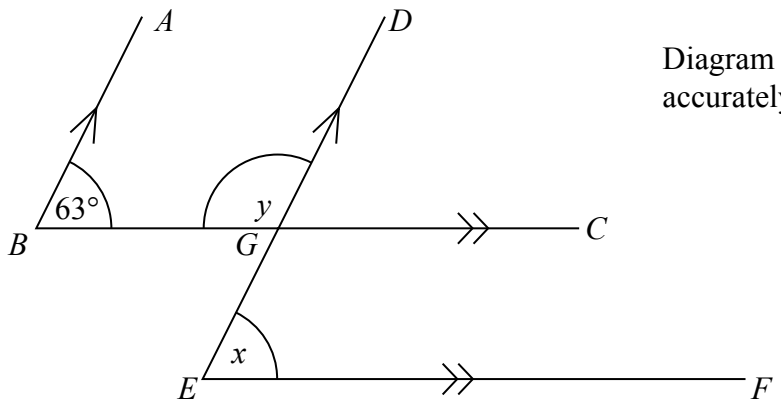


Diagram **NOT** accurately drawn

BA is parallel to *EGD*.
BGC is parallel to *EF*.
Angle *ABC* = 63°.

(a) (i) Find the size of angle *x*.

..... °

(ii) Give a reason for your answer.

.....

.....

(2)

(b) Work out the size of angle *y*.

..... °

(1)

Q11

(Total 3 marks)

Leave blank

12. Here are the first four terms of a number sequence.

2 7 12 17

(a) Work out the 10th term of this number sequence.

.....

(2)

Here are the first five terms of another number sequence.

– 4 – 1 2 5 8

(b) (i) Find, in terms of n, an expression for the nth term of this number sequence.

.....

(ii) Find **two** numbers that are in both number sequences.

.....

(3) **Q12**

(Total 5 marks)

13. Lillian, Max and Nazia share a sum of money in the ratio 2 : 3 : 5

(a) What fraction of the money does Max receive?

.....

(2)

Nazia receives £60

(b) Work out how much money Lillian receives.

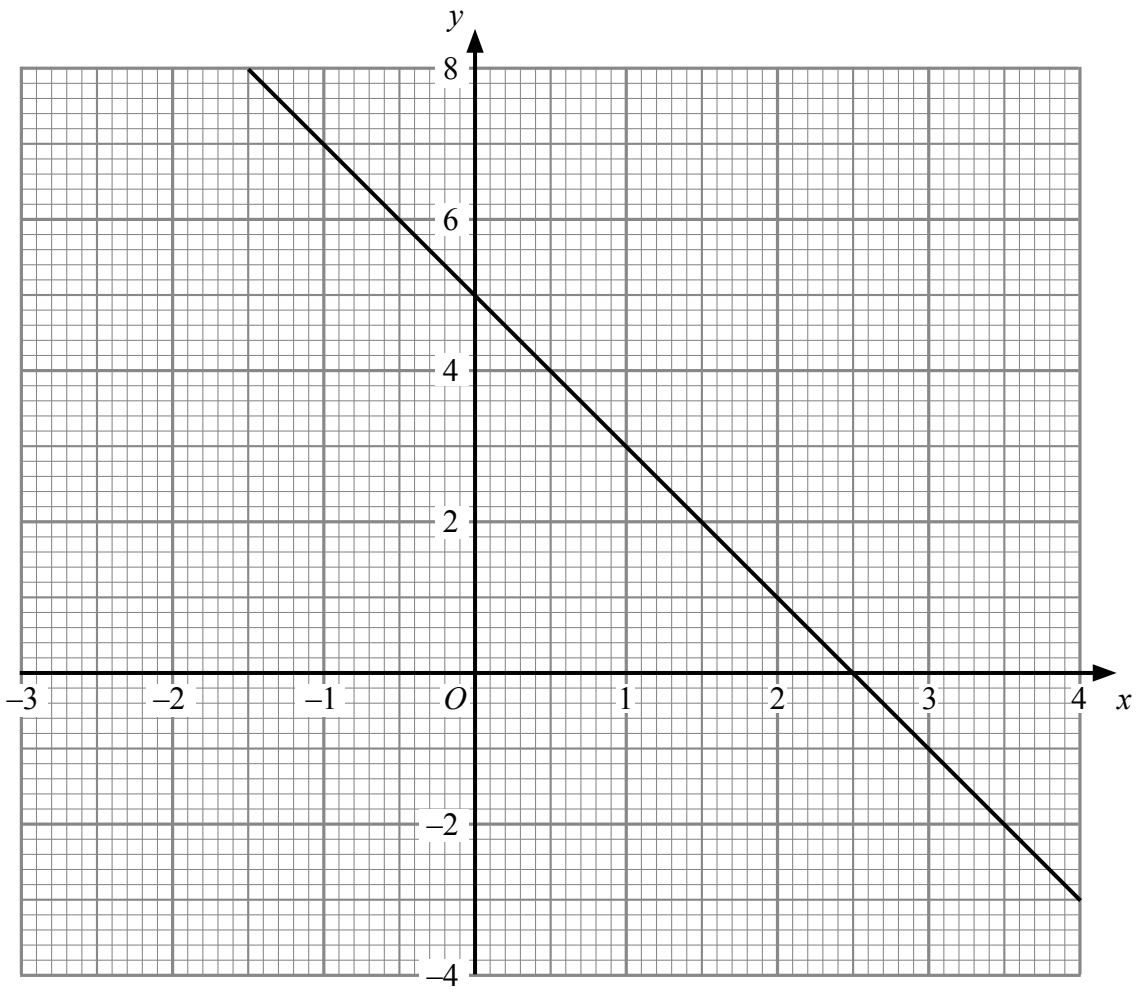
£ .....

(3) **Q13**

(Total 5 marks)

Leave blank

14. The straight line $y + 2x = 5$ has been drawn on the grid.



(a) Complete this table of values for $y = 2x - 1$

x	–1	0	1	2	3	4
y		–1		3	5	

(2)

(b) On the grid, draw the graph of $y = 2x - 1$

(2)

(c) Use your diagram to solve the simultaneous equations

$y + 2x = 5$

$y = 2x - 1$

$x =$ .....

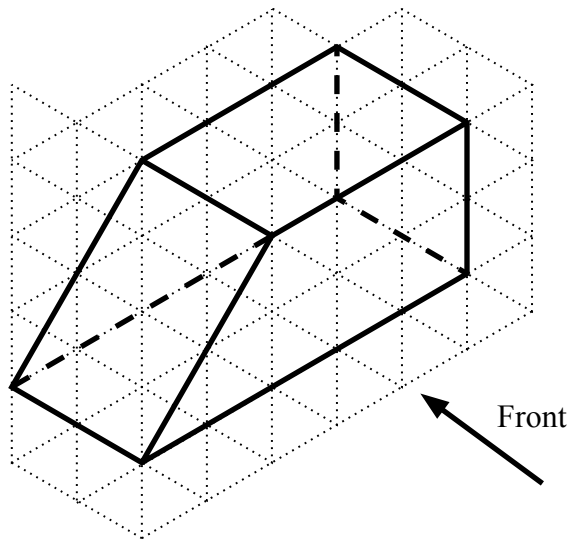
$y =$ **Q14**

(2)

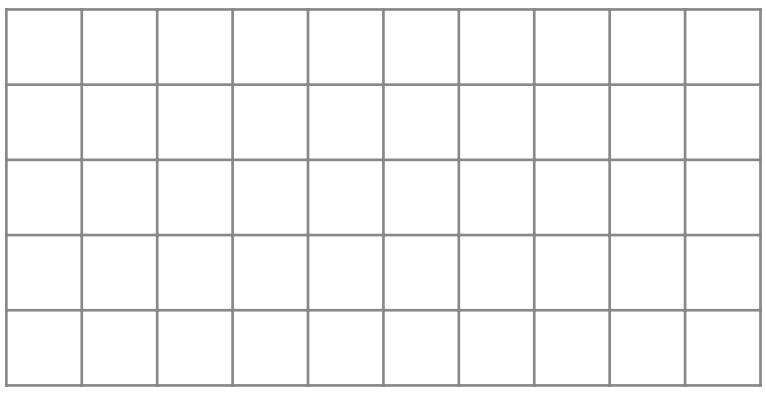
(Total 6 marks)

Leave blank

15. The diagram shows a prism drawn on a centimetre isometric grid.

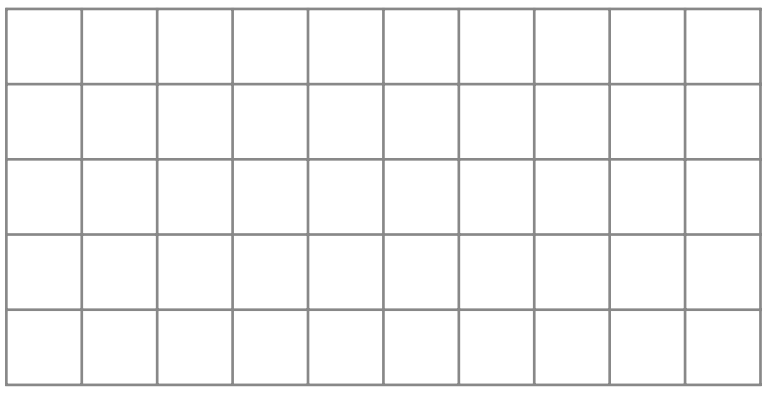


(a) On the centimetre grid, draw the front elevation of the prism from the direction marked by the arrow.



(2)

(b) On the centimetre grid draw a plan of the prism.

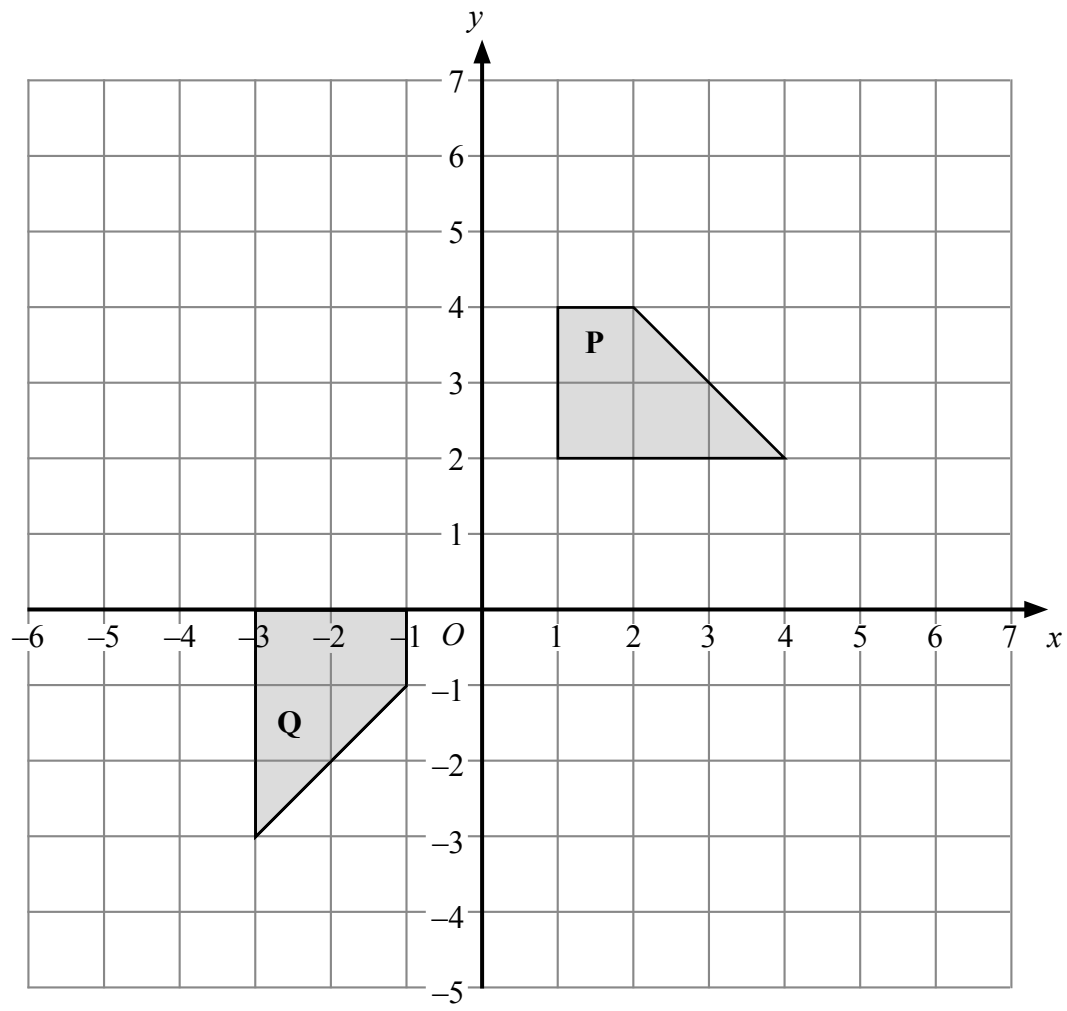


(2) **Q15**

(Total 4 marks)

Leave blank

16.



Describe fully the single transformation that will map shape **P** onto shape **Q**.

.....

.....

(Total 3 marks)

Q16

N 2 9 1 0 9 A 0 1 6 2 0

Leave blank

17. (a) Factorise $x^2 - 5x$

.....

(2)

(b) Factorise completely $3a^2 - 6a$

.....

(2)

(c) Make q the subject of the formula $P = 2q + 10$

q = ...

(2)

(d) Expand and simplify $(y + 3)(y - 4)$

.....

(2) **Q17**

(Total 8 marks)

N 2 9 1 0 9 A 0 1 7 2 0

Leave blank

18. A hotel has 56 guests.
35 of the guests are male.

(a) Work out 35 out of 56 as a percentage.

..... %
(2)

40% of the 35 male guests wear glasses.

(b) Write the number of male guests who wear glasses as a fraction of the 56 guests.
Give your answer in its simplest form.

.....
(4) **Q18**

(Total 6 marks)

19. (a) (i) Write 7900 in standard form.

.....

(ii) Write 0.00035 in standard form.

.....
(2)

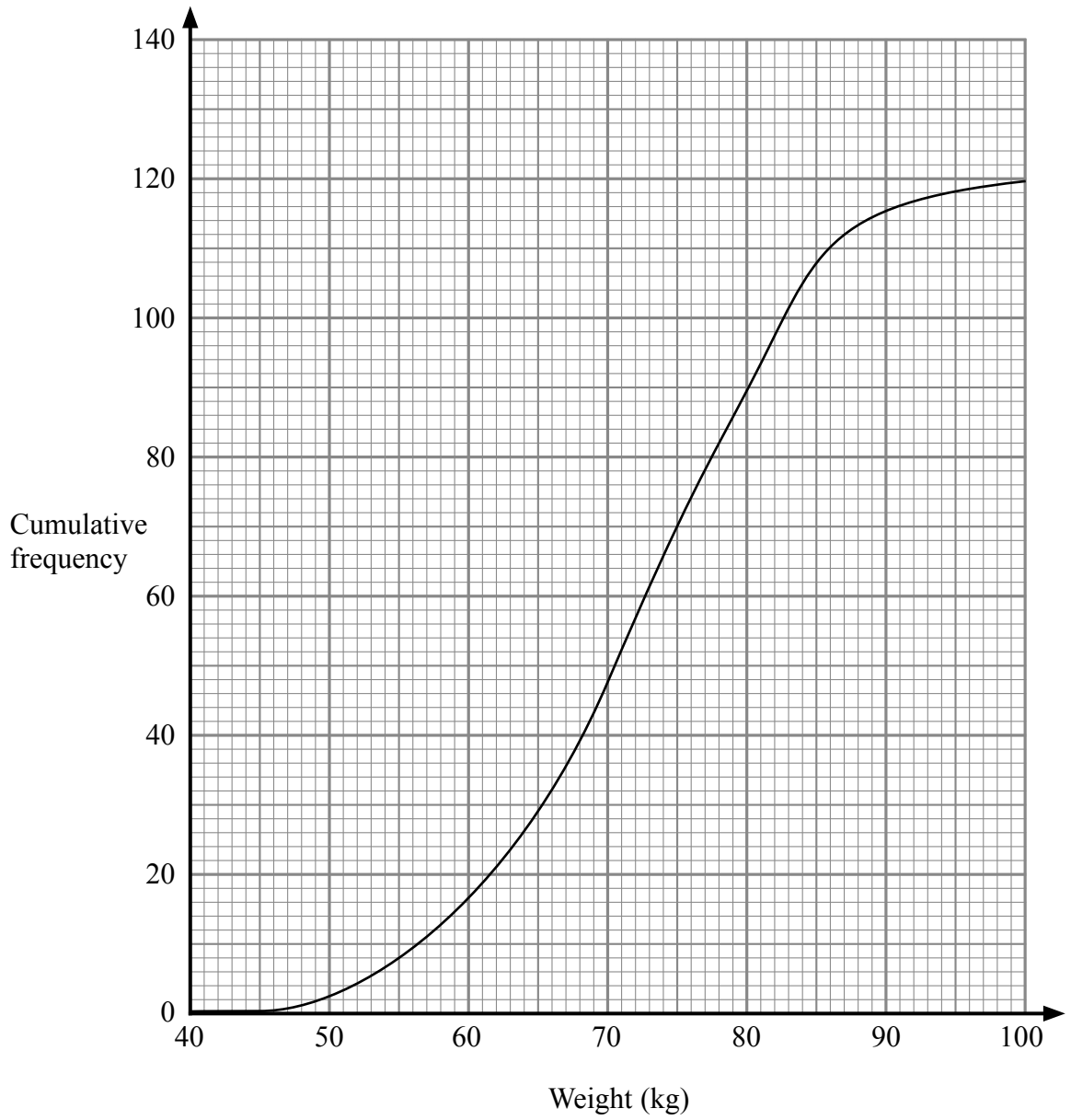
(b) Work out $\frac{4\times10^{3}}{8\times10^{-5}}$
Give your answer in standard form.

.....
(2) **Q19**

(Total 4 marks)

Leave blank

20. Here is the cumulative frequency curve of the weights of 120 girls at Mayfield Secondary School.



Use the cumulative frequency curve to find an estimate for the

(i) median weight,

..... kg

(ii) interquartile range of the weights.

..... kg

(Total 3 marks)

Q20

N 2 9 1 0 9 A 0 1 9 2 0

Turn over

Leave blank

21.

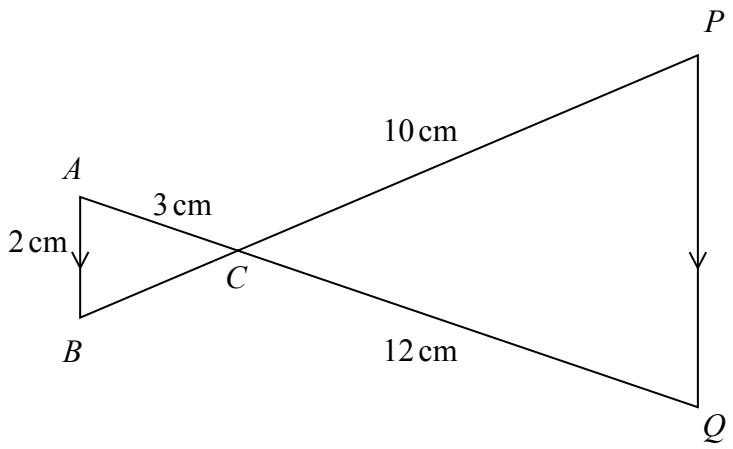


Diagram **NOT** accurately drawn

ACQ and *BCP* are straight lines.
AB is parallel to *PQ*.
AB = 2 cm.
AC = 3 cm.
CQ = 12 cm.
CP = 10 cm.

(a) Work out the length of *PQ*.

..... cm
(2)

(b) Work out the length of *BP*.

..... cm
(3) **Q21**

(Total 5 marks)

TOTAL FOR PAPER: 100 MARKS

END