

Answer all TWENTY TWO questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

- 1 The point A has coordinates $(5, -4)$
The point B has coordinates $(13, 1)$
- (a) Work out the coordinates of the midpoint of AB .

(.....,)
(2)

Line L has equation $y = 2 - 3x$

- (b) Write down the gradient of line L .

.....
(1)

Line L has equation $y = 2 - 3x$

- (c) Does the point with coordinates $(100, -302)$ lie on line L ?
You must give a reason for your answer.

.....
.....
.....
(1)

(Total for Question 1 is 4 marks)



2 Find the lowest common multiple (LCM) of 28 and 105

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(Total for Question 2 is 2 marks)



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3 The diagram shows a shape.

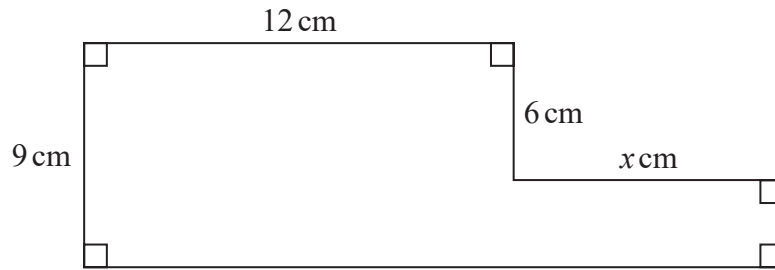


Diagram **NOT** accurately drawn

The shape has area 129 cm^2

Work out the value of x .

$x = \dots\dots\dots$

(Total for Question 3 is 4 marks)



4 The table shows information about the weights, in kilograms, of 40 babies.

Weight (w kg)	Frequency
$2 < w \leq 3$	12
$3 < w \leq 4$	16
$4 < w \leq 5$	9
$5 < w \leq 6$	2
$6 < w \leq 7$	1

(a) Write down the modal class.

.....
(1)

(b) Work out an estimate for the mean weight of the 40 babies.

..... kg
(4)

One of the 40 babies is going to be chosen at random.

(c) Find the probability that this baby has a weight of more than 5 kg.

.....
(2)

(Total for Question 4 is 7 marks)



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5 120 children go on an activity holiday.
The ratio of the number of girls to the number of boys is 3 : 5

On Sunday, all the children either go sailing or go climbing.

$\frac{16}{25}$ of the boys go climbing.

Twice as many girls go sailing as go climbing.

Work out how many children go sailing on Sunday.

.....
(Total for Question 5 is 6 marks)



6 (a) Write 7.8×10^{-4} as an ordinary number.

.....
(1)

(b) Work out $\frac{5.6 \times 10^4 + 7 \times 10^3}{2.8 \times 10^{-3}}$

Give your answer in standard form.

.....
(2)

(Total for Question 6 is 3 marks)

7 (a) Expand and simplify $(m - 8)(m + 5)$

.....
(2)

(b) Factorise fully $5y + 20y^2$

.....
(2)



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(c) Simplify $(p^2 + 3)^0$

.....
(1)

(d) Solve $3(2x - 5) = \frac{9 - x}{2}$

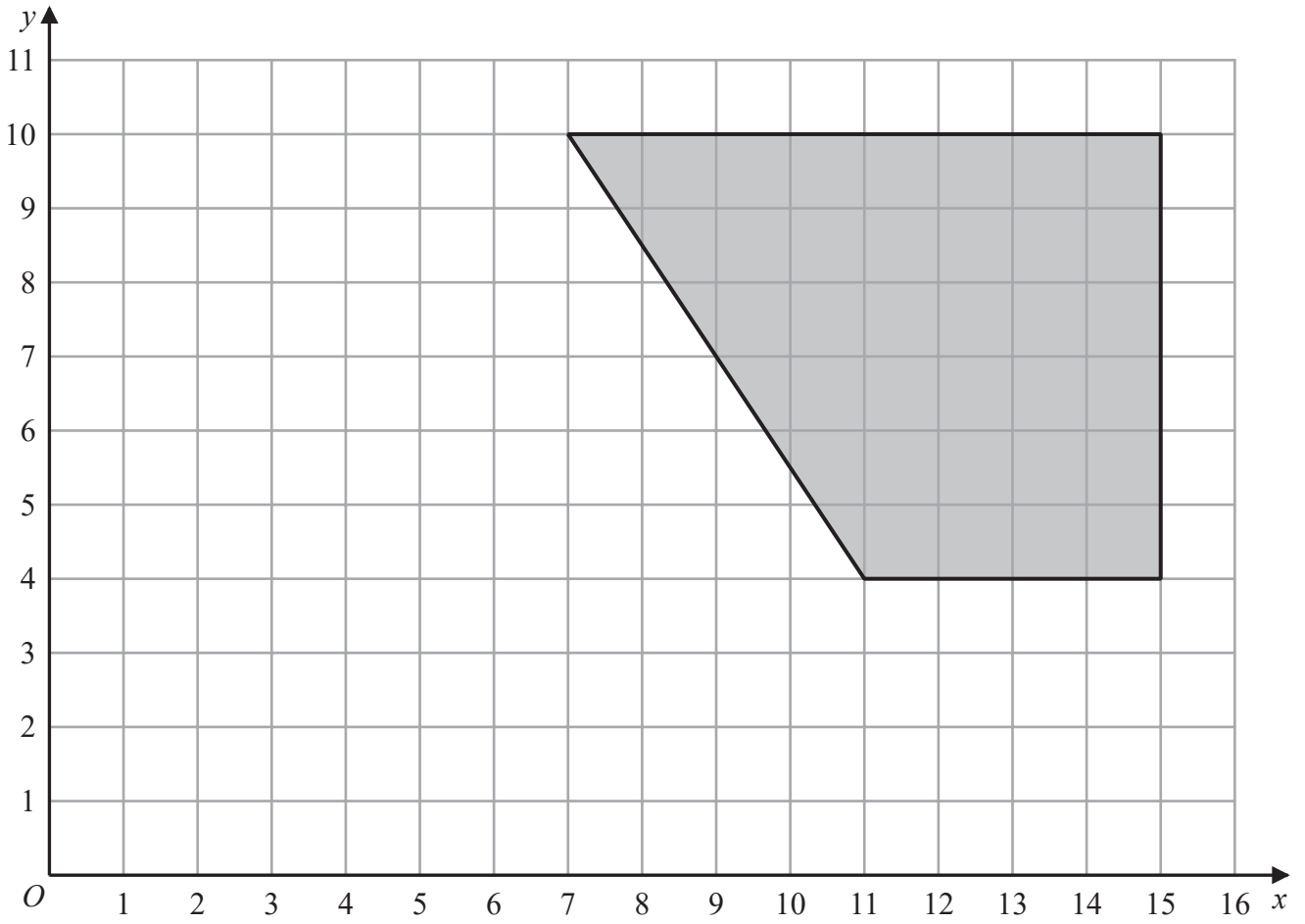
Show clear algebraic working.

$x =$
(4)

(Total for Question 7 is 9 marks)



8



On the grid, enlarge the shaded shape with scale factor $\frac{1}{2}$ and centre (1, 2)

(Total for Question 8 is 2 marks)

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9 Here is a right-angled triangle.

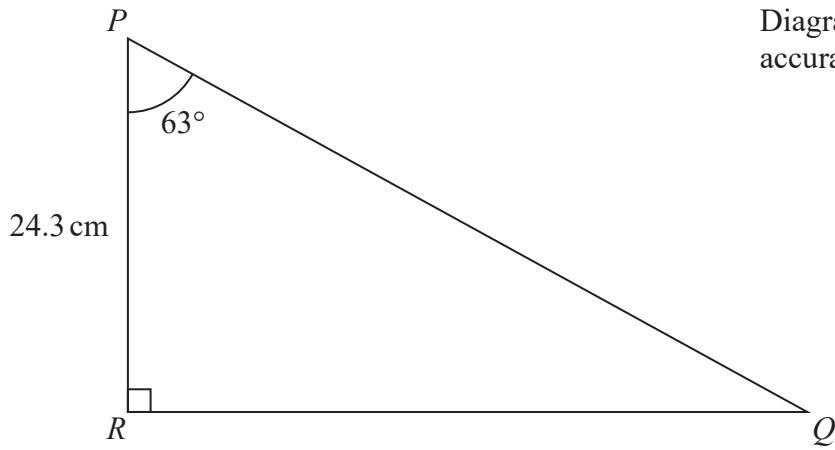


Diagram **NOT** accurately drawn

Calculate the length of PQ .
Give your answer correct to 3 significant figures.

..... cm

(Total for Question 9 is 3 marks)



P 5 9 7 5 6 A 0 1 1 2 8