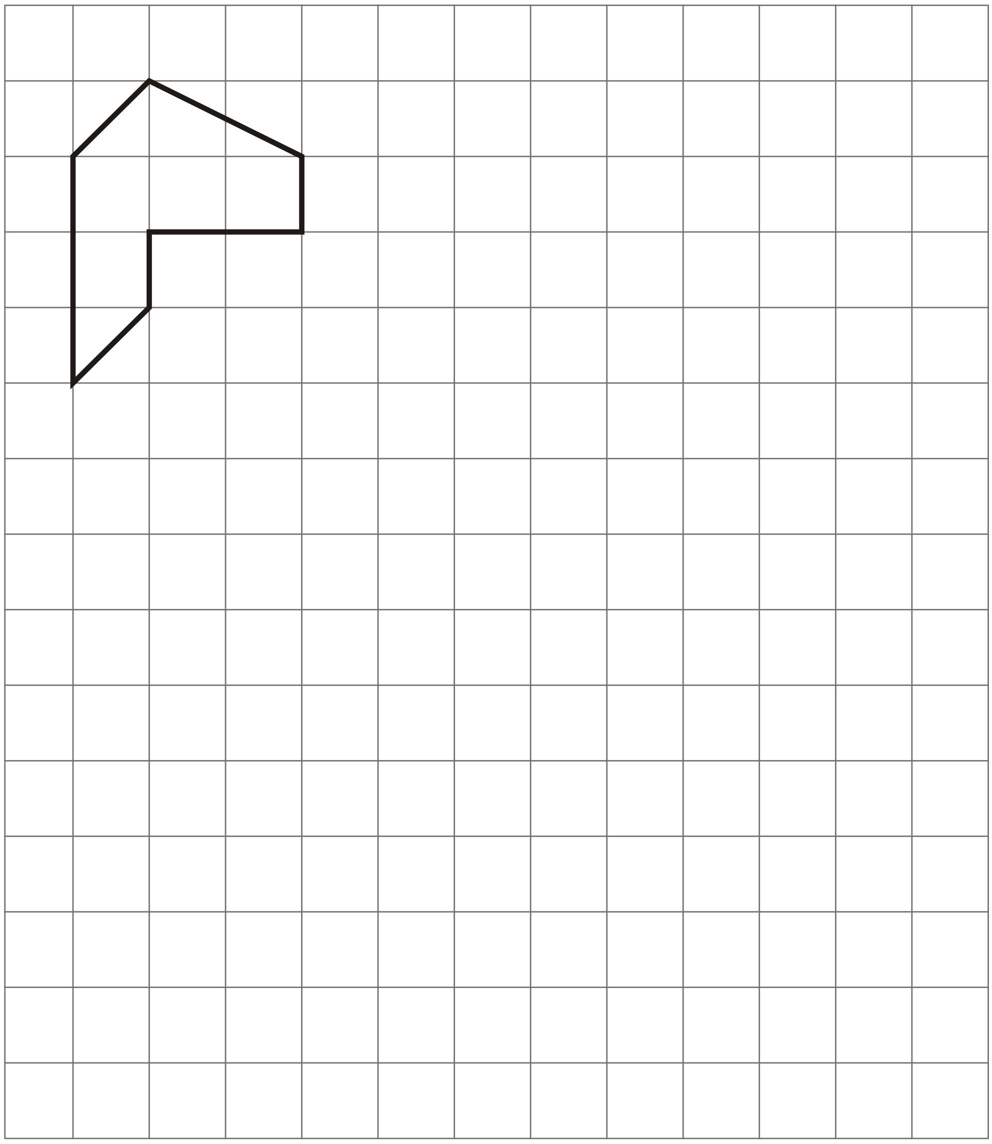
1. A shape has been drawn on a grid of centimetre squares.

(a) Work out the area of the shape.
State the units with your answer.

……………………..

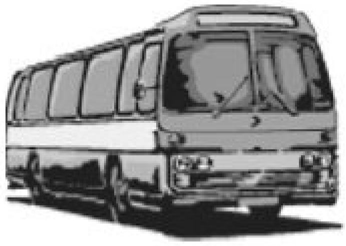
(3)

(b) On the grid, enlarge the shape with a scale factor of 2.



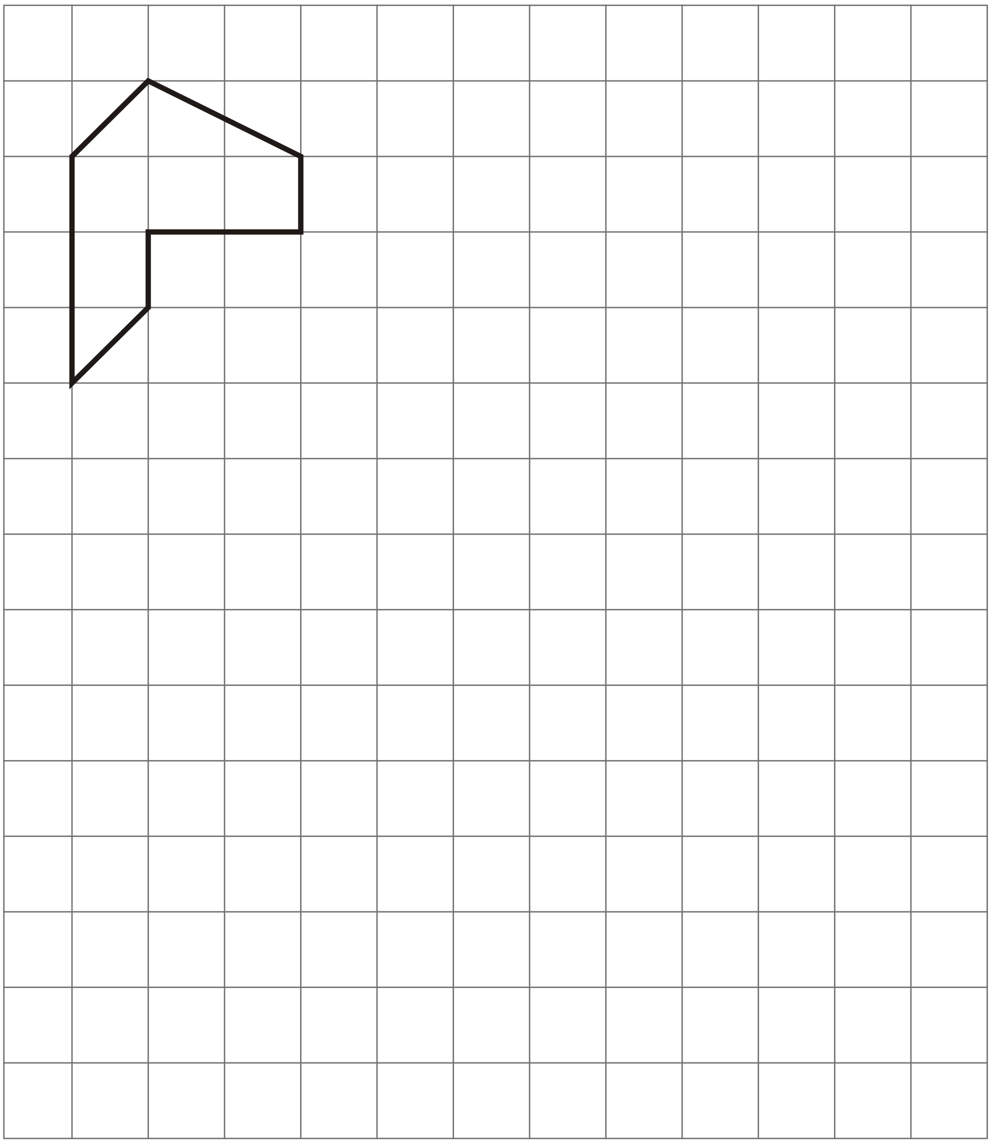
(2)
(Total 5 marks)

2. The length of a coach is 15 metres.
Jonathan makes a model of the coach.
He uses a scale of 1:24
Work out the length, in centimetres, of the model coach.



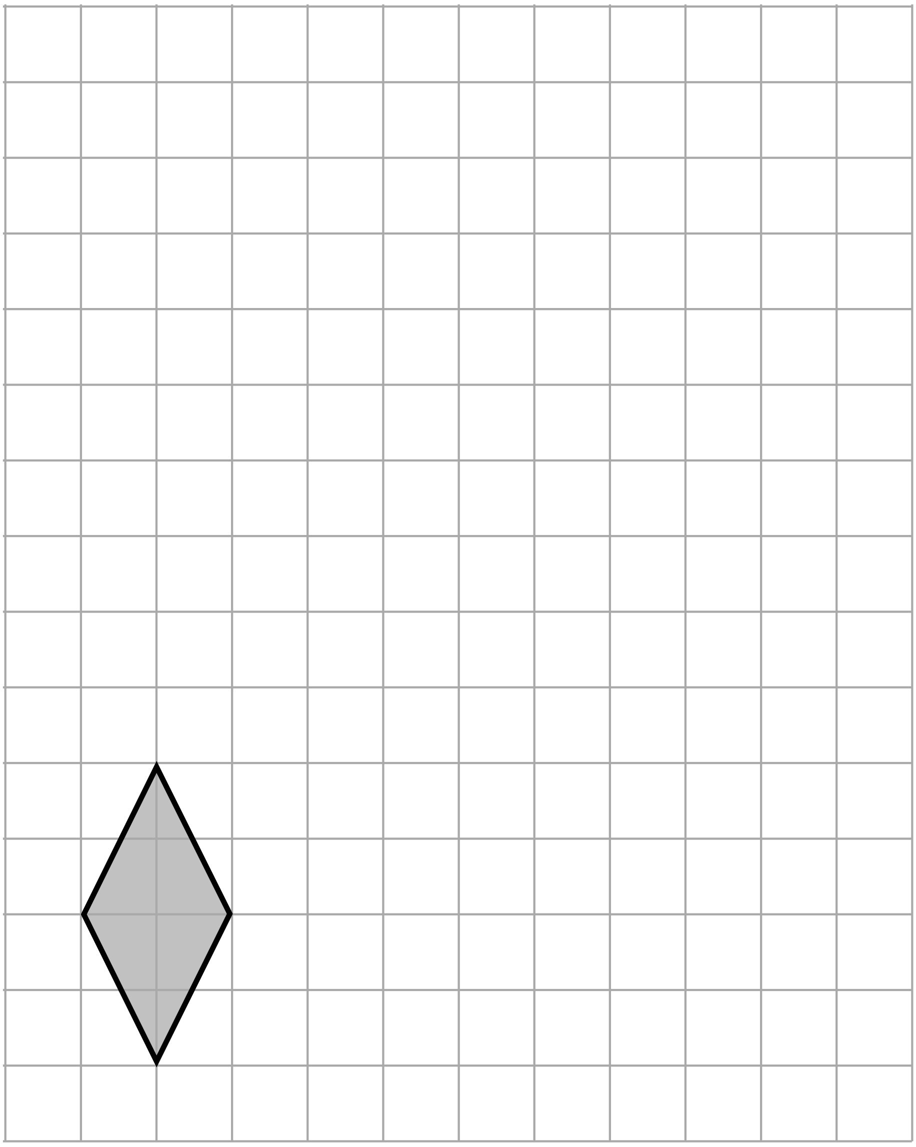
…………………cm
(Total 2 marks)

3. On the grid, enlarge the shape with a scale factor of 2.



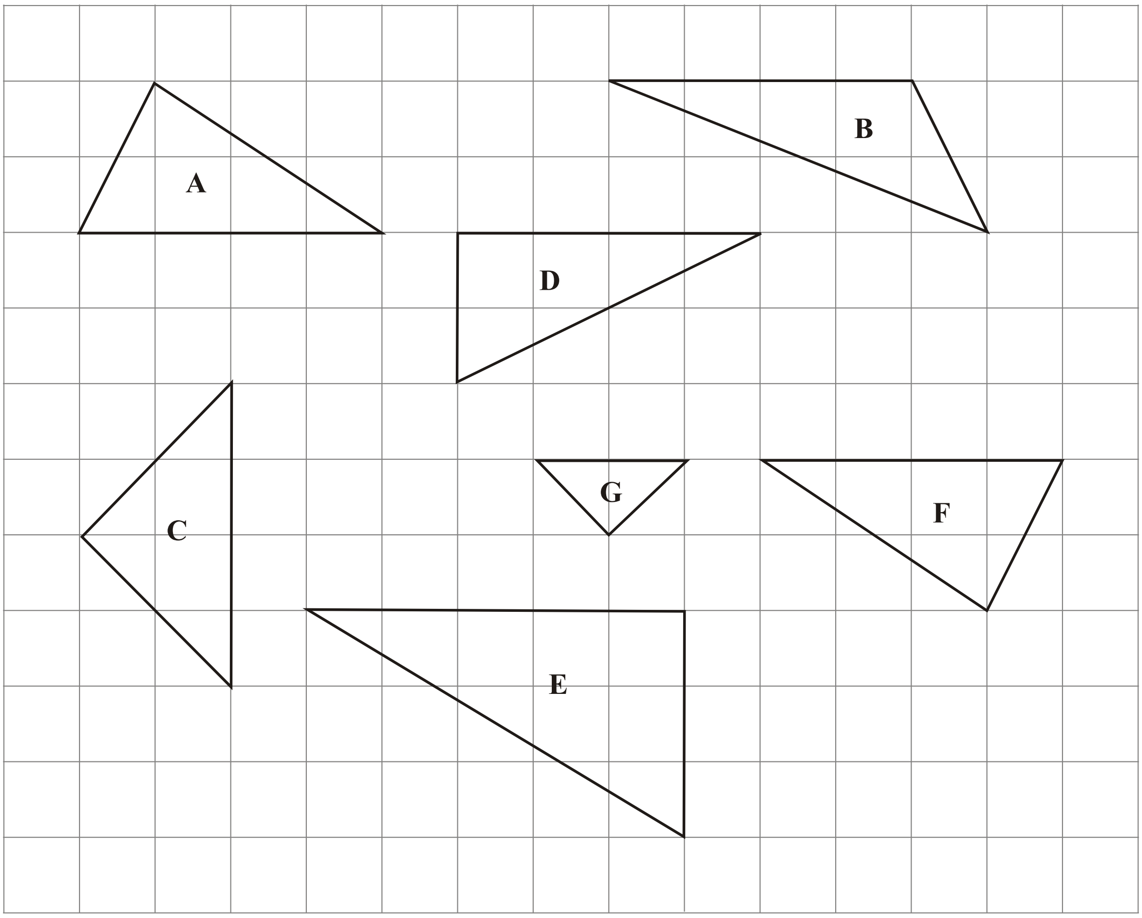
(Total 2 marks)

4. On the grid, draw an enlargement of the shaded shape with a scale factor of 3



(Total 2 marks)

5.



(a) Write down the letter of an isosceles triangle.

....

(1)

(b) Write down the letters of **two** triangles which are congruent.

.... and ....

(1)

Triangle **C** is an enlargement of triangle **G**.

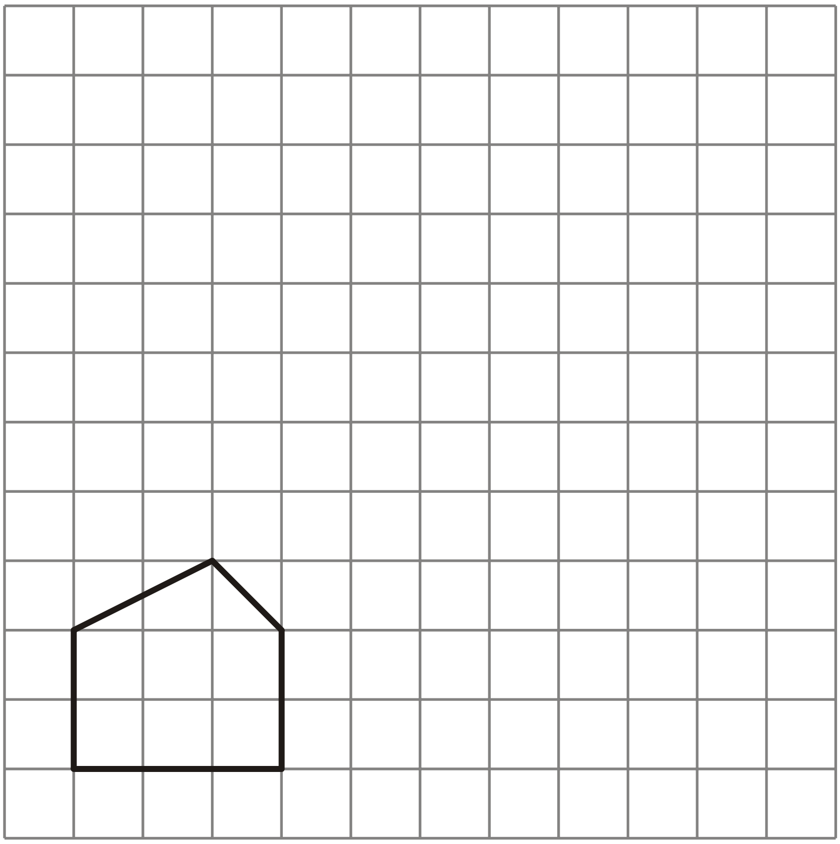
(c) Write down the scale factor of this enlargement.

....

(1)

(Total 3 marks)

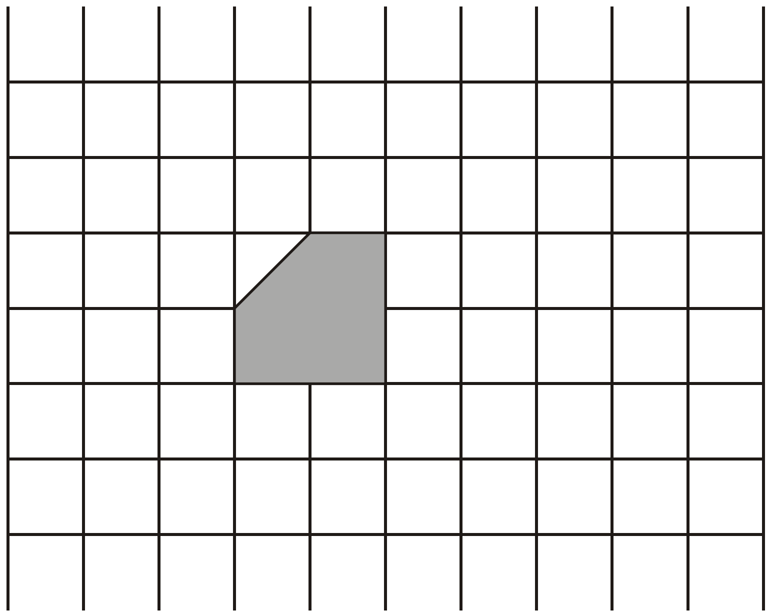
6.



On the grid, enlarge the shape with a scale factor of 2

(Total 2 marks)

7.



(a) Translate the shaded shape 3 squares to the right and 2 squares up.

(1)

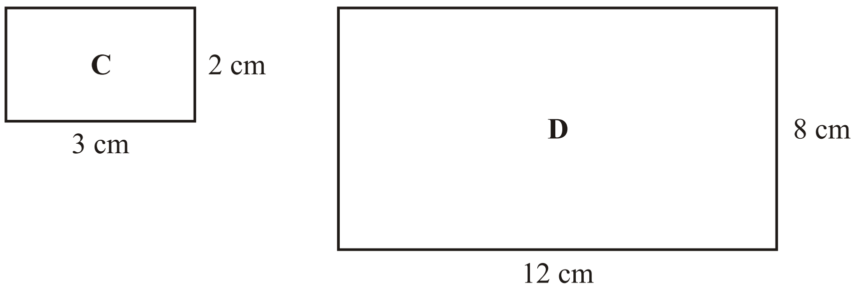


Diagram **NOT** accurately drawn

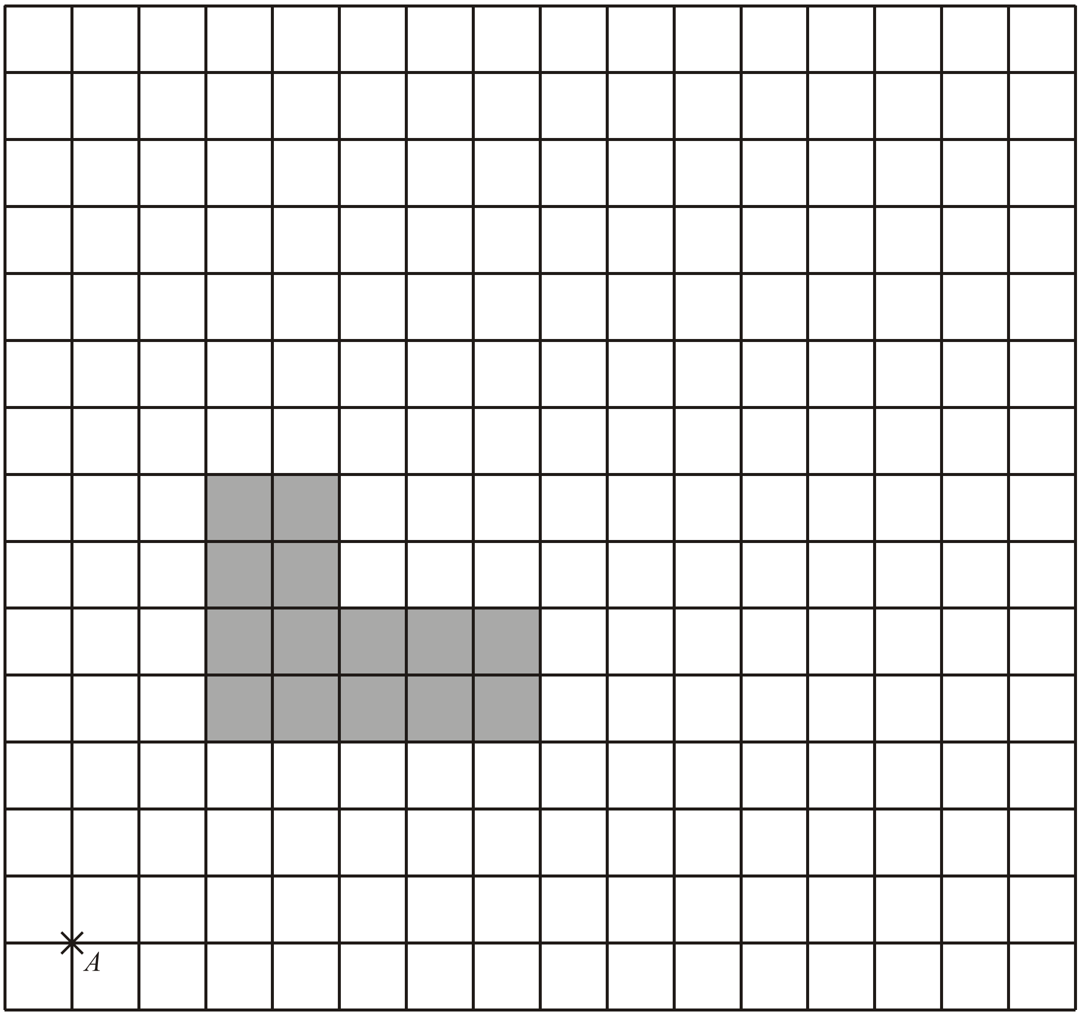
Rectangle **D** is an enlargement of rectangle **C**.

(b) Find the scale factor of the enlargement.

....

(1)
(Total 2 marks)

8.



This is a grid of centimetre squares.

(a) Write down the perimeter of the shaded shape.

....

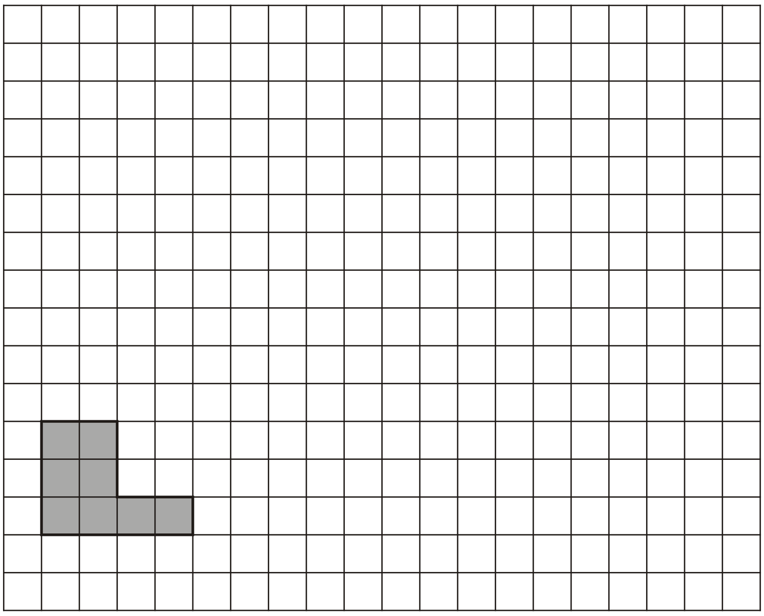
(2)

(b) On the grid, enlarge the shaded shape by a scale factor of 2, centre A.

(3)

(Total 5 marks)

9.



On the grid, draw an enlargement, scale factor 3, of the shaded shape.

(Total 2 marks)

10. Here are two trapeziums.

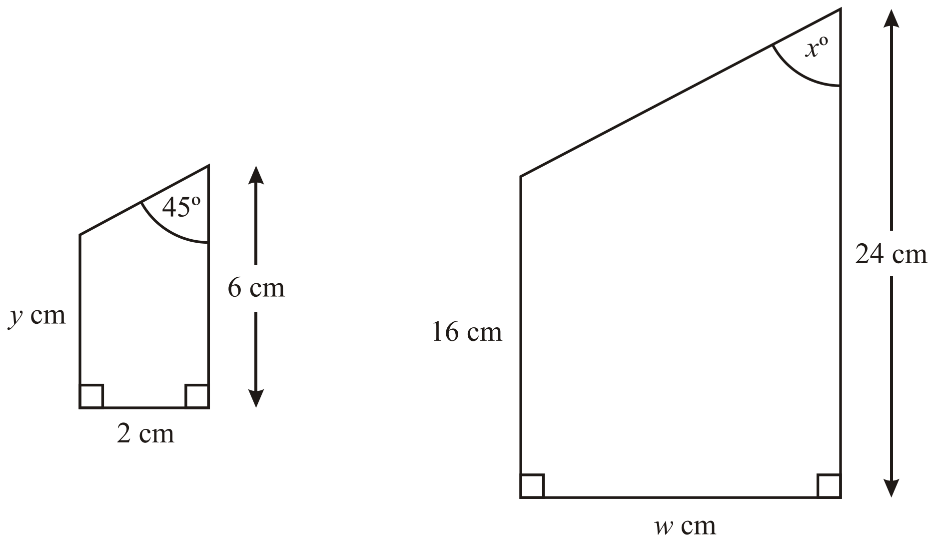


Diagram **NOT** accurately drawn

The big trapezium is an enlargement of the small trapezium with a scale factor of 4.

(a) Find the value of

(i) w,

w = ………………

(ii) x,

x = ………………

(iii) y.

y = ………………

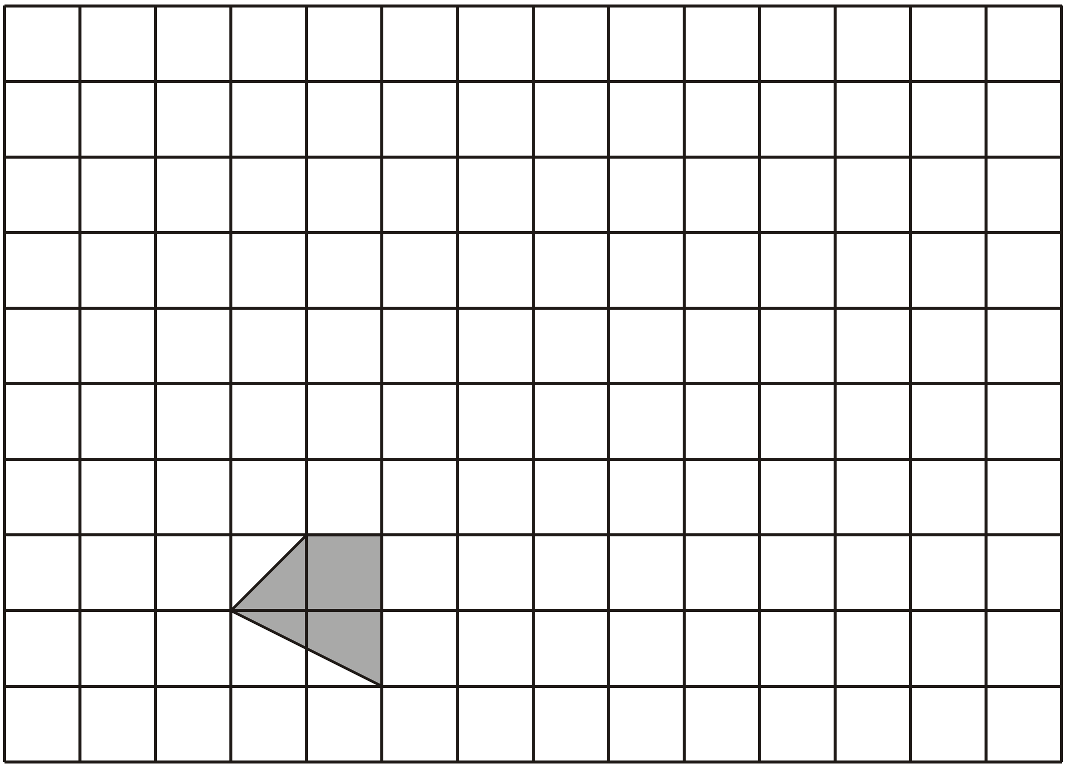
(3)

(b) Work out the area of the big trapezium.

…..……………… cm^2

(2)
(Total 5 marks)

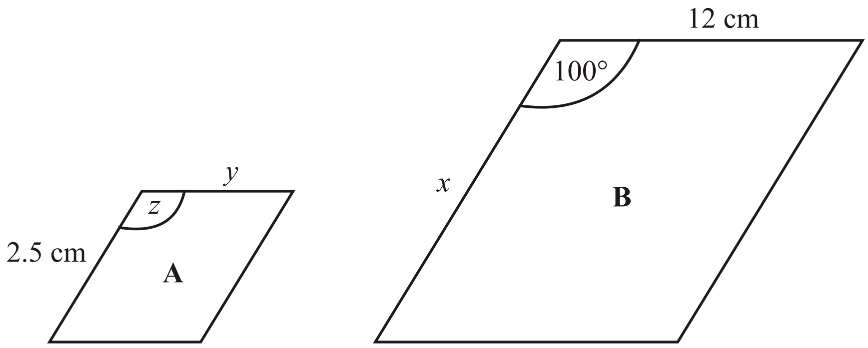
11.



Draw an enlargement, scale factor 3, of the shaded shape.

(Total 2 marks)

12.



Diagrams **NOT** accurately drawn

Parallelogram **B** is an enlargement of parallelogram **A**.
The scale factor of the enlargement is 3.

(a) Find the length of the side marked x.

x = ... cm

(1)

(b) Find the length of the side marked y.

y = ... cm

(1)

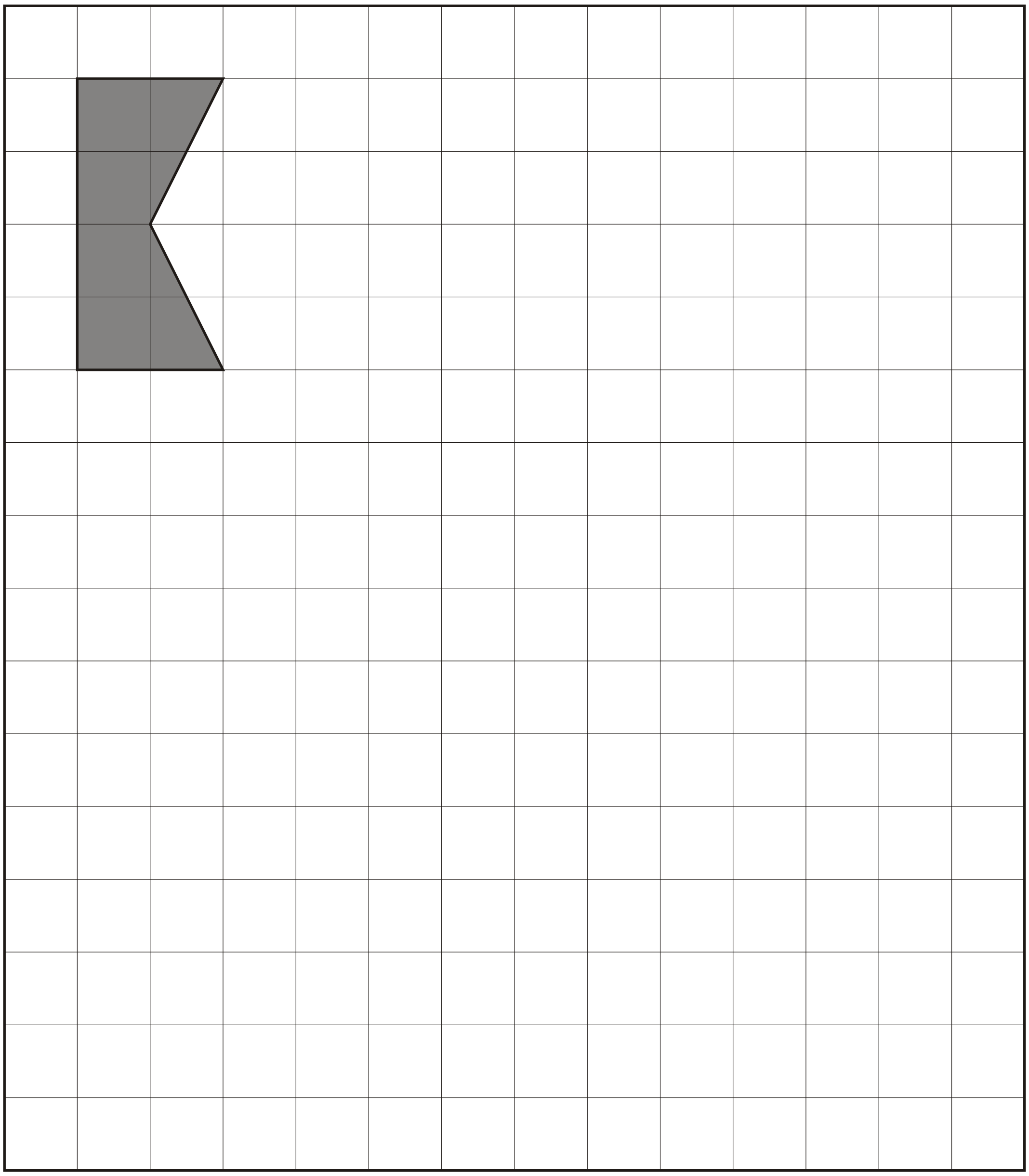
(c) Find the size of the angle marked z.

z = ... °

(1)

(Total 3 marks)

13.



On the grid, draw an enlargement of the shape with a scale factor of 2.

(Total 2 marks)

1. (a) 6 cm^2 3

B2 for 6 cao for numerical answer
(B1 for 5.5 < Area ≤ 7)
then B1 (indep) for cm^2 with or without numerical answer

(b) Correct shape 2

See diagram

B2 (B1 for any 2 sides correct or a correct enlargement scale factor ≠ 1 or 2)

[5]

2. 62.5 2

15 ÷ 24

M1 for 15 ÷ 24 or 1500 ÷ 24 or sight of digits 625
A1 cao

[2]

3. Correct shape 2

B2
B1 for any 2 sides correct, or a correct enlargement scale factor ≠ 1 or 2.

[2]

4. Correct shape 2

B2 (B1 for any one side correct, or all correct but scale factor other than 1 or 3)
Tolerance; to within half square.

[2]

5. (a) C or G 1

B1 at least one of C or G (no extras)

(b) A and F 1

B1 cao

(c) 2 1

B1 (accept –2)

[3]

6. (Enlargement) 2

B2 cao

(B1 for 2 lines correct, or correct enlargement sf 3))

[2]

7.	(a)	3 right, 2 up		2	
			B1		
	(b)	4			
			B1		
					[2]

8.	(a)	18 cm		2	
			B1 for 18 *B1 (indep) for cm*		
	(b)			3	
			B3 for fully correct answer *(B2 for correct enlargement in wrong position)* *(B1 for any 3 correctly enlarged lines)*		
					[5]

9.	enlarged shape		2	
		B2 *(B1 for 3 lines correct)*		
				[2]

10.	(a)	(i)	8		3	
				B1 cao		
		(ii)	45			
				B1 cao		
		(iii)	4			
				B1 cao		
	(b)	160			2	
		(24 + 16) ÷ 2 ×"8"				
				M1 for valid method that could lead to a correct answer *(ie 20 ×"8")* *A1 ft from (a) (i)*		
						[5]

11. 2

B2 cao (tolerance of ± 2 mm on each side)
(B1 for 2 correct sides)
(sc. B1 For an enlargement an scale factor n (n > 1, n ≠ 3)

[2]

12. (a) 7.5 1

B1

(b) 4 1

B1

(c) 100 1

B1

[3]

13. Sides of 4, 8, 4, $2\sqrt{5}, 2\sqrt{5}$ 2

B2 for a correct enlargement
(B1 for 2 sides correct or for a correct enlargement by a different scale factor, other than 1)

[2]

1. In part (a), many candidates gave the right answer, 6, for the numerical value and, when units were given, they were usually correct.
Most candidates attempted the enlargement in part (b) and many scored either both marks for a completely correct drawing or one mark for a drawing in which at least two sides were the correct length. In the latter case, though, responses varied from those who narrowly missed full marks to those who, possibly more by luck than judgement, had just two sides correct., often either the two shorter sloping sides or the two shorter vertical sides. There were some attempts to enlarge by a scale factor of 3 and reflections also appeared but neither of these was common.
A variety of methods was used. Some drew construction lines, which was generally successful, but most just doubled the lengths, based on the grid squares, and the majority of shapes were neatly drawn using a ruler. Occasionally, candidates made more than one drawing, giving the examiner a choice of answers. It is not in candidates' interests to do this, as the mark they are awarded will be that for the poorest answer.

2. **Foundation Tier**

This was one of the least successfully answered questions on the paper with only 4% of candidates gaining any marks. Correct answers were given by 2% of candidates; evidence of correct method was given by another 2% of candidates. Many candidates read “1:24” as meaning a scale factor of 1.24. Others simply converted 15 metres to centimetres and left this as their answer.

Intermediate Tier

Surprisingly, this question was answered very poorly with only one fifth of candidates gaining full marks. The most common error was for 15 to be multiplied by 24, leading to an answer of 360. Some candidates added 1 and 24 together and then divided by 25 as if sharing in a given ratio. Converting the length from metres to centimetres was a problem for some candidates.

3. **Specification A**

There were many correct responses to this question, with many earning one mark for having two correct sides. The diagonal lines presented most of the errors.

Specification B

Most candidates succeeded in scoring at least one mark for correctly enlarging at least two of the seven sides. Enlarging the diagonals was the main error made. One mark could also be gained for a correct enlargement of scale factor greater than 2, this was considered a misread; a few candidates benefited from this.

4. Though a relatively simple enlargement, candidates had trouble drawing the required shape accurately. The grid was not always used to help produce the enlargement. It was not uncommon to see shapes drawn to a scale factor of 2 or 4. The majority of the candidates gained full marks.

5. The terms “isosceles” and “congruent” are clearly not well understood. The first two parts of this question were answered correctly by about 25% and 35% of candidates respectively. Some candidates identified similar or right-angled triangles in part (b).

The scale factor was given correctly by only about one in four candidates. A common incorrect answer seen was “3”.However a significant number of candidates did not answer this part of the question.

6. This question was generally well answered with most candidates scoring at least one mark and around 63% of the candidates scoring both marks. Of those who gained one mark for correctly enlarging at least two of the sides this was usually for the two vertical sides. A common error was to make the length of the base 5 units instead of 6 or make the roof only one square high.

7. Candidates frequently misunderstood the idea of translating 3 squares to the right. From the answers given it appeared to be understood as 'miss 3 squares to the right' which in effect became '5 squares to the right'.
Part (b) also produced few correct answers with ×3 and 96 (or 12 × 8) being the most popular incorrect answers.

8. 14 was the most common response to (a). An indication of the units being used was rarely indicated.
An enlargement by a scale factor of two was dealt with successfully by most candidates but the idea of using point *A* as the centre of enlargement was rarely understood. Many interpreted the centre *A* as being the point where the bottom left hand corner of the enlarged shape was to be placed.

9. There were many fully correct enlargements using a scale factor of three, accurately drawn using a ruler. For others it did look like more practice was needed in dealing with this type of question. Others doubled the length of each line.

10. All three parts of (a) were often correct but, if an error was made, it was usually in part (ii) where 180 appeared frequently. 64 was seen on occasions in part (iii). Over 90% of candidates scored 2 or more marks in (a).
Part (b) was less well done, a third scoring one or two marks. Use of the given formula often led to correct substitution but inaccurate calculation was not uncommon. Greater success was achieved by those choosing to split the trapezium into a rectangle and a triangle and then summing the parts. A variety of answers appeared regularly, including 48 (16 + 8 + 24), 192 (8 × 24), 128 (8 × 16) and 3072 (8 × 16 × 24). Candidates making arithmetic errors could still gain credit by making their method clear.

11. While there were many correct enlargements, a substantial number of attempts scored 1 mark for two correct lengths. A significant number of candidates enlarged the given shape with a scale factor of 2; this was awarded 1 mark; however a scale factor of 1 received no marks.

12. Part (a) was well answered. Errors were usually a result of inaccurate arithmetic after stating the intention to multiply 2.5 by 3. In part (b) a correct answer of 4cm was most common however a significant number of candidates gave 3 as their answer. Part (c) was less successful with 33.3 (100 ÷ 3) being the predictable error.

13. Very few candidates failed to score well here, with many gaining full marks for a correct enlargement. A few candidates used a scale factor other than 2 (and 1), and if correct gained one mark.