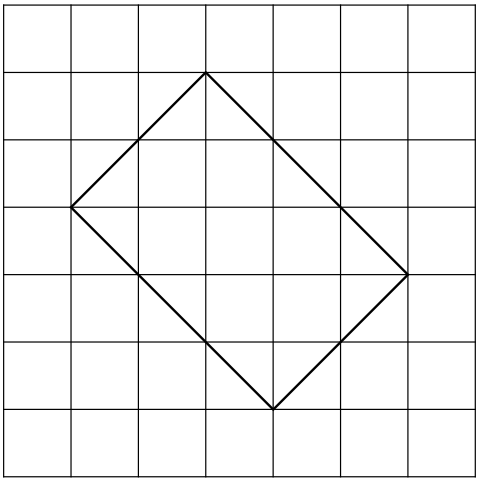
Transformations Revision

PM

1. (a) This quadrilateral has **exactly** two lines of symmetry.



(i) Draw the lines of symmetry on the diagram.

(1)

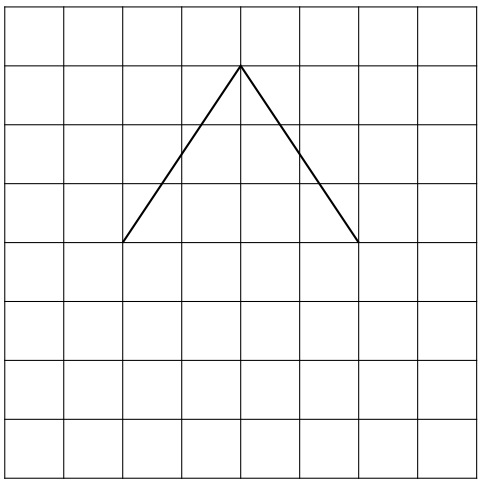
(ii) Write down the name of this type of quadrilateral.

Answer .....

(1)

(b) A different type of quadrilateral also has **exactly** two lines of symmetry.

(i) Complete this quadrilateral on the grid below.



(1)

(ii) Write down the name of this type of quadrilateral.

Answer .....

(1)

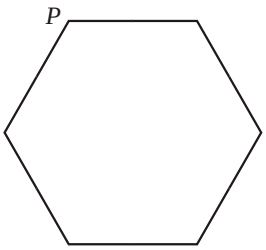
(c) Write down **one** difference between the quadrilaterals in parts (a) and (b).

.....

(1)

(Total 5 marks)

2. (a) A regular hexagon is drawn below.



(i) Draw the line of symmetry which passes through the point *P*.

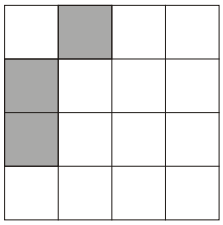
(1)

(ii) How many lines of symmetry does a regular hexagon have?

Answer .....

(1)

(b) Three small squares are shaded in the diagram.

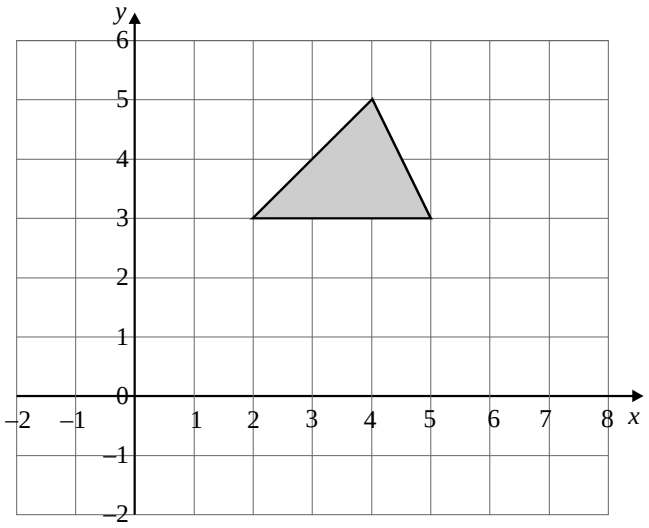


Shade in three more small squares to make a pattern with rotational symmetry of order 2.

(2)

(Total 4 marks)

3.



(a) Draw the line $y = 2$ on the grid above.

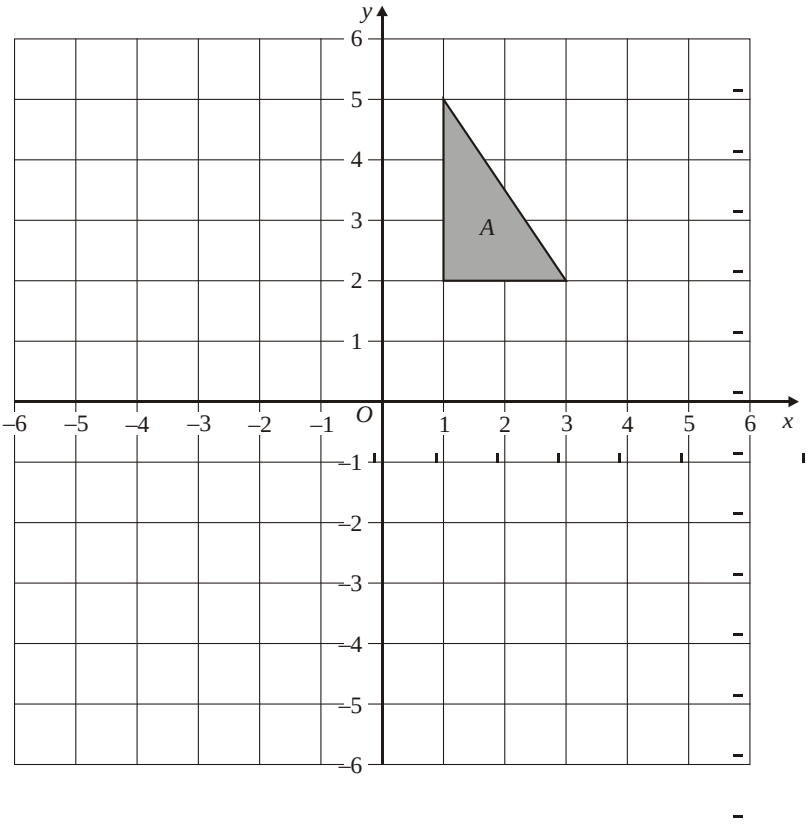
(1)

(b) Reflect the shaded triangle in the line $y = 2$.

(1)

(Total 2 marks)

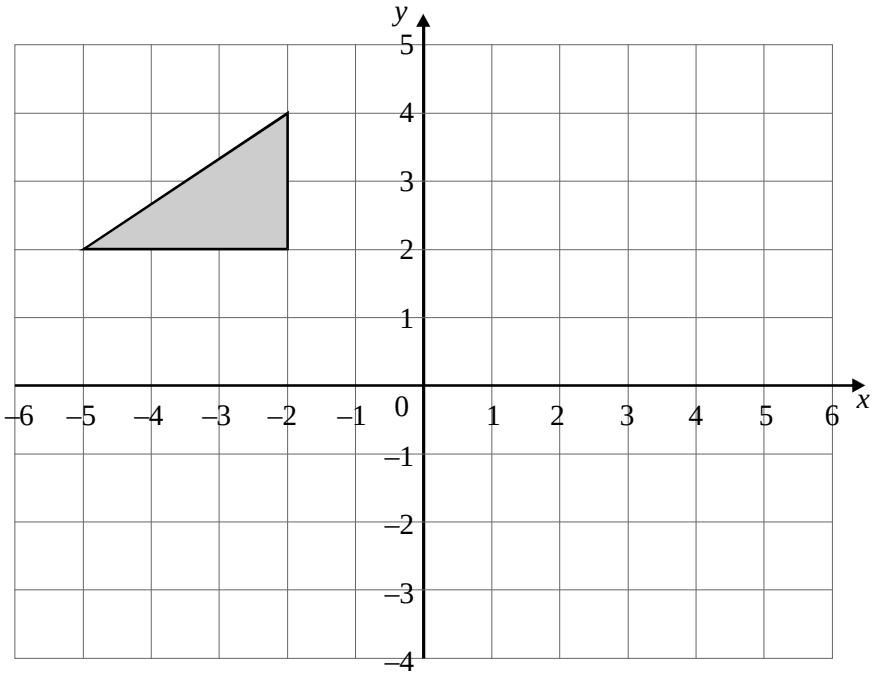
4. Triangle *A* has vertices (1,2), (1,5) and (3,2).



Draw the new position of triangle *A* after a rotation of 90° clockwise about the origin.

(Total 3 marks)

5.



(a) Translate the shaded triangle by the vector $\begin{pmatrix} 5 \\ -4 \end{pmatrix}$ Label this triangle C.

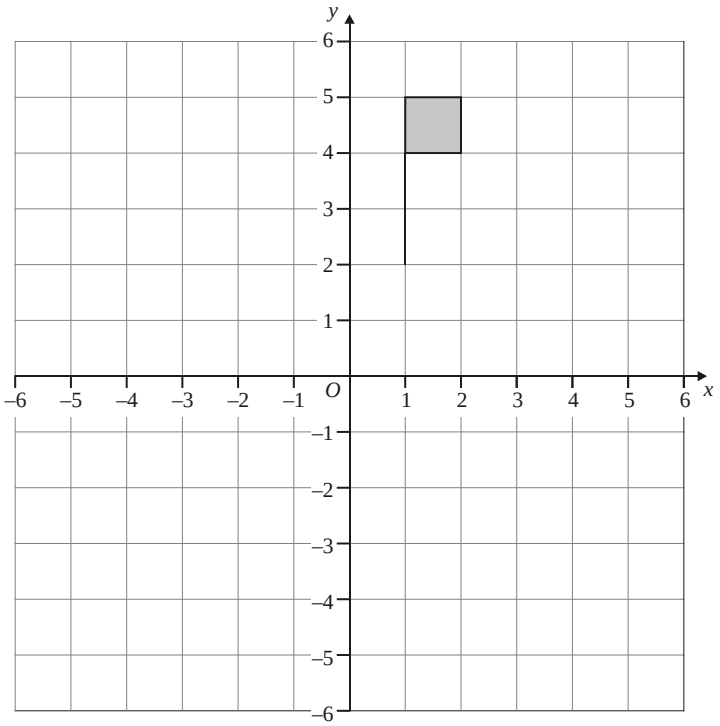
(2)

(b) Rotate the shaded triangle through 90° clockwise about (–1, 1) Label this triangle D.

(2)

(Total 4 marks)

6. The diagram shows a shaded flag.



(a) Rotate the shaded flag 90° anticlockwise about the origin.
Label this new flag with the letter *A*.

(3)

(b) Reflect the original shaded flag in the line $y = 1$.
Label this new flag with the letter *B*.

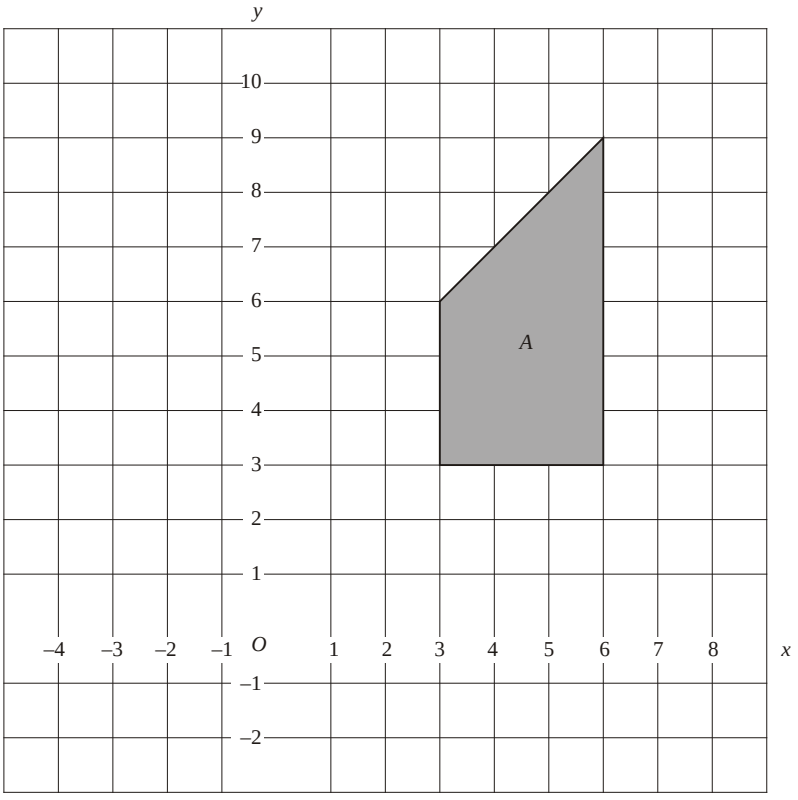
(2)

(c) Rotate the original shaded flag by a quarter-turn clockwise about (0, 2).
Label this new flag with the letter *C*.

(2)

(Total 7 marks)

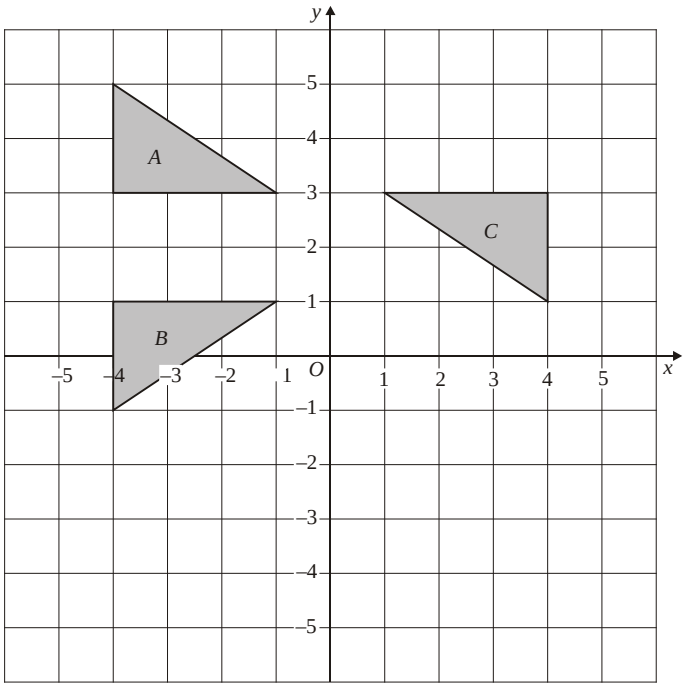
7. The diagram shows shape *A*.



Draw the enlargement of shape *A* with scale factor $\frac{1}{3}$ and centre of enlargement (0,0).

(Total 2 marks)

8.



(a) Describe fully the **single** transformation which takes triangle *A* onto triangle *B*.

.....

.....

(2)

(b) Triangle *A* is rotated onto triangle *C*.

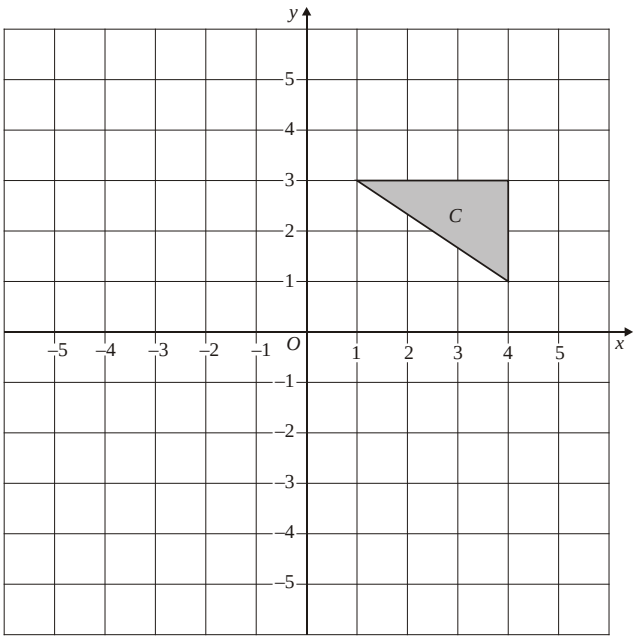
(i) Write down the angle of rotation. Answer ..... degrees

(1)

(ii) Write down the coordinates of the centre of rotation. Answer (..... , ...)

(1)

(c)

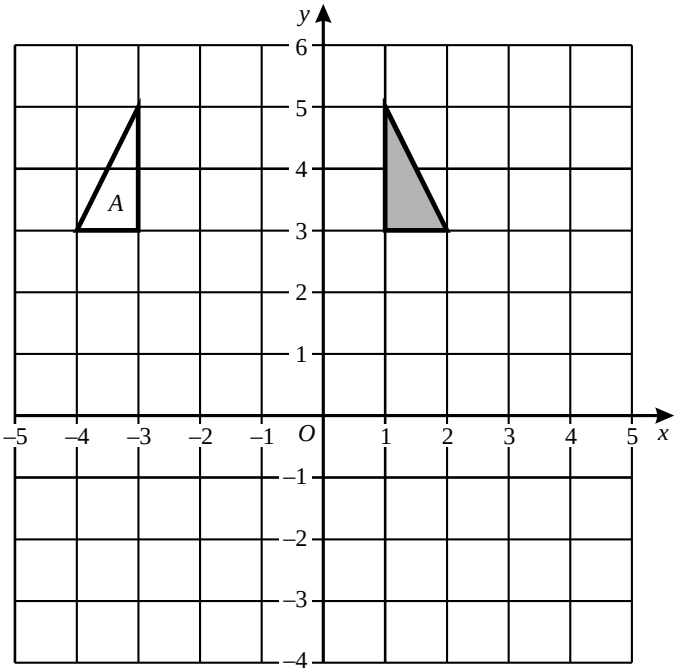


Triangle *C* is translated by the vector $\begin{pmatrix} 1 \\ -4 \end{pmatrix}$ Draw the new position of triangle *C*.

(2)

(Total 6 marks)

9. (a)



i) Describe fully the **single** transformation that takes the shaded triangle to triangle *A*.

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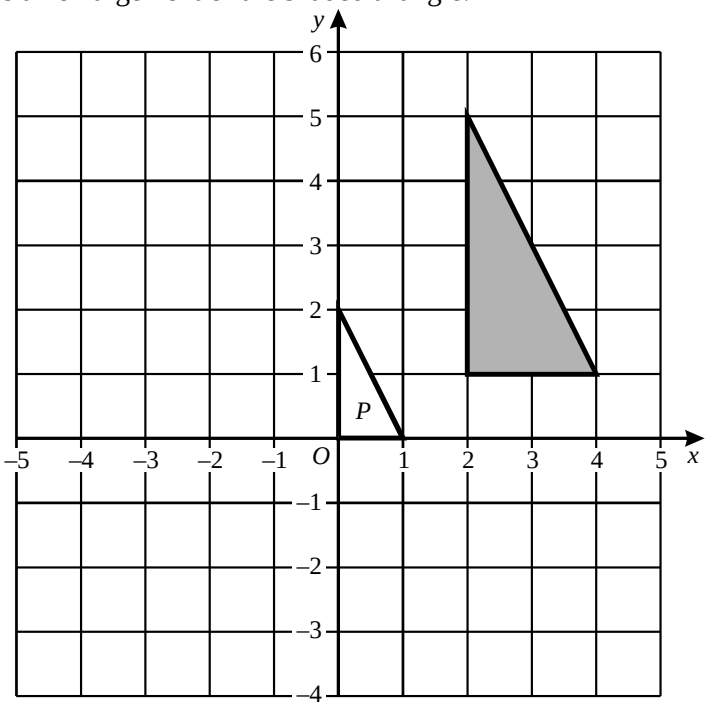
.....

(2)

(ii) On the grid above translate the **shaded** triangle by 2 squares to the right and 4 squares down.

(1)

(b) Triangle P is an enlargement of the shaded triangle.



(i) What is the scale factor of the enlargement? Answer .....

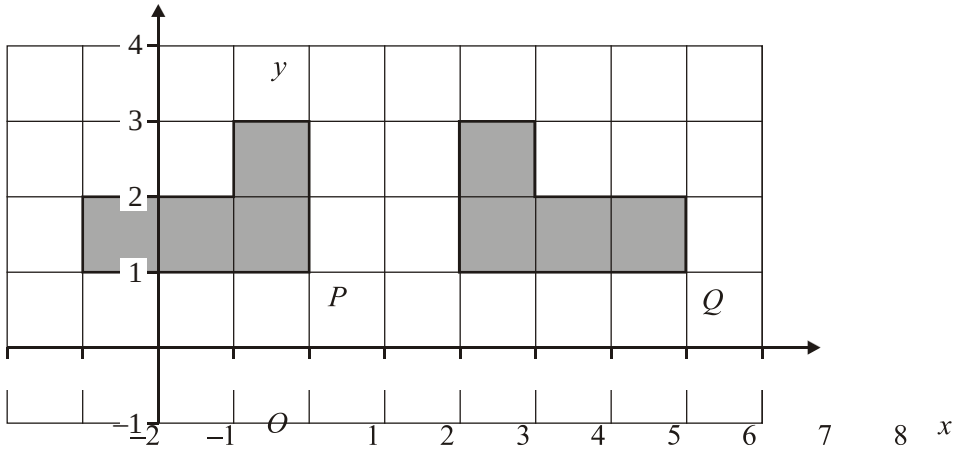
(1)

(ii) What is the centre of enlargement? Answer (..... , ...)

(1)

(Total 5 marks)

10. (a) The diagram shows two shapes *P* and *Q*.



Describe fully the **single** transformation which takes shape *P* to shape *Q*.

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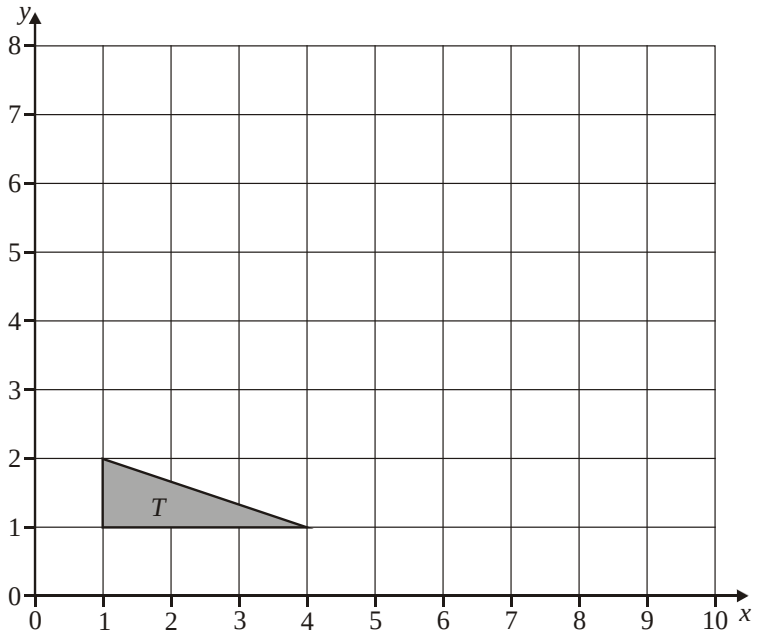
(2)

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

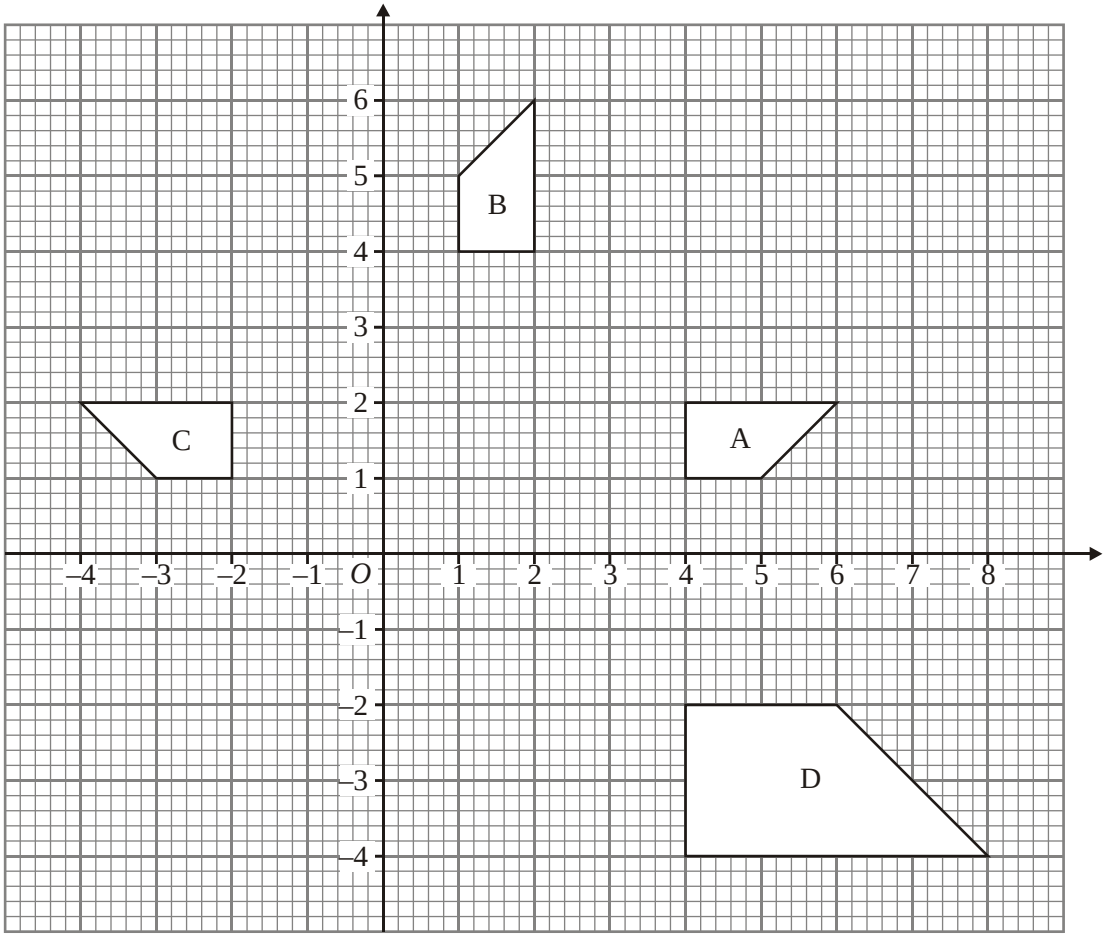


Enlarge triangle *T* by scale factor 2, with (0,0) as the centre of enlargement.

(3)

(Total 5 marks)

11. The diagram shows four shapes, A, B, C and D.



(a) Describe fully the single transformation that takes shape A onto shape B.

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(2)

(b) Describe fully the single transformation that takes shape B onto shape C.

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(3)

(Total 5 marks)