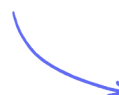


Transformations

Translations / Reflections / Rotations / Enlargements

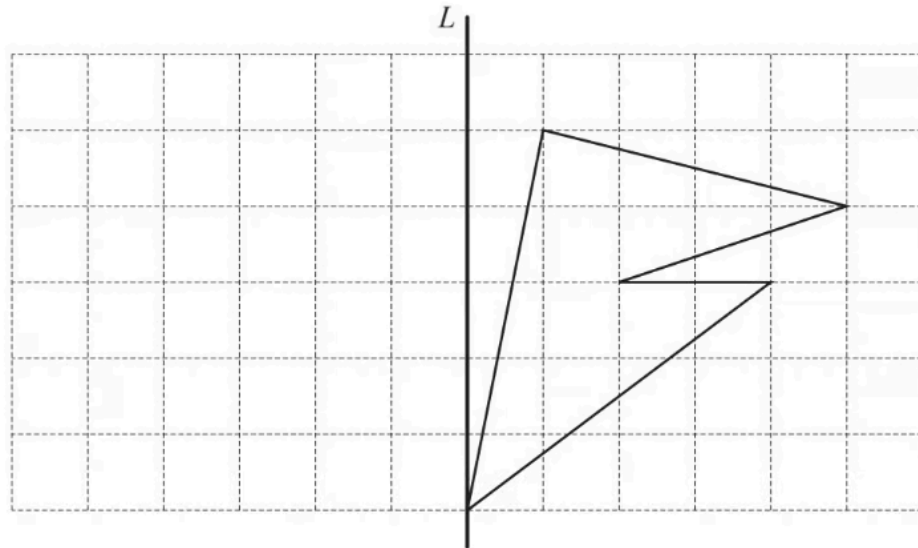
Easy (4 questions)	/8
Medium (10 questions)	/72
Hard (7 questions)	/70
Total Marks	/150

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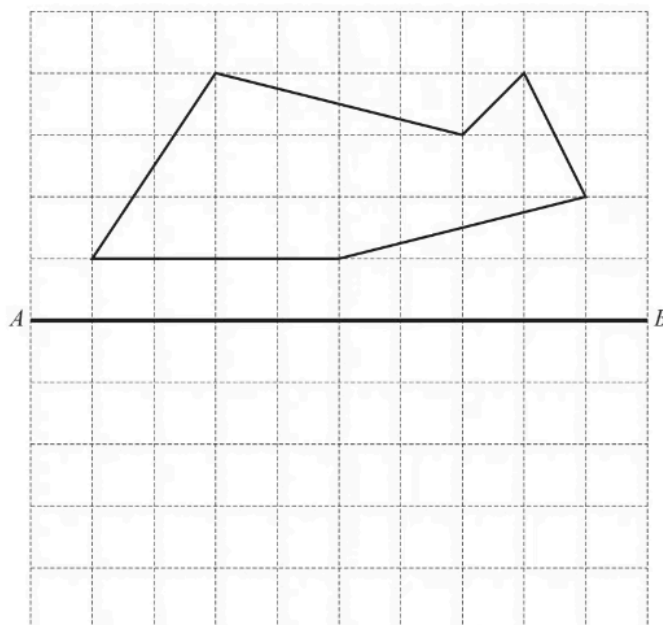
Easy Questions

- 1 Reflect the shape in line L .



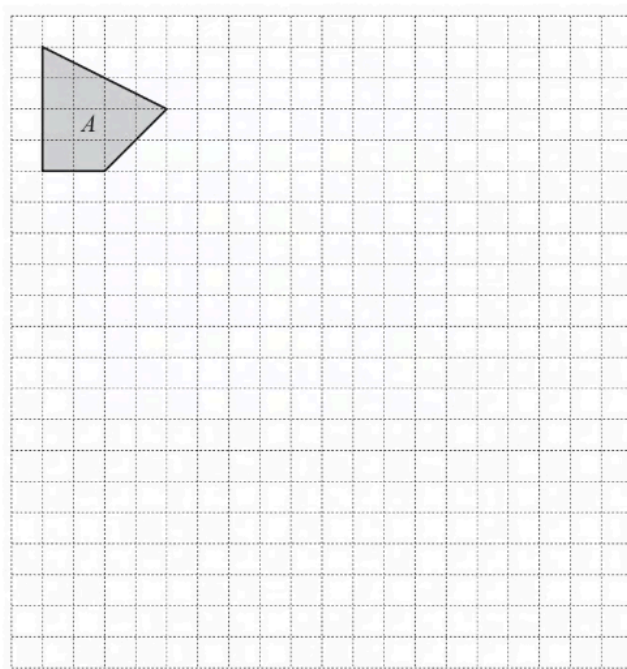
(2 marks)

- 2 Reflect the below shape in the line AB .



(2 marks)

3 Shape A is shown on the grid.

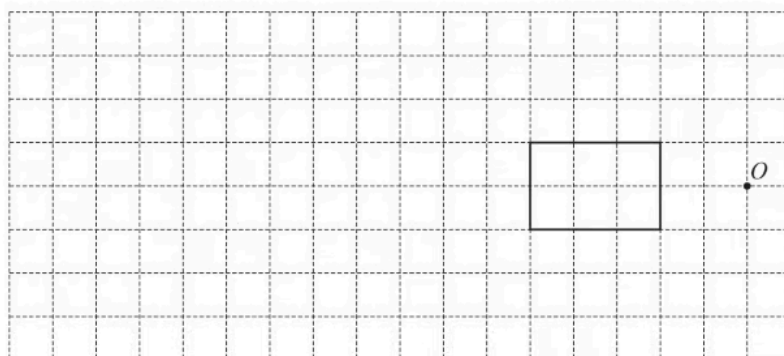


[2]

On the grid, enlarge shape A by scale factor 3.

(2 marks)

4 Enlarge the rectangle using a scale factor of 3 and centre of enlargement O .

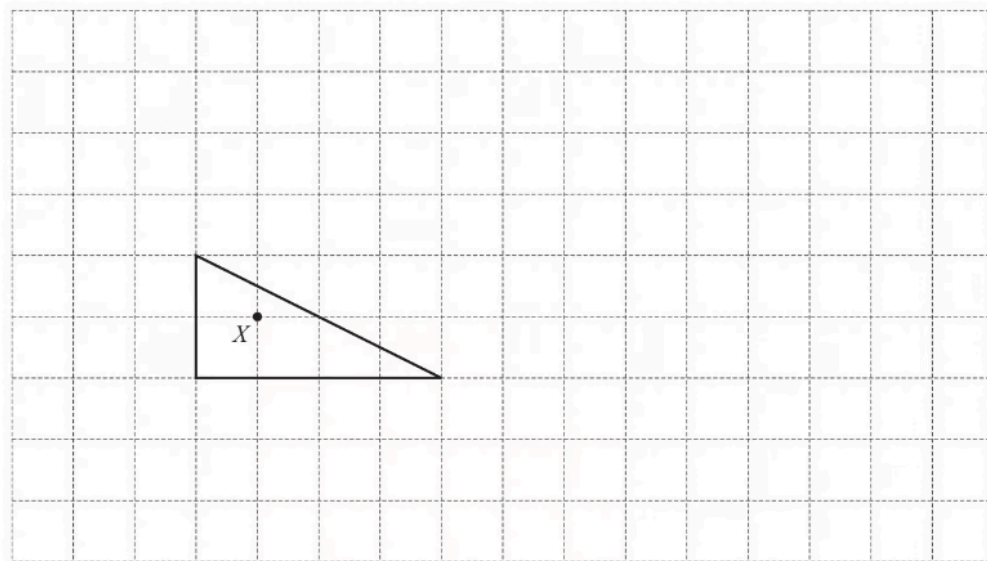


[2]

(2 marks)

Medium Questions

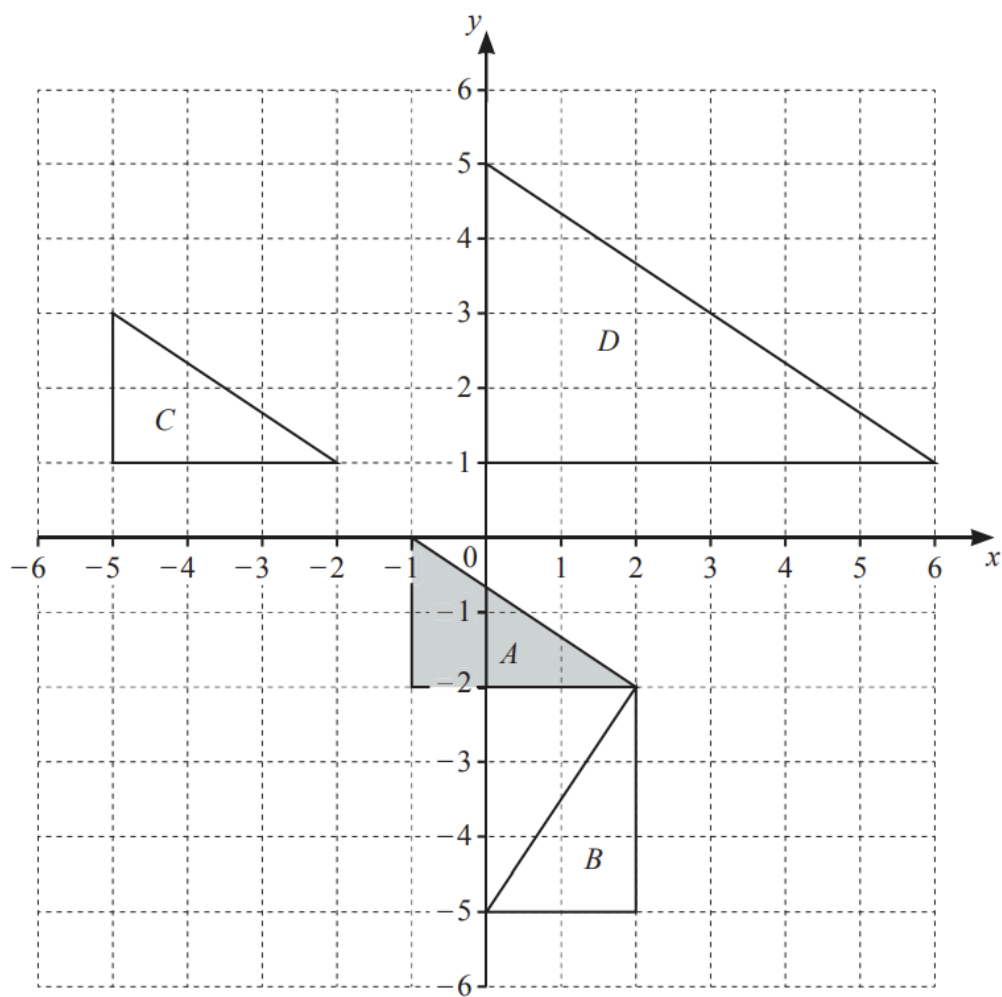
1



Draw the enlargement of the triangle by scale factor 3, centre X .

(2 marks)

2 (a)



Describe fully the **single** transformation that maps

i) triangle *A* onto triangle *B*,

[3]

ii) triangle *A* onto triangle *C*,

[2]

iii) triangle *A* onto triangle *D*.

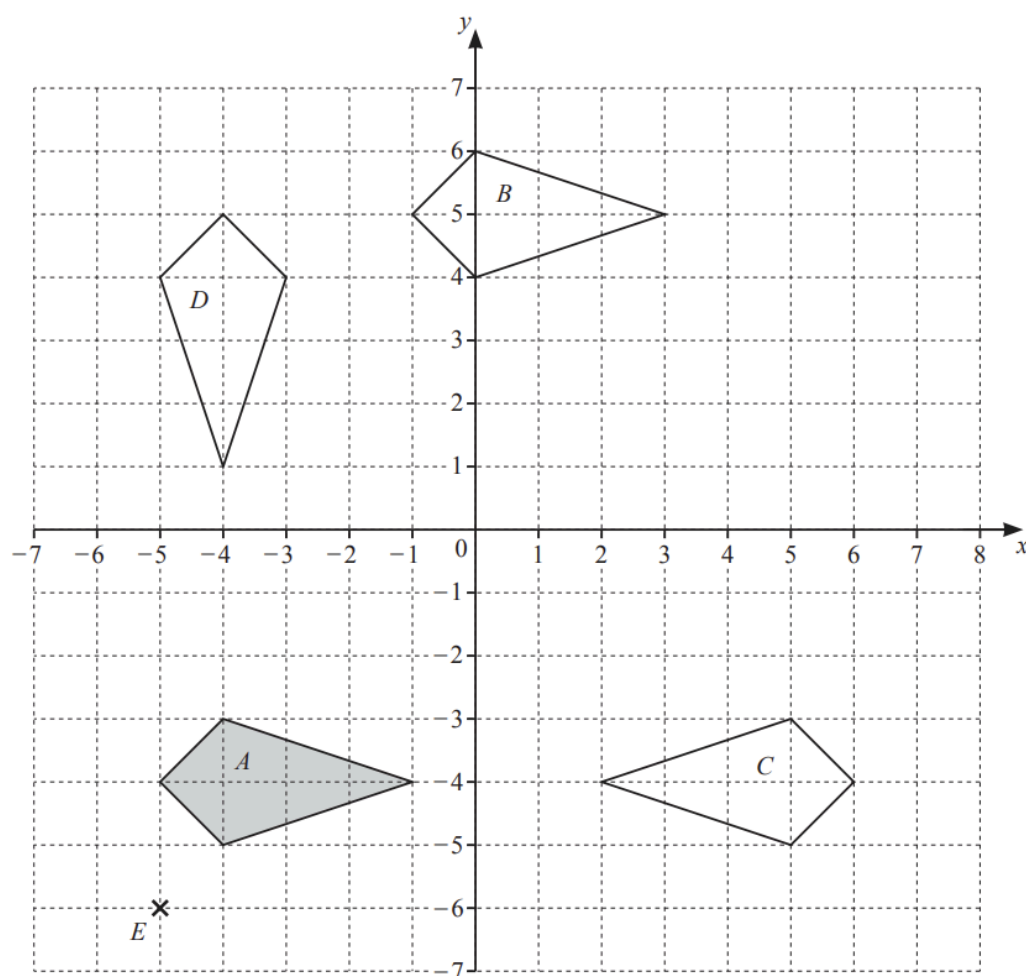
[3]

(8 marks)

(b) On the grid, draw the image of triangle A after a reflection in the line $x = -2$.

(2 marks)

3 (a) The grid shows a point E and four quadrilaterals, A , B , C and D .



Describe fully the **single** transformation that maps

i) shape A onto shape B ,

[2]

ii) shape A onto shape C ,

[2]

iii) shape A onto shape D .

[3]

(6 marks)

(b) i) Write down the coordinates of the point E .

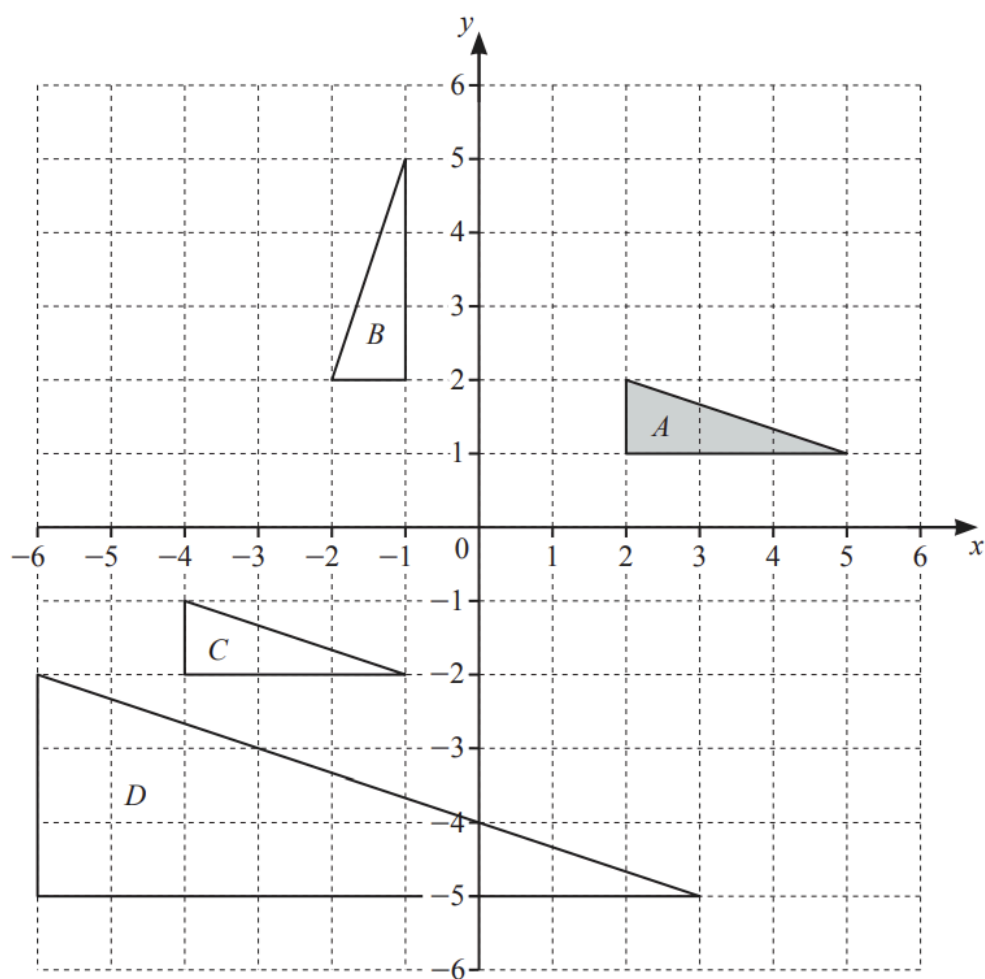
[1]

ii) On the grid, draw the image of shape A after an enlargement by scale factor 3, centre E .

[2]

(3 marks)

4 (a)



Describe fully the **single** transformation that maps

i) triangle *A* onto triangle *B*,

[3]

ii) triangle *A* onto triangle *C*,

[2]

iii) triangle *A* onto triangle *D*.

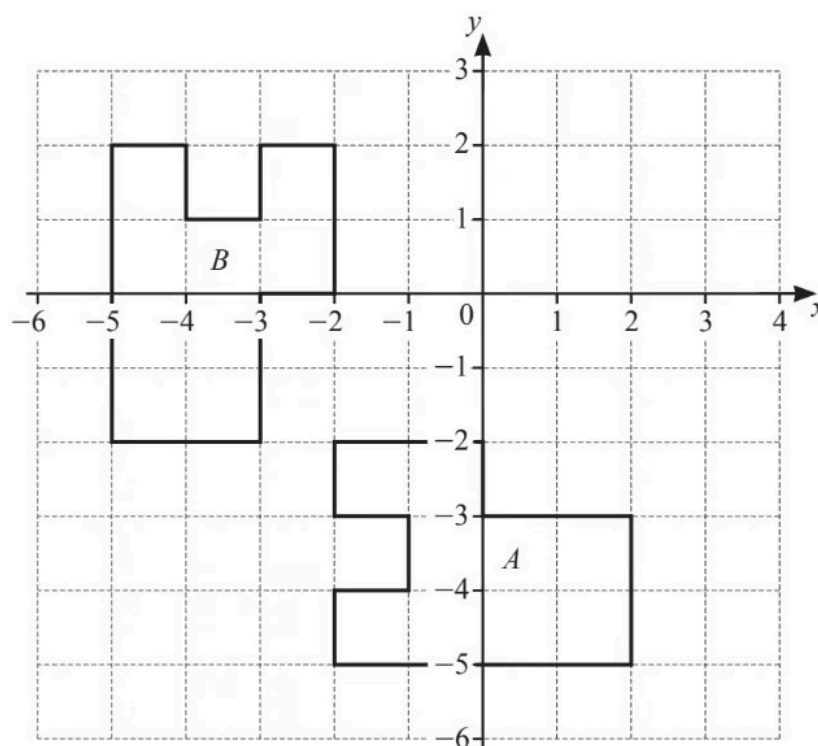
[3]

(8 marks)

(b) On the grid, draw the image of triangle A after a reflection in the line $y = -1$.

(2 marks)

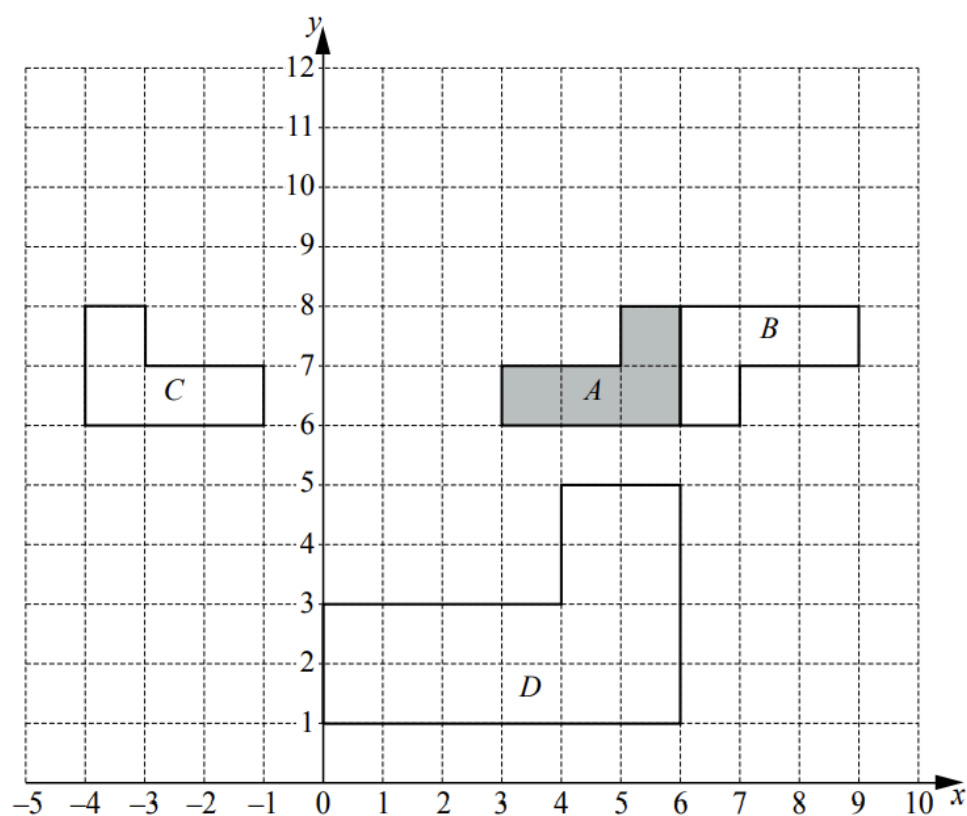
5



Describe fully the **single** transformation that maps shape A onto shape B .

(3 marks)

6 (a)



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

Describe fully the **single** transformation that maps shape A onto

i) shape B ,

[3]

ii) shape C ,

[2]

iii) shape D .

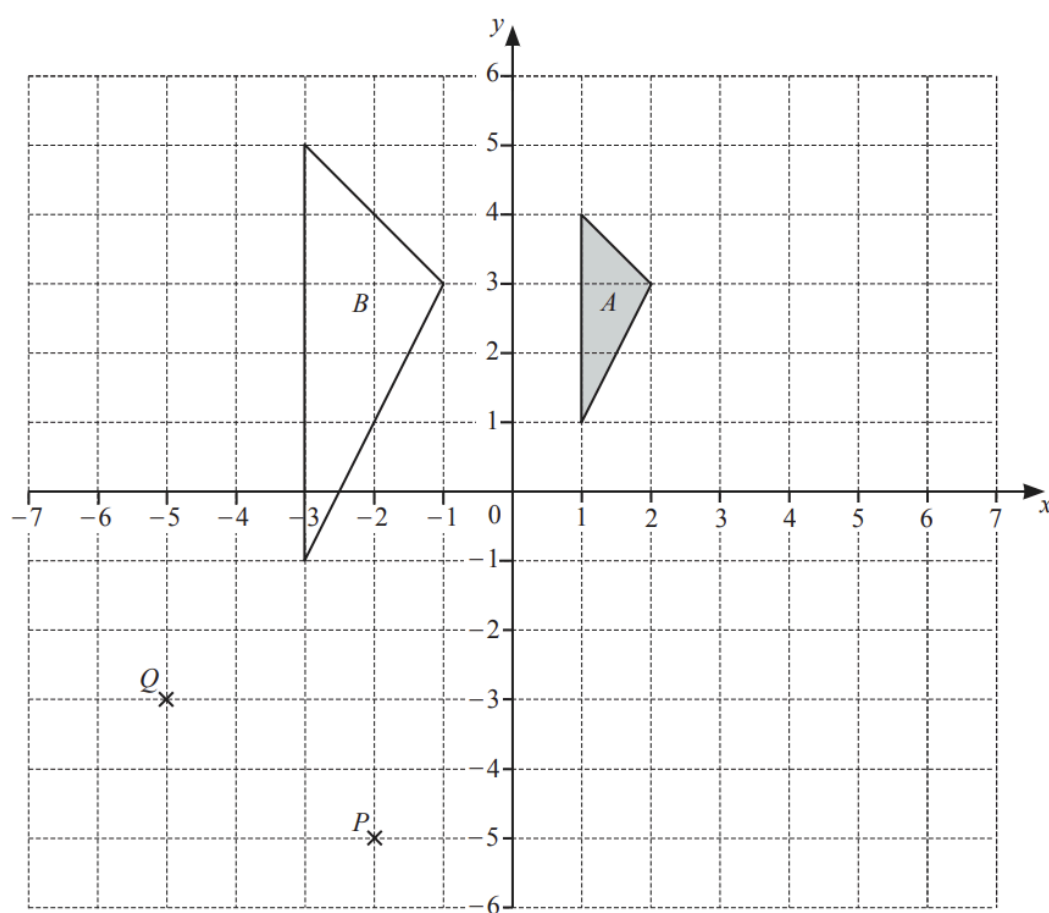
[3]

(8 marks)

- (b) On the grid, draw the image of shape A after a translation by the vector $\begin{pmatrix} -3 \\ 2 \end{pmatrix}$

(2 marks)

7 The diagram shows two triangles, *A* and *B*, and two points *P* and *Q*.



- i) Describe fully the **single** transformation that maps triangle *A* onto triangle *B*.

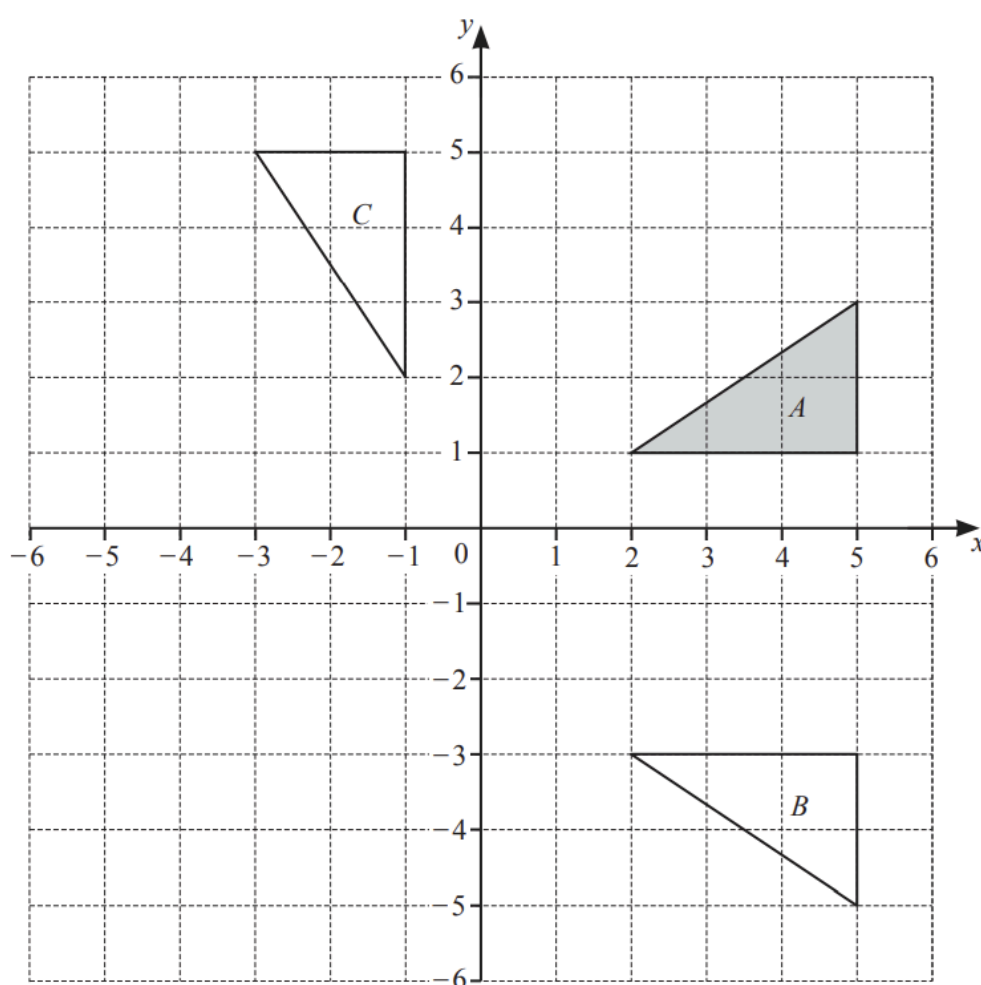
[3]

ii) On the grid, draw the image of triangle A after a translation by the vector $\begin{pmatrix} 4 \\ -2 \end{pmatrix}$

[2]

iii) On the grid, draw the image of triangle A after a rotation through 90° clockwise about $(0, 0)$.

[2]

(7 marks)**8 (a)**

Describe fully the **single** transformation that maps triangle A onto triangle B .

(2 marks)

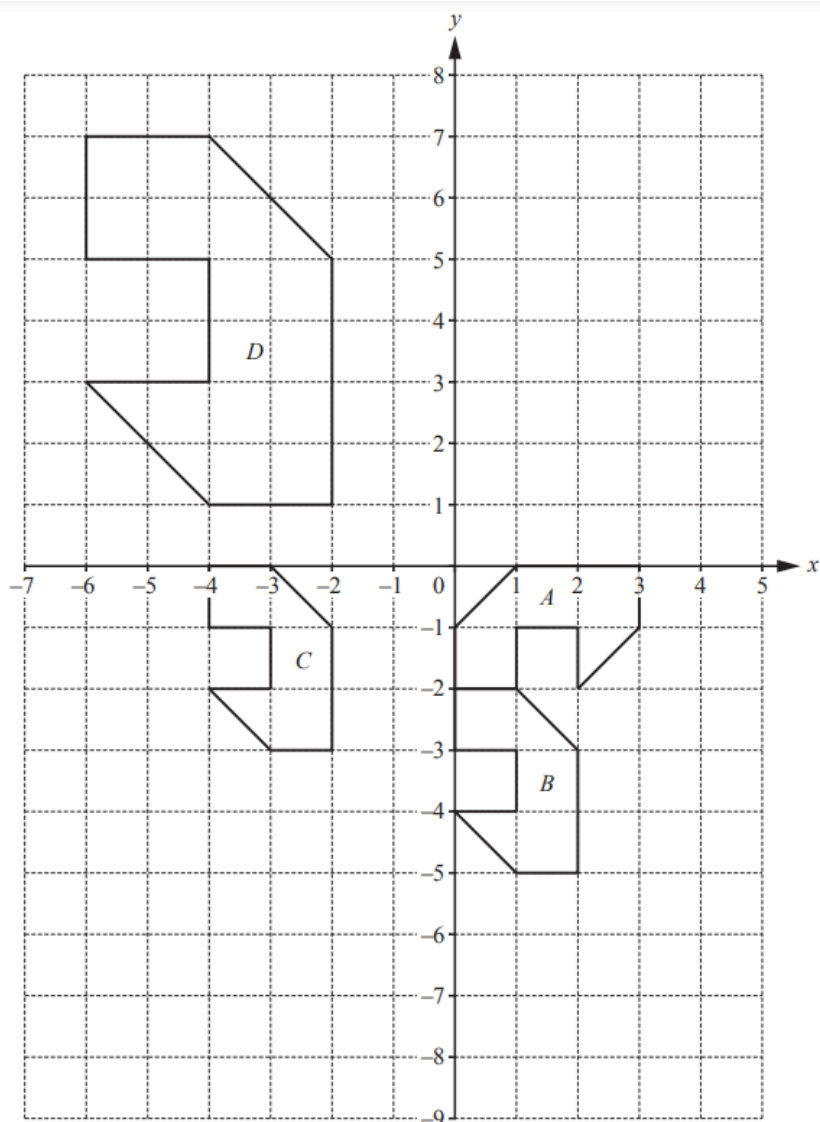
(b) Describe fully the **single** transformation that maps triangle A onto triangle C .

(3 marks)

(c) On the grid, draw the image of triangle A after a translation by the vector $\begin{pmatrix} -2 \\ -3 \end{pmatrix}$
(2 marks)

(d) On the grid, draw the image of triangle A after a rotation of 180° about $(2, 1)$.
(2 marks)

9 (a)



Describe fully the **single** transformation that maps

i) shape *A* onto shape *B*,

[3]

ii) shape *B* onto shape *C*,

[2]

iii) shape *C* onto shape *D*.

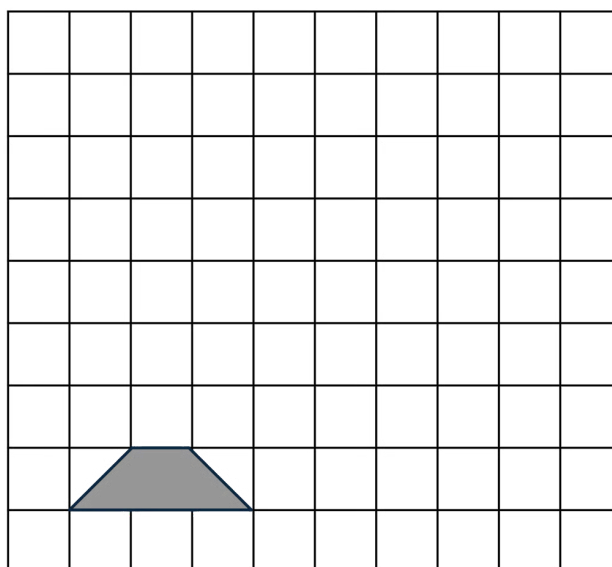
[3]

(8 marks)

(b) On the grid, draw the image of shape D after a reflection in the line $x = -1$.

(2 marks)

10

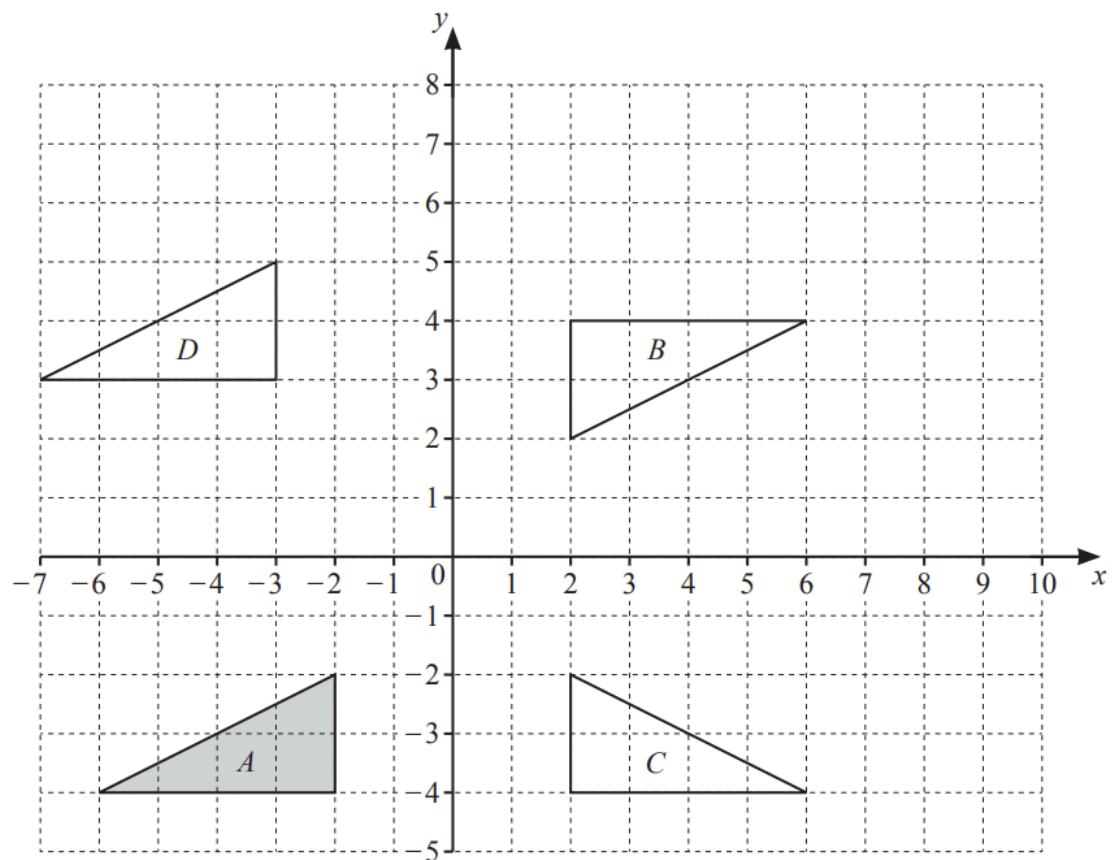


On the grid, draw an enlargement of the trapezium with a scale factor of 2.

(2 marks)

Hard Questions

1 (a)



Describe fully the **single** transformation that maps

i) triangle *A* onto triangle *B*,

[3]

ii) triangle *A* onto triangle *C*,

[2]

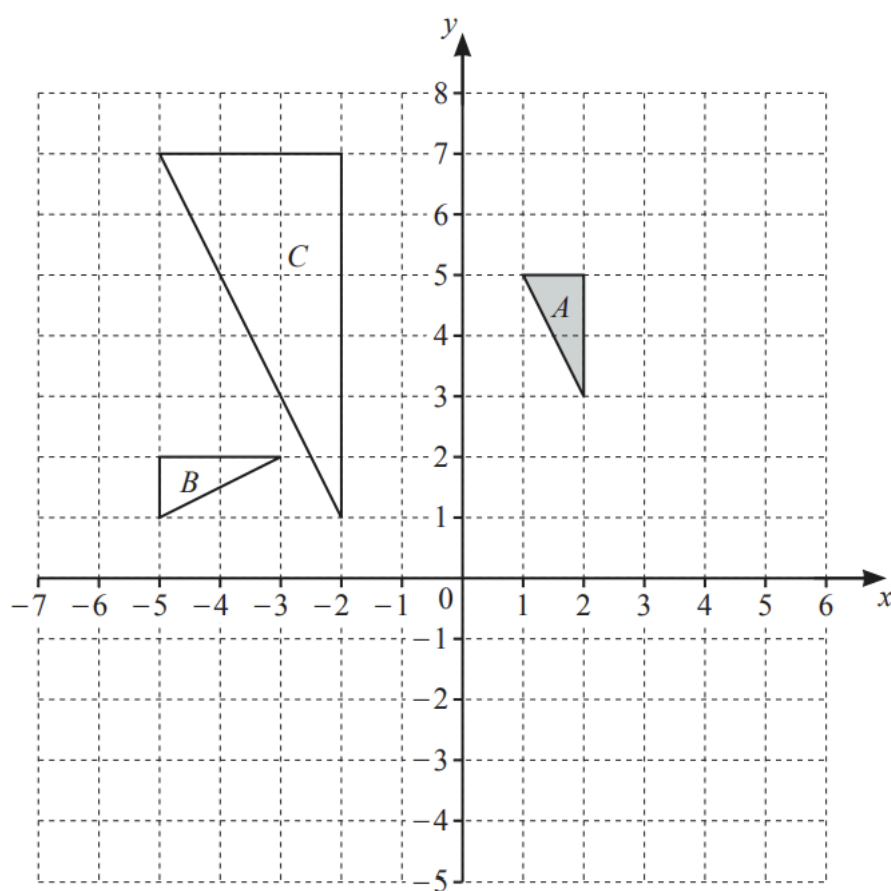
iii) triangle *A* onto triangle *D*.

(7 marks)

(b) On the grid, enlarge triangle A by scale factor 0.5, centre $(4, 0)$.

(2 marks)

2



On the grid, draw the image of

ia) triangle A after a translation by the vector $\begin{pmatrix} 3 \\ -7 \end{pmatrix}$,

[2]

ib) triangle A after a reflection in the line $x = 3$.

[2]

ii) Describe fully the **single** transformation that maps triangle A onto triangle B .

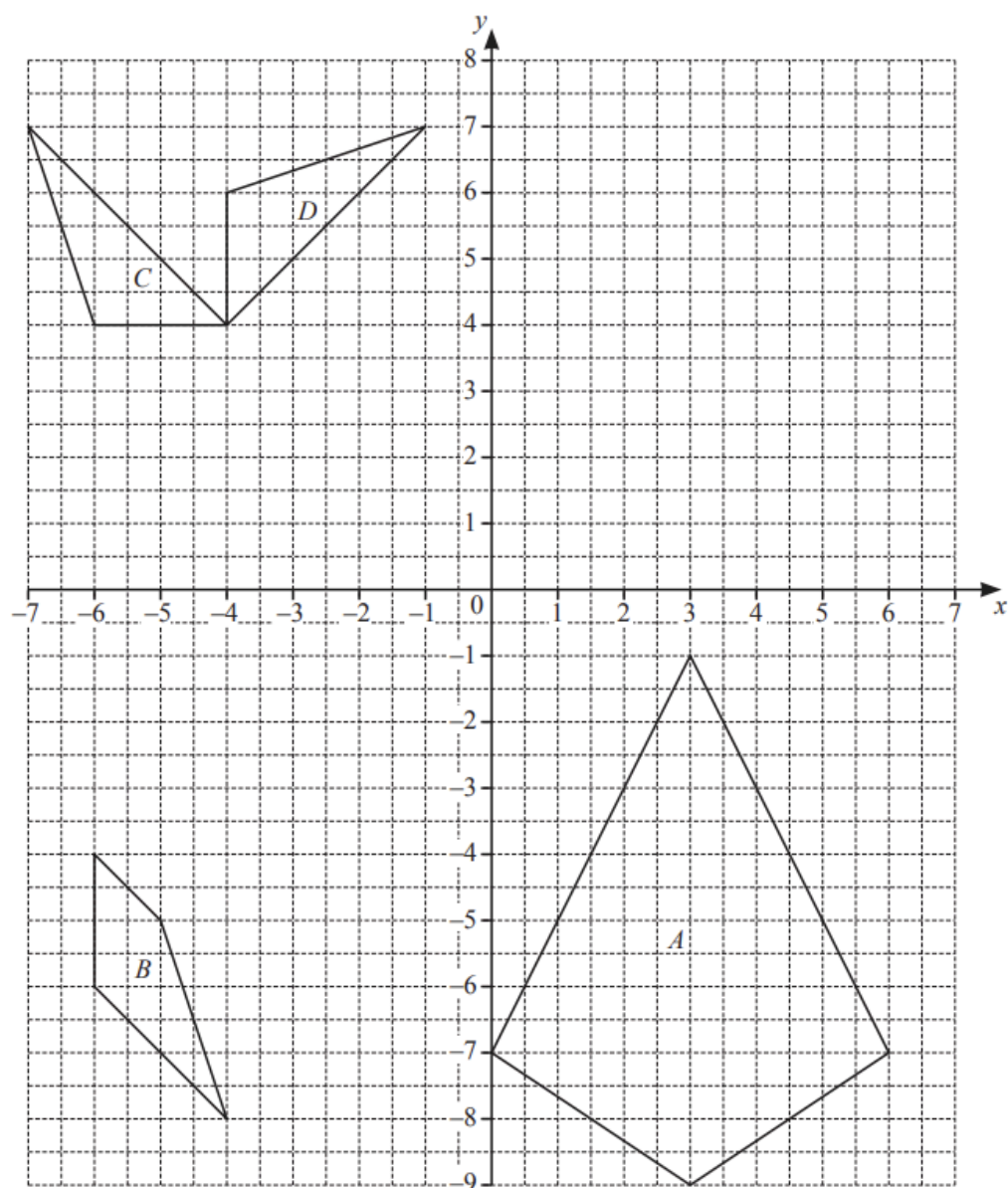
[3]

iii) Describe fully the **single** transformation that maps triangle A onto triangle C .

[3]

(10 marks)

3



On the grid, draw the image of

ia) shape **A** after an enlargement with scale factor $\frac{1}{2}$, centre $(3, -5)$

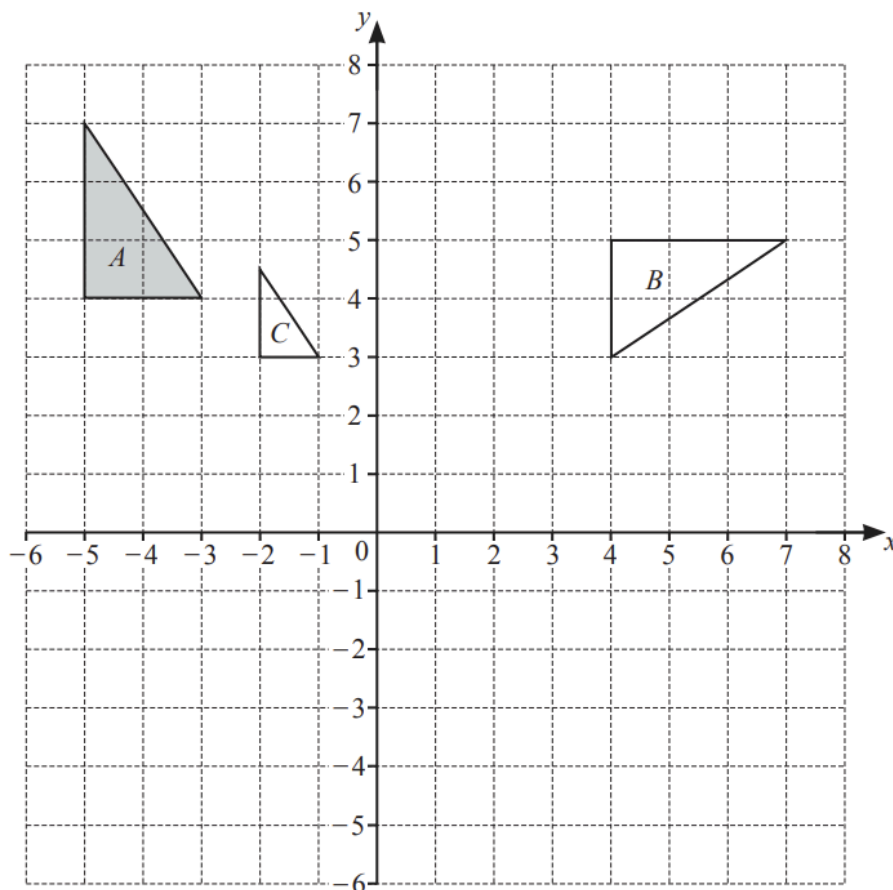
[2]

ib) shape **B** after a reflection in the line $y = -3$.

[2]

ii) Describe fully the **single** transformation that maps triangle **C** onto triangle **D**.

4 (a) Triangles A , B and C are shown on the grid.



Describe fully the **single** transformation that maps

i) triangle A onto triangle B ,

[3]

ii) triangle A onto triangle C .

[3]

(6 marks)

(b) On the grid,

i) translate triangle A by the vector $\begin{pmatrix} 6 \\ -2 \end{pmatrix}$,

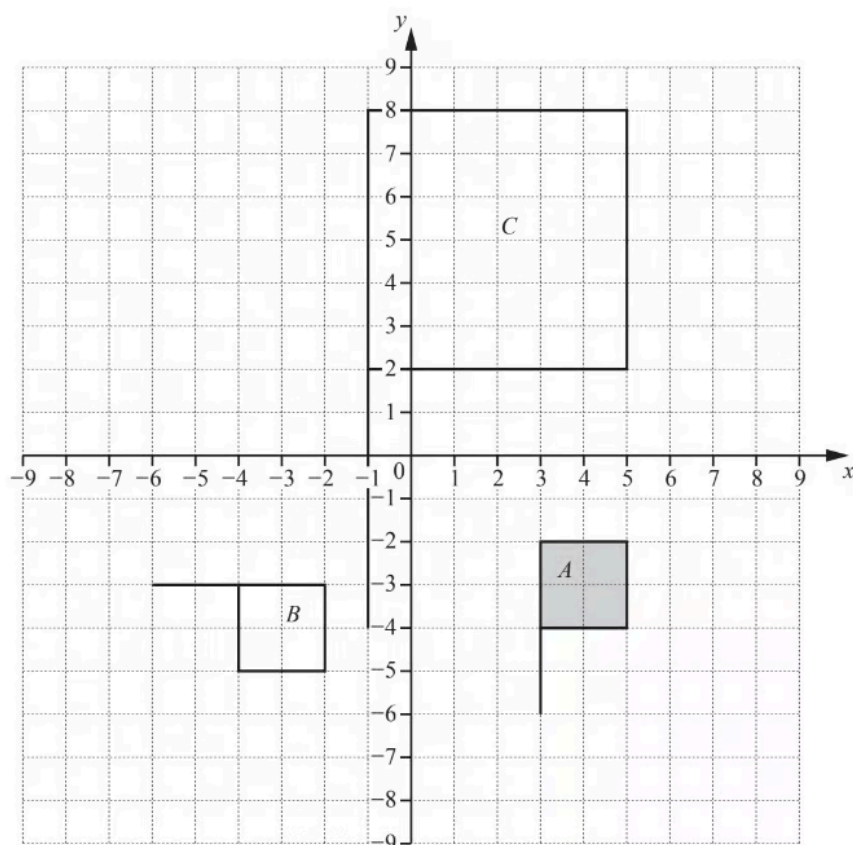
[2]

ii) reflect triangle A in the line $y = 1$.

[2]

(4 marks)

5 (a)



Describe fully the **single** transformation that maps shape *A* onto shape *B*.

(3 marks)

(b) Describe fully the **single** transformation that maps shape *A* onto shape *C*.

(3 marks)

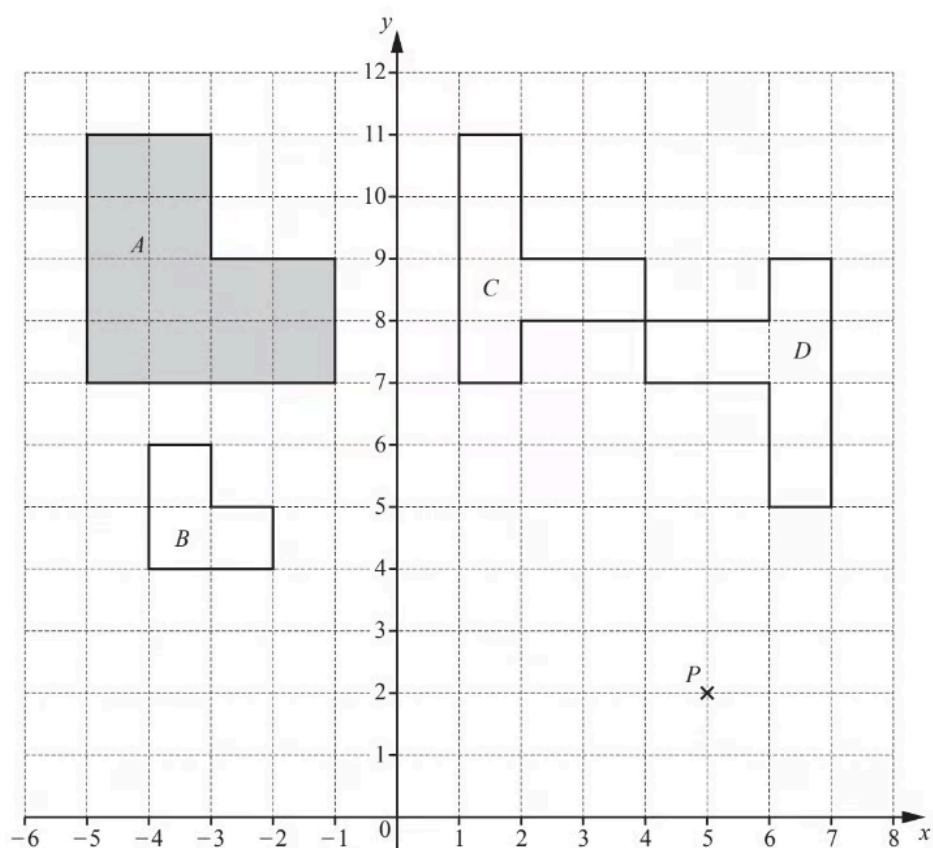
(c) On the grid, draw the image of shape *A* after a translation by the vector $\begin{pmatrix} 3 \\ 1 \end{pmatrix}$.

(3 marks)

(d) On the grid, draw the image of **shape B** after a reflection in the line $y = 1$.

(2 marks)

6 (a) The diagram shows four shapes A , B , C and D and a point P on a 1cm^2 grid.



Find

i) the perimeter of shape A ,

..... cm [1]

ii) the area of shape A .

..... cm^2 [1]

(2 marks)

(b) i) Write down the co-ordinates of point P .

[1]

ii) Find the co-ordinates of the image of point P when

a) P is reflected in the y -axis,

[1]

b) P is reflected in the line $y = 6$.

[2]

iii) Find the vector that translates point P to the point $(49, -12)$.

[2]

(6 marks)

(c) Describe fully the **single** transformation that maps

i) shape A onto shape B ,

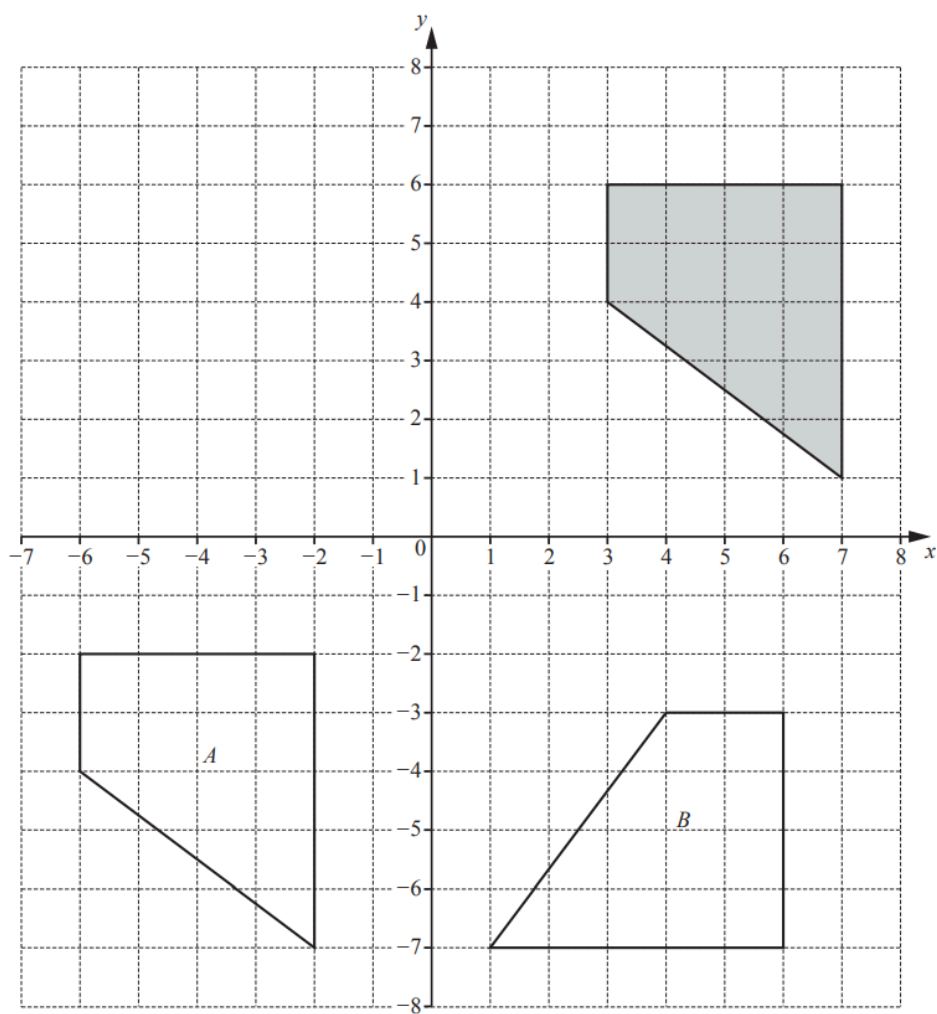
[3]

ii) shape C onto shape D .

[3]

(6 marks)

7 (a)



Describe fully the **single** transformation that maps the shaded quadrilateral onto

i) quadrilateral *A*,

[2]

ii) quadrilateral *B*.

[3]

(5 marks)

(b) On the grid,

i) reflect the shaded quadrilateral in the line $x = 1$,

[2]

ii) enlarge the shaded quadrilateral by scale factor $\frac{1}{2}$, centre $(-1, 0)$.

[2]

(4 marks)