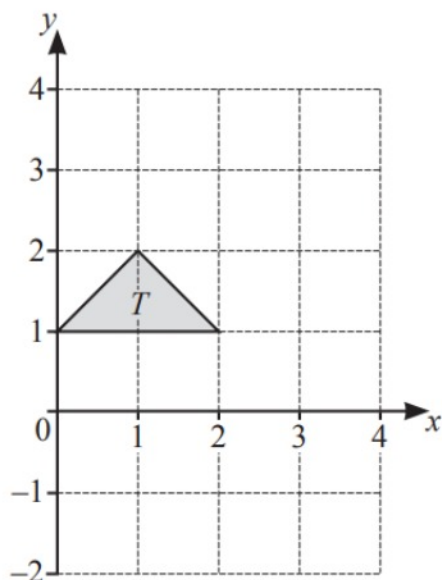


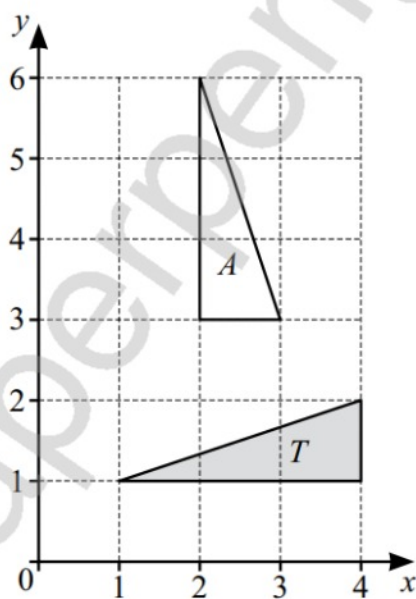
6



Rotate triangle  $T$   $90^\circ$  clockwise about the point  $(2, 1)$ .

[2]

15



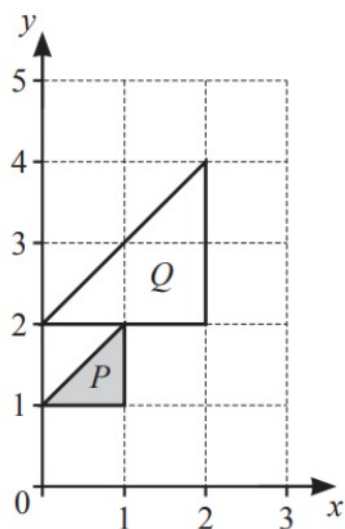
Describe fully the **single** transformation that maps triangle  $T$  onto triangle  $A$ .

.....

.....

[3]

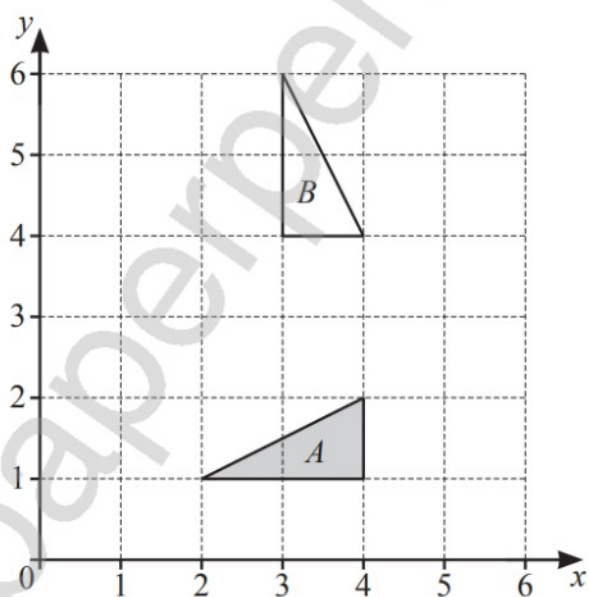
12 (a)



Describe fully the **single** transformation that maps triangle *P* onto triangle *Q*.

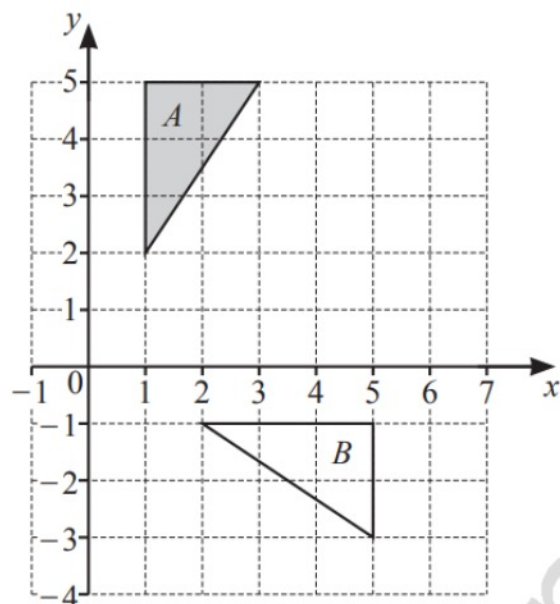
.....  
..... [3]

14



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

.....  
..... [3]



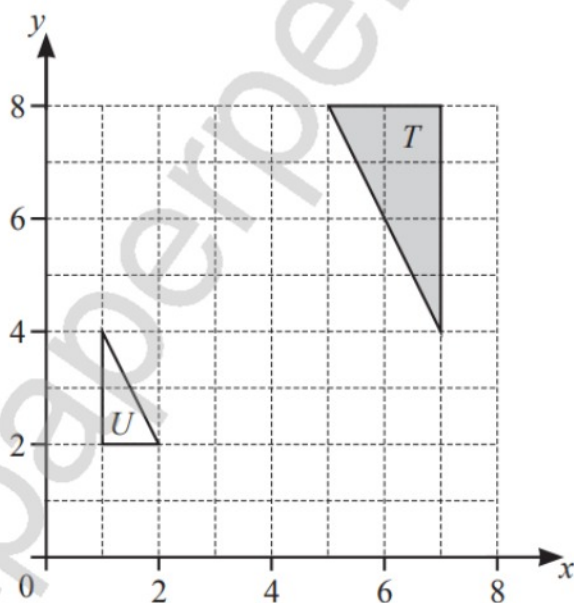
Describe fully the **single** transformation that maps triangle *A* onto triangle *B*.

.....

.....

[3]

18

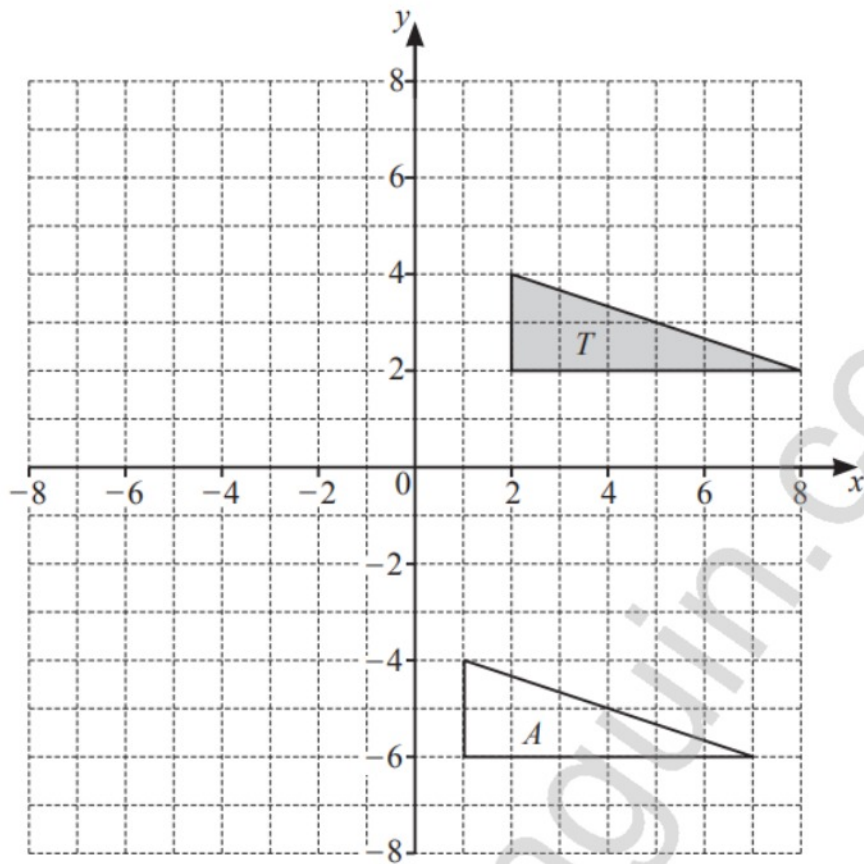


Describe fully the **single** transformation that maps triangle *T* onto triangle *U*.

.....

.....

[3]

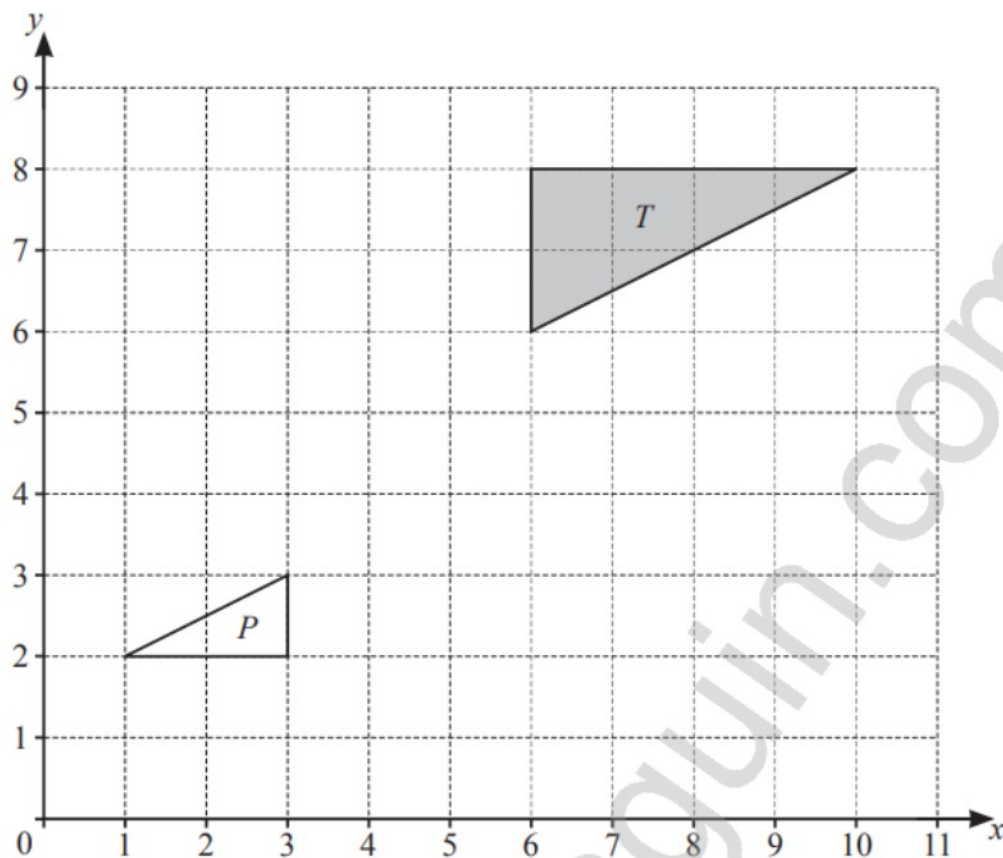


- (a) Describe fully the **single** transformation that maps triangle *T* onto triangle *A*.

..... [2]

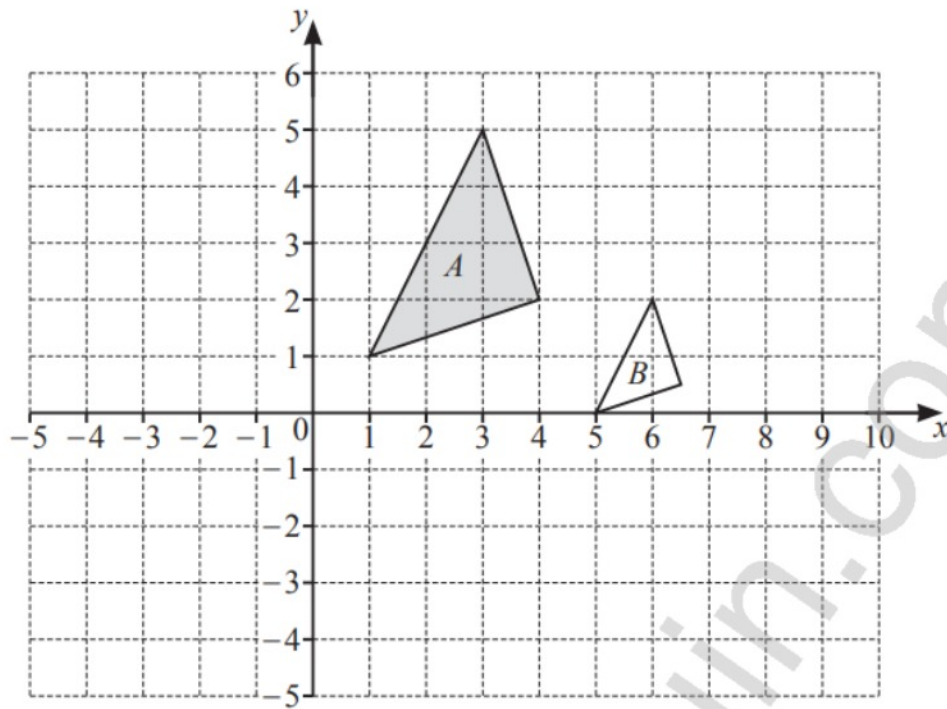
.....

- (b) Draw the image of triangle *T* after an enlargement, scale factor  $-\frac{1}{2}$ , centre (0, 0). [2]



Describe fully the **single** transformation that maps triangle  $T$  onto triangle  $P$ .

[3]



(a) On the grid, draw the image of

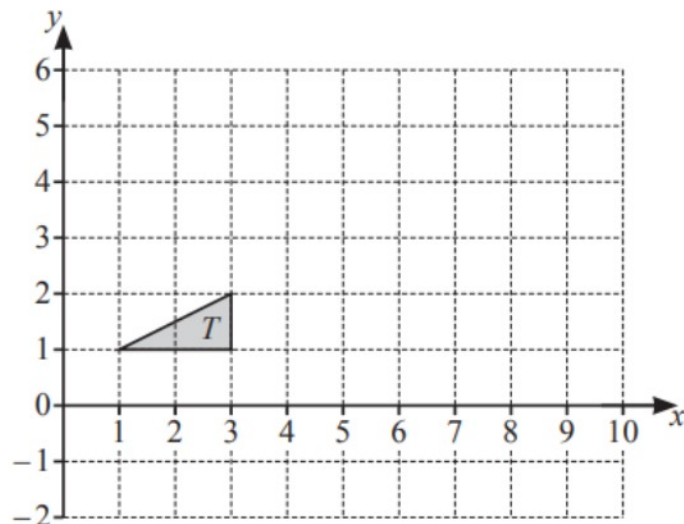
(i) triangle  $A$  after a reflection in the  $y$ -axis, [1]

(ii) triangle  $A$  after a translation by the vector  $\begin{pmatrix} -3 \\ -4 \end{pmatrix}$ . [2]

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

..... [3]  
 .....

4 (a)



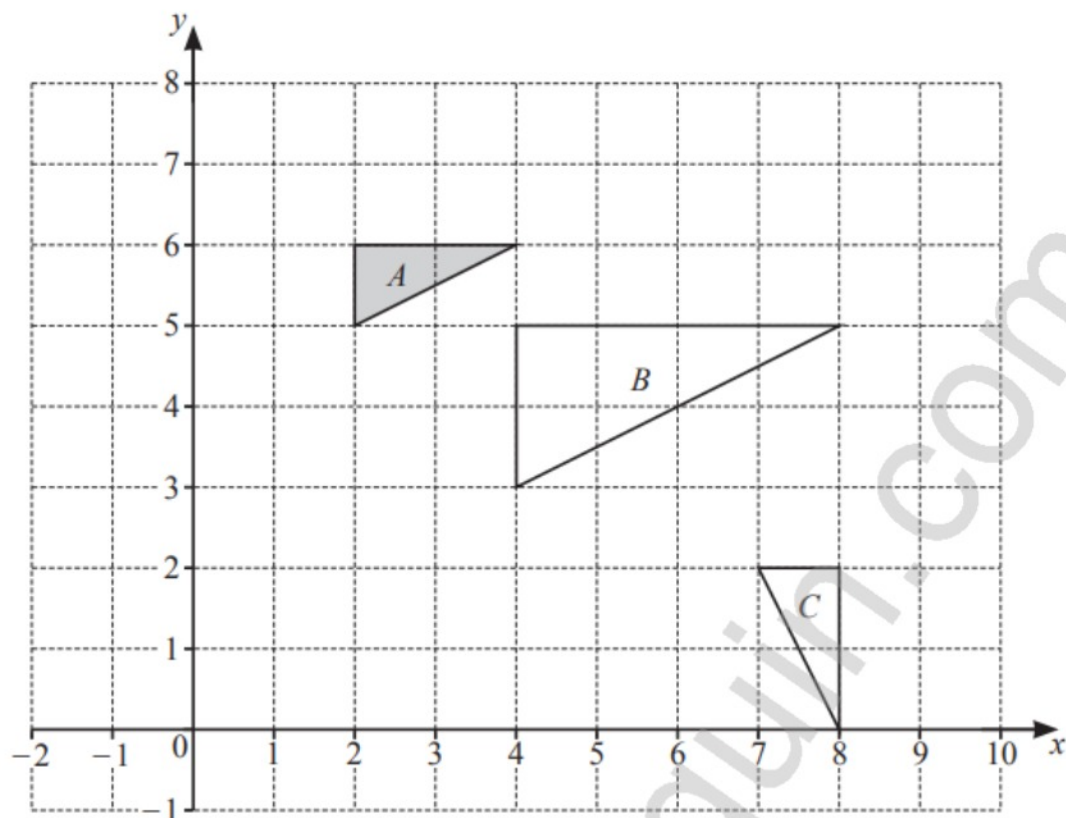
(i) Enlarge triangle  $T$  by scale factor 3, centre  $(0, 2)$ . [2]

(ii) (a) Rotate triangle  $T$  about  $(4, 2)$  by  $90^\circ$  clockwise. Label the image  $P$ . [2]

(b) Reflect triangle  $T$  in the line  $x + y = 6$ . Label the image  $Q$ . [3]

(c) Describe fully the **single** transformation that maps triangle  $P$  onto triangle  $Q$ .

..... [2]  
.....



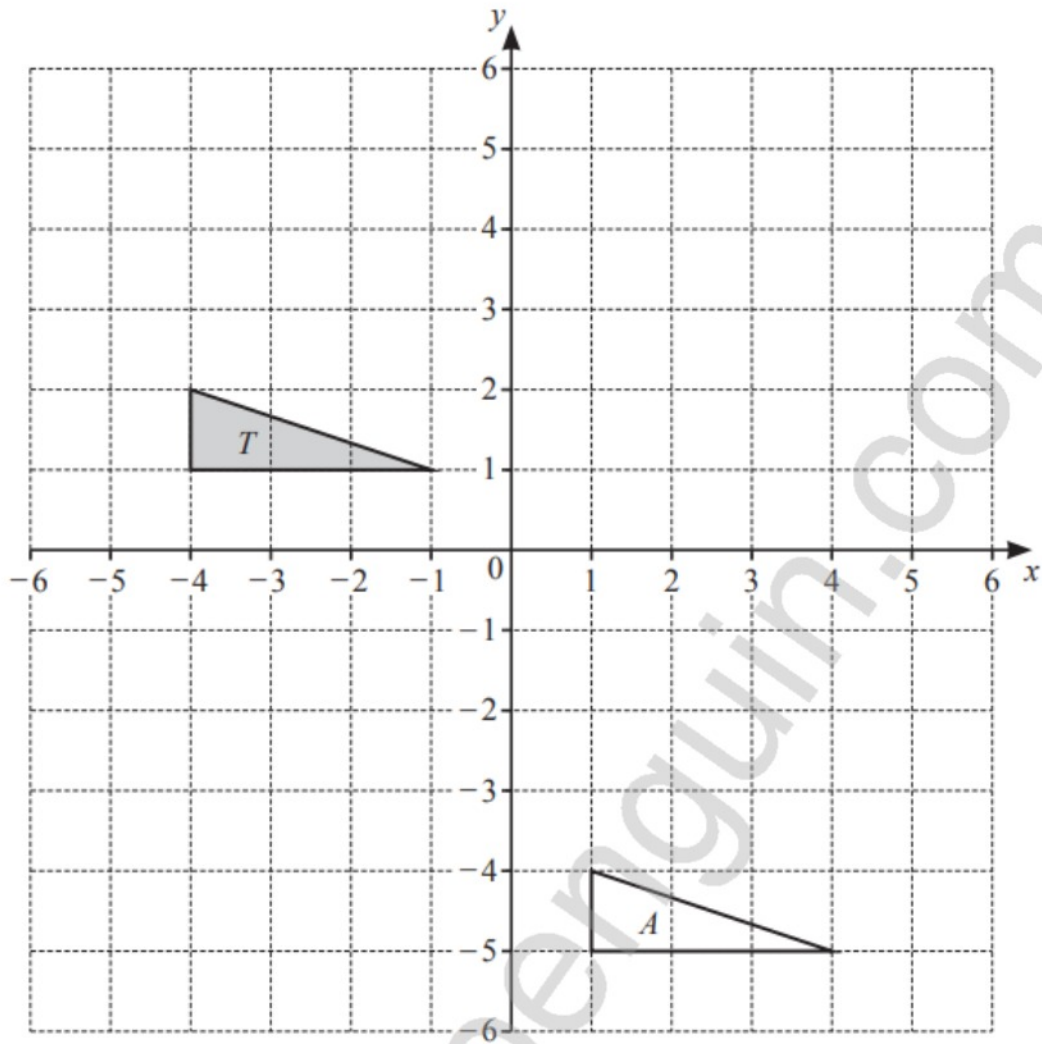
Describe the **single** transformation that maps

- (a) triangle *A* onto triangle *B*

.....  
..... [3]

- (b) triangle *A* onto triangle *C*.

.....  
..... [3]

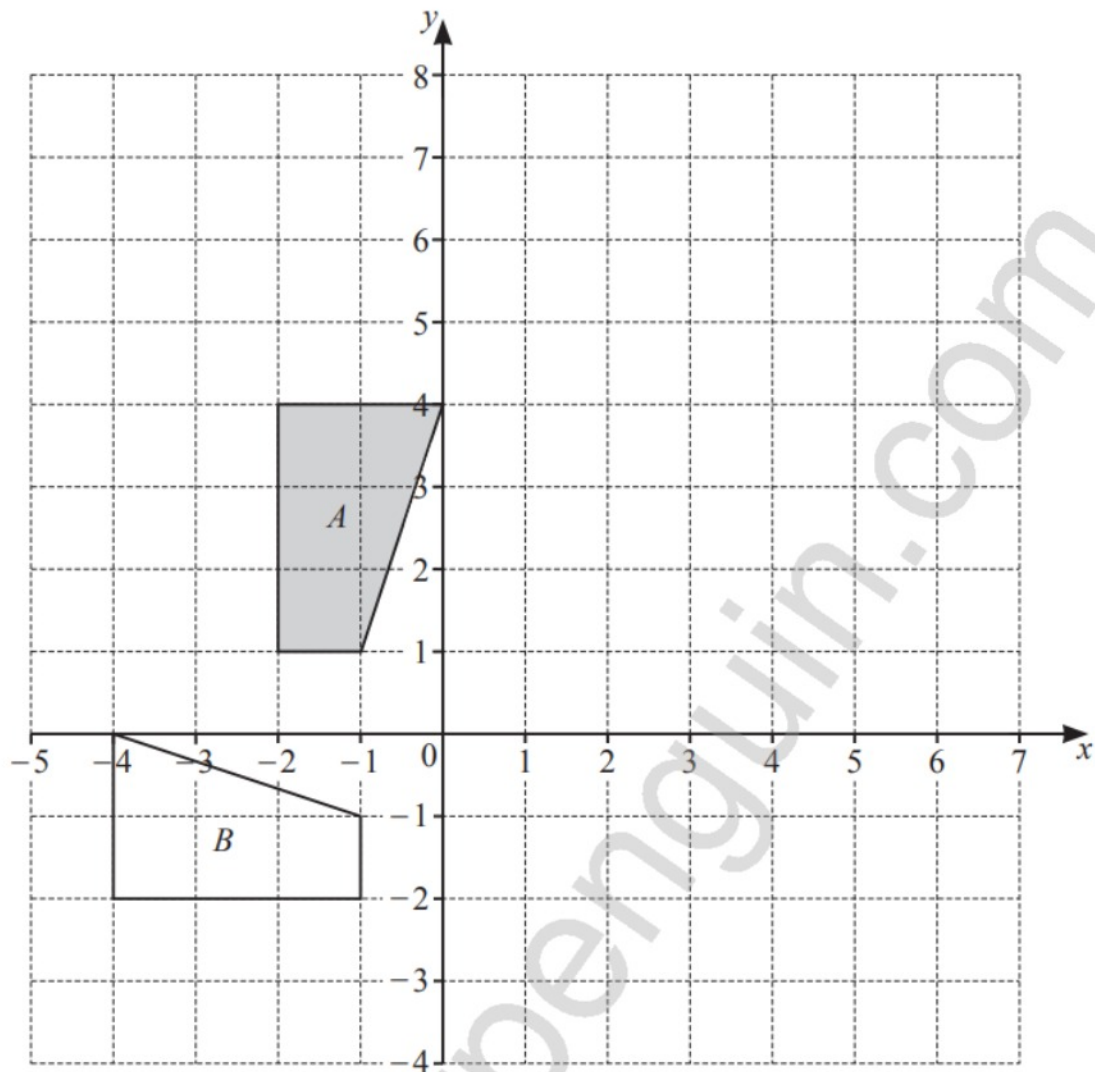


- (a) Draw the image of triangle  $T$  after a reflection in the line  $y = -1$ . [2]
- (b) Draw the image of triangle  $T$  after a rotation through  $90^\circ$  clockwise about  $(0, 0)$ . [2]
- (c) Describe fully the **single** transformation that maps triangle  $T$  onto triangle  $A$ .

..... [2]

.....

7 (a)



(i) On the grid, draw the image of

(a) shape *A* after an enlargement, scale factor 2, centre (0, 1),

[2]

(b) shape *A* after a reflection in the line  $y = x - 1$ .

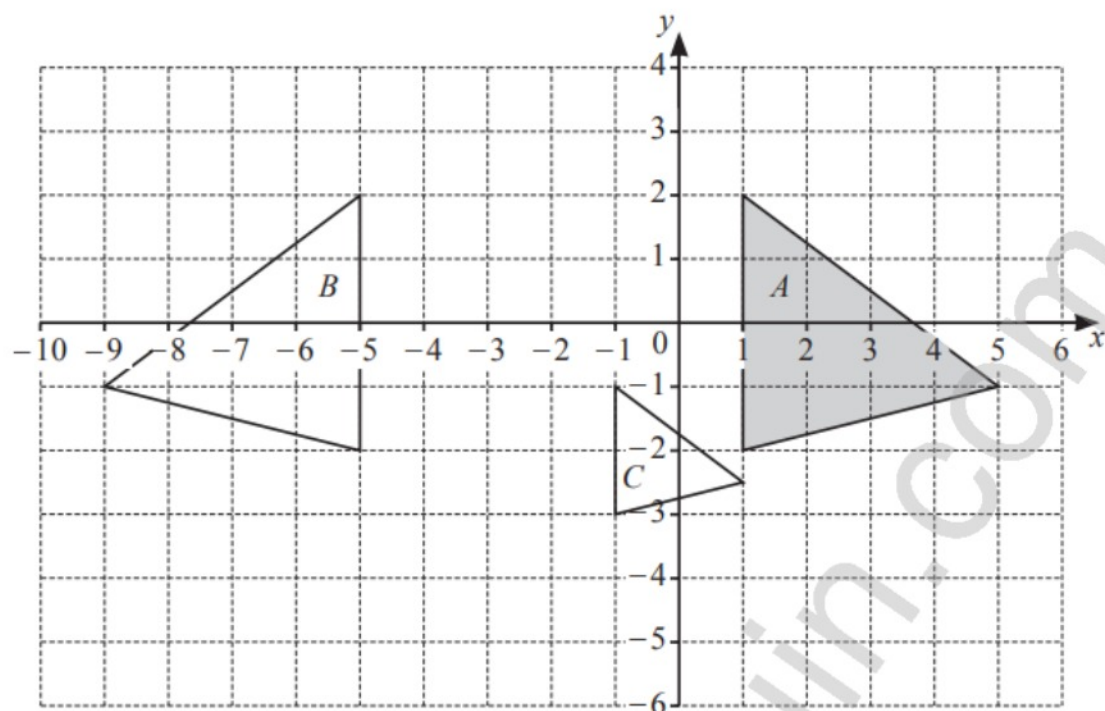
[3]

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

.....

.....

[3]



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

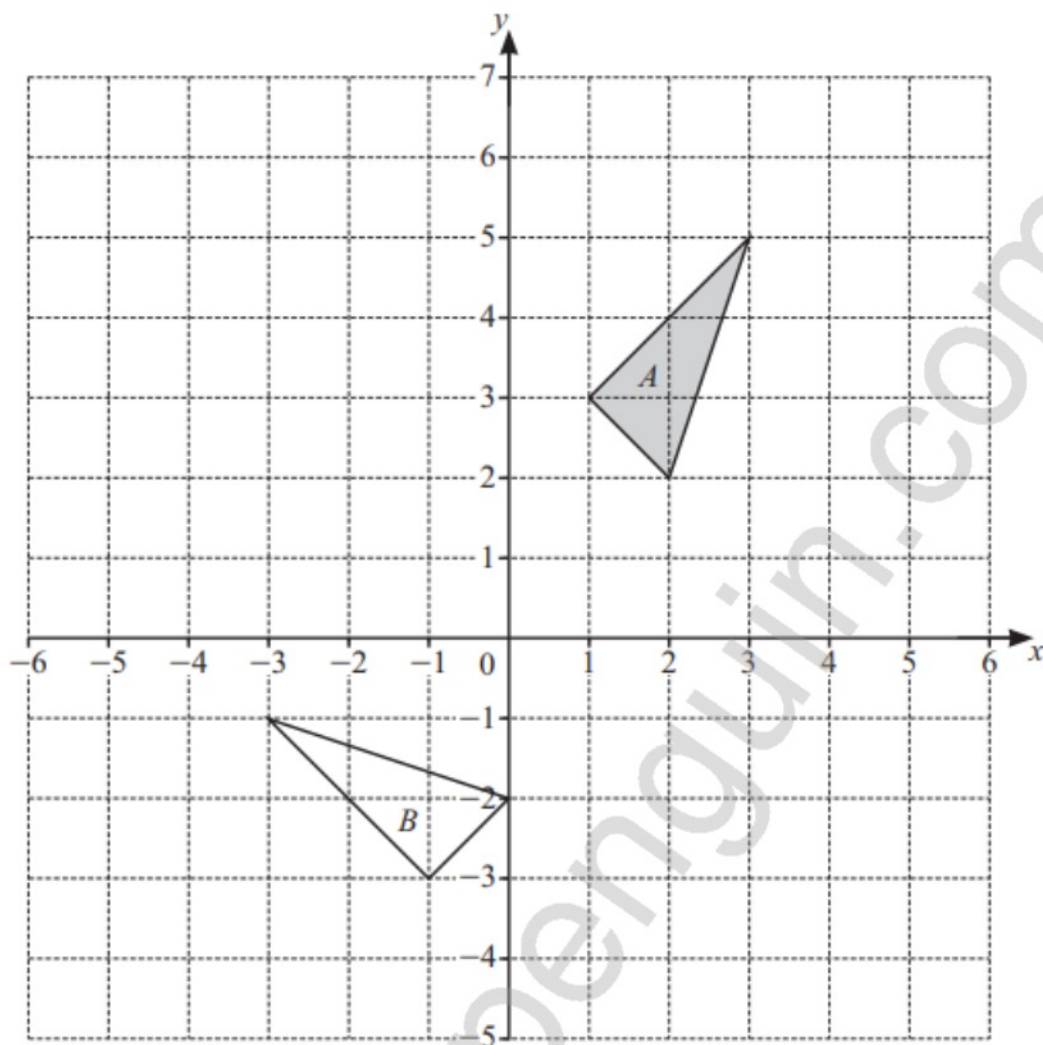
(i) triangle  $A$  onto triangle  $B$

..... [2]

(ii) triangle  $A$  onto triangle  $C$ .

..... [3]

(b) Draw the image of triangle  $A$  after a rotation,  $90^\circ$  clockwise, about  $(1, 3)$ . [2]



(a) Draw the image of

(i) triangle  $A$  after a reflection in the line  $y = 1$

[2]

(ii) triangle  $A$  after a translation by the vector  $\begin{pmatrix} -6 \\ 1 \end{pmatrix}$ .

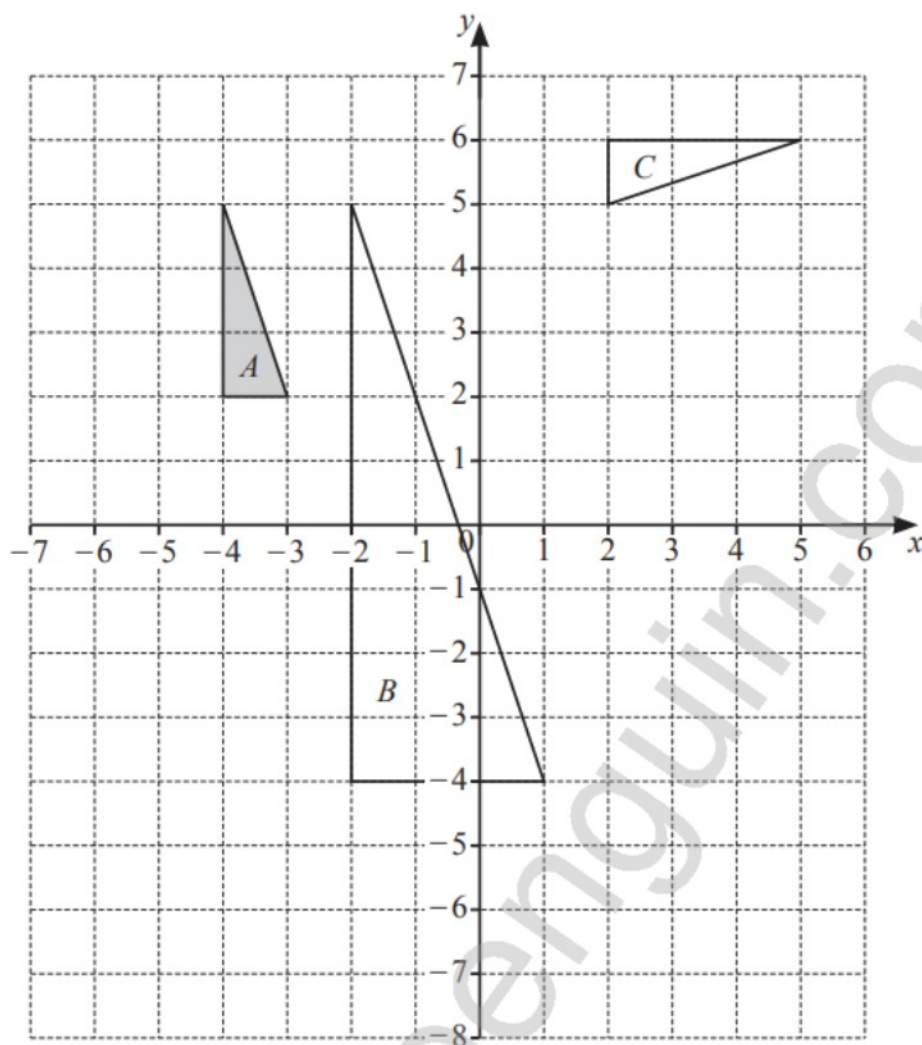
[2]

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

.....

.....

[3]



(a) Draw the image of shape *A* after a translation by the vector  $\begin{pmatrix} 8 \\ -6 \end{pmatrix}$ . [2]

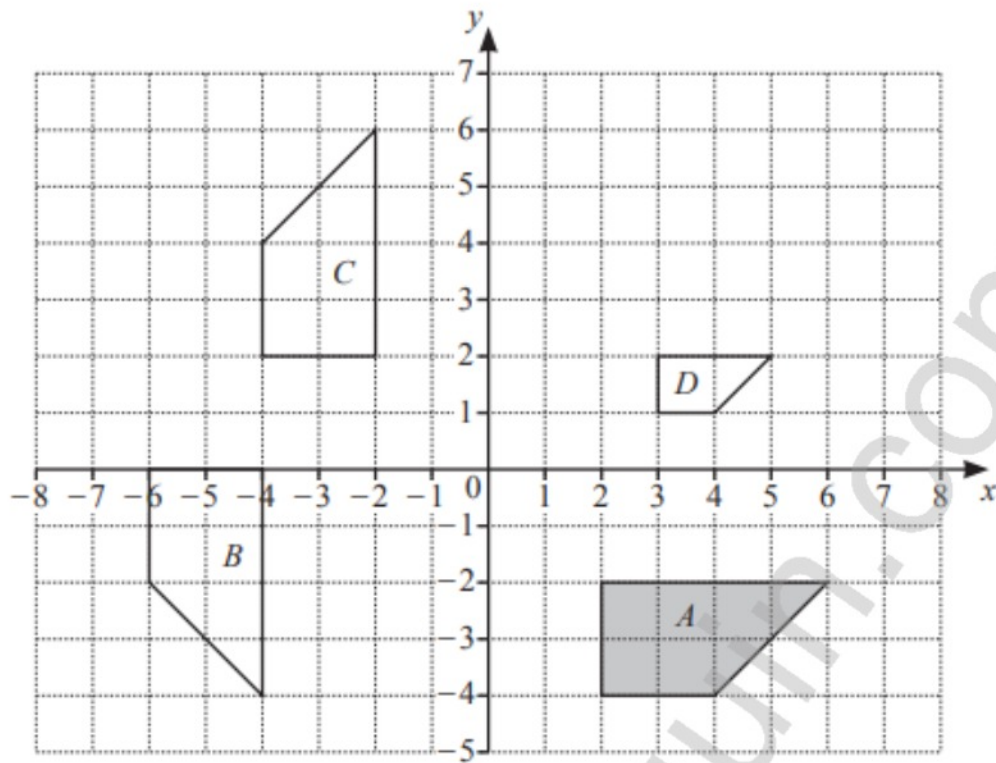
(b) Draw the image of shape *A* after a reflection in the line  $y = -1$ . [2]

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

..... [3]  
 .....

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

..... [3]  
 .....



Describe fully the **single** transformation that maps

- (a) shape *A* onto shape *B*,

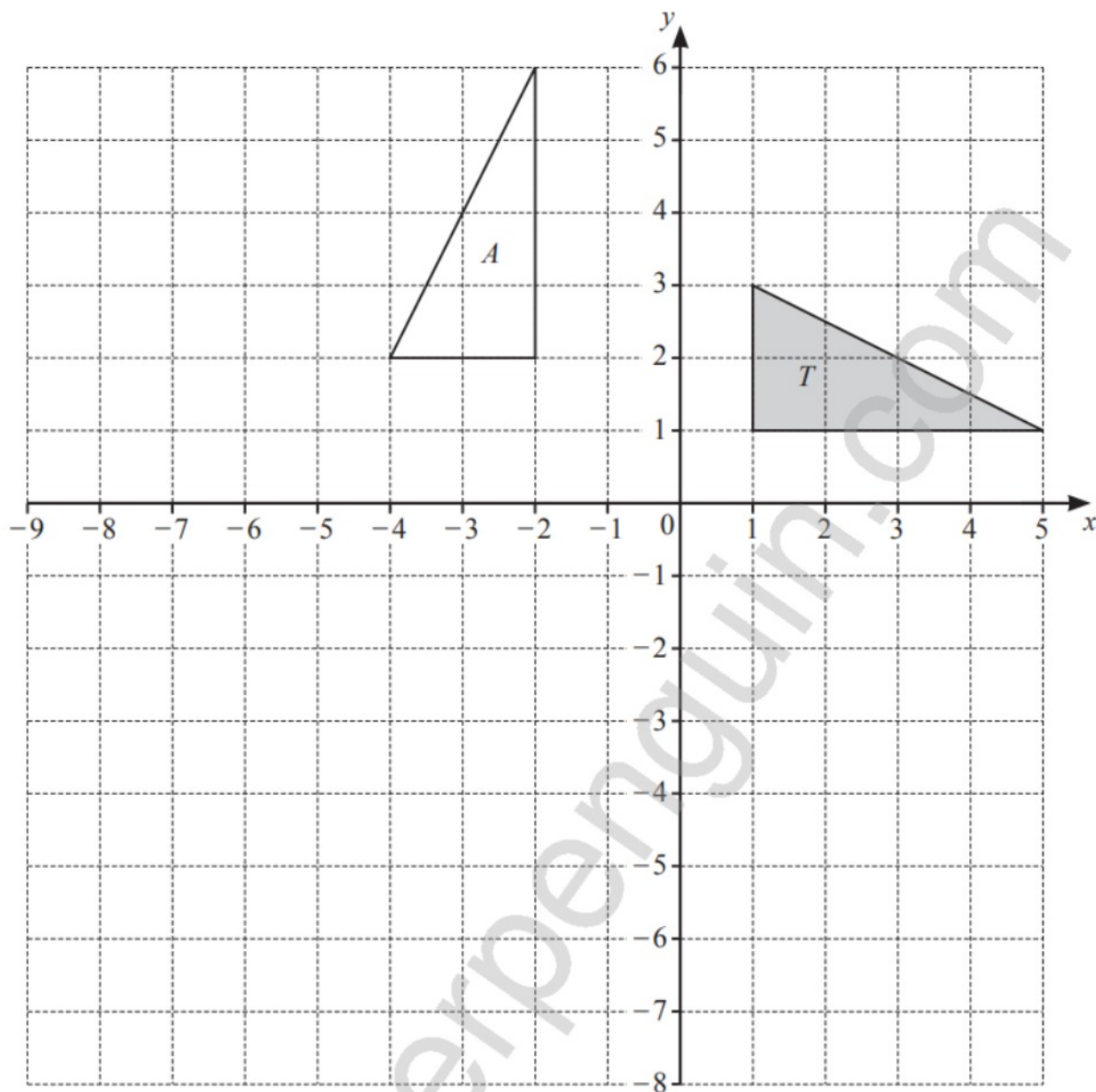
.....  
 ..... [3]

- (b) shape *A* onto shape *C*,

.....  
 ..... [2]

- (c) shape *A* onto shape *D*.

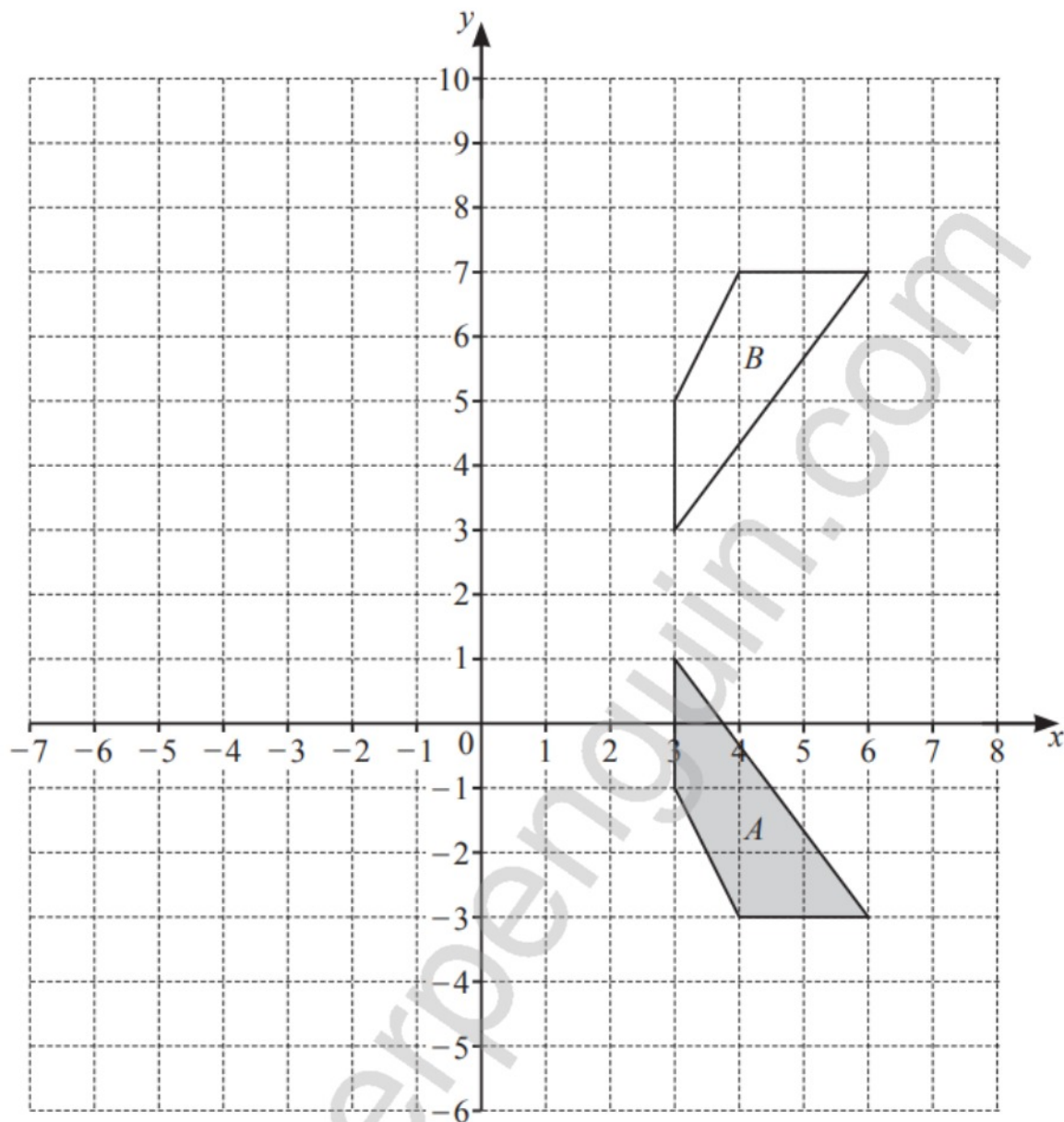
.....  
 ..... [3]



- (a) Draw the reflection of triangle  $T$  in the line  $y = -2$ . [2]
- (b) Draw the enlargement of triangle  $T$  with scale factor  $\frac{1}{2}$  and centre of enlargement  $(-5, -3)$ . [2]
- (c) Describe fully the **single** transformation that maps triangle  $T$  onto triangle  $A$ .

..... [3]

.....

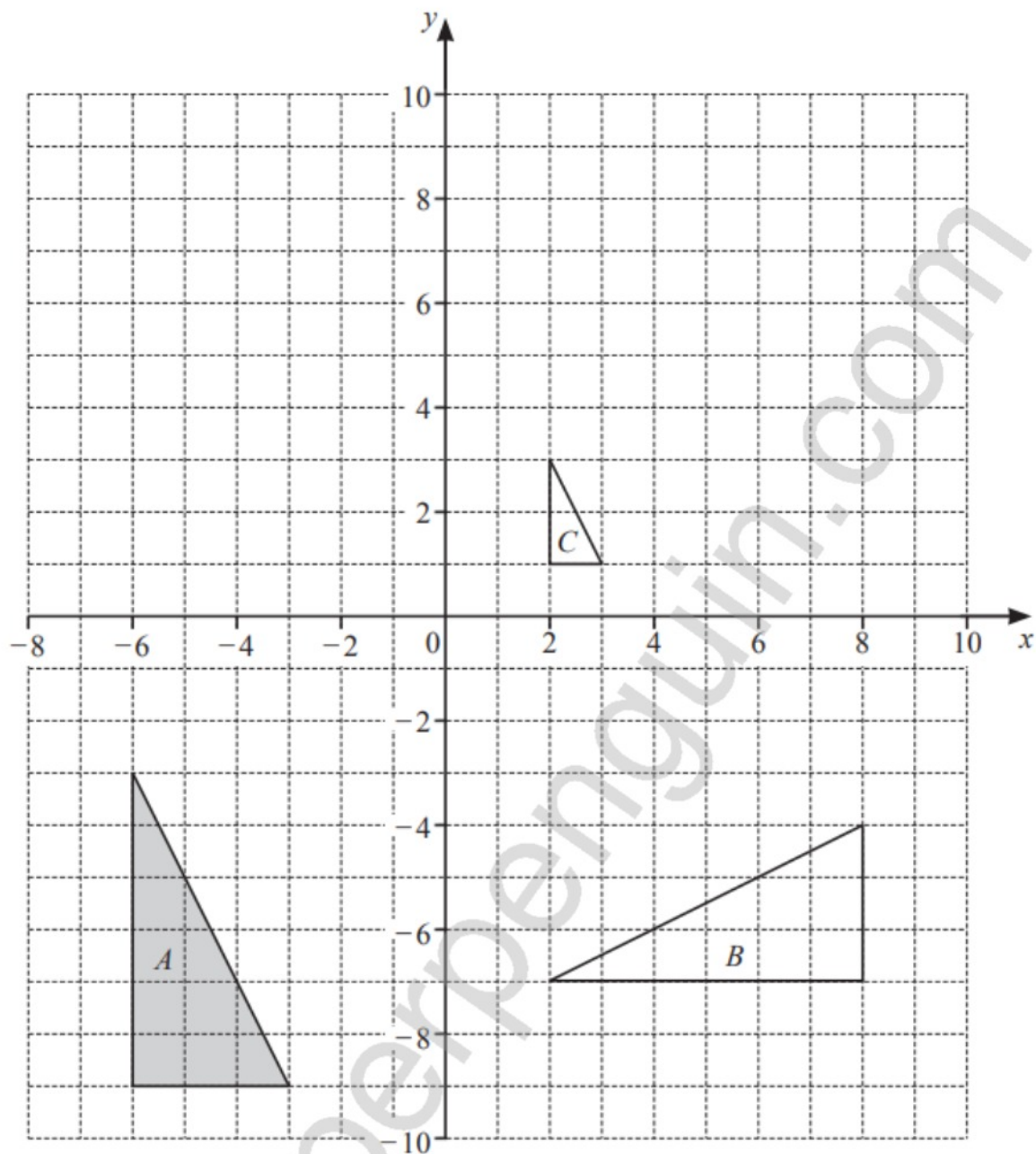


- (a) Describe fully the **single** transformation that maps shape *A* onto shape *B*.

..... [2]

- (b) Rotate shape *A*  $90^\circ$  clockwise about the point  $(-1, 2)$ . [2]

- (c) Enlarge shape *A* by scale factor  $-2$ , centre  $(2, 0)$ . [2]



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

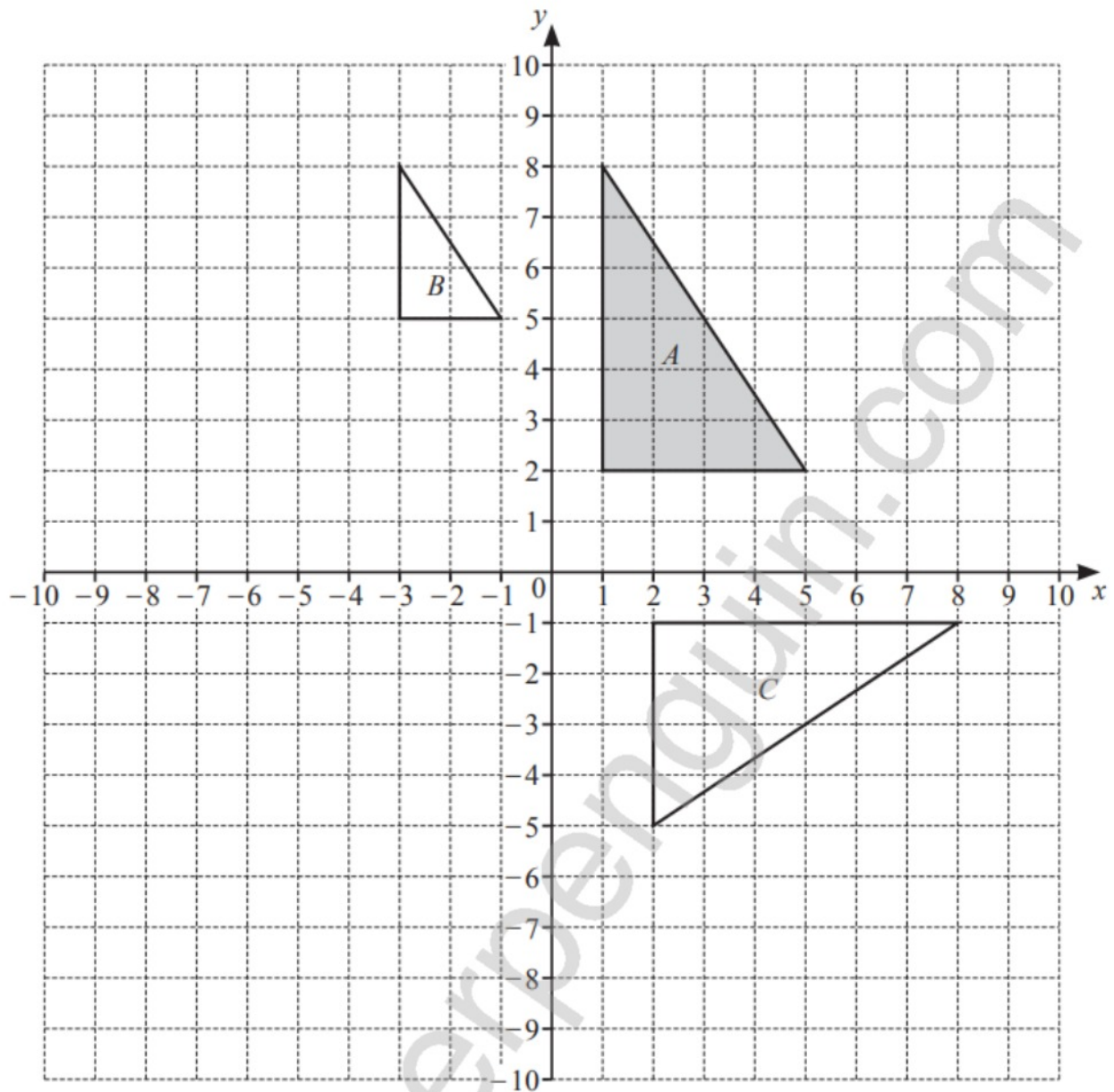
(i) triangle  $A$  onto triangle  $B$ ,

..... [3]

(ii) triangle  $A$  onto triangle  $C$ .

..... [3]

(b) Draw the image of triangle  $A$  after a translation by the vector  $\begin{pmatrix} 2 \\ 10 \end{pmatrix}$ . [2]



(a) (i) Draw the image of triangle  $A$  after a reflection in the line  $y = -x$ . [2]

(ii) Draw the image of triangle  $A$  after a translation by the vector  $\begin{pmatrix} -2 \\ -9 \end{pmatrix}$ . [2]

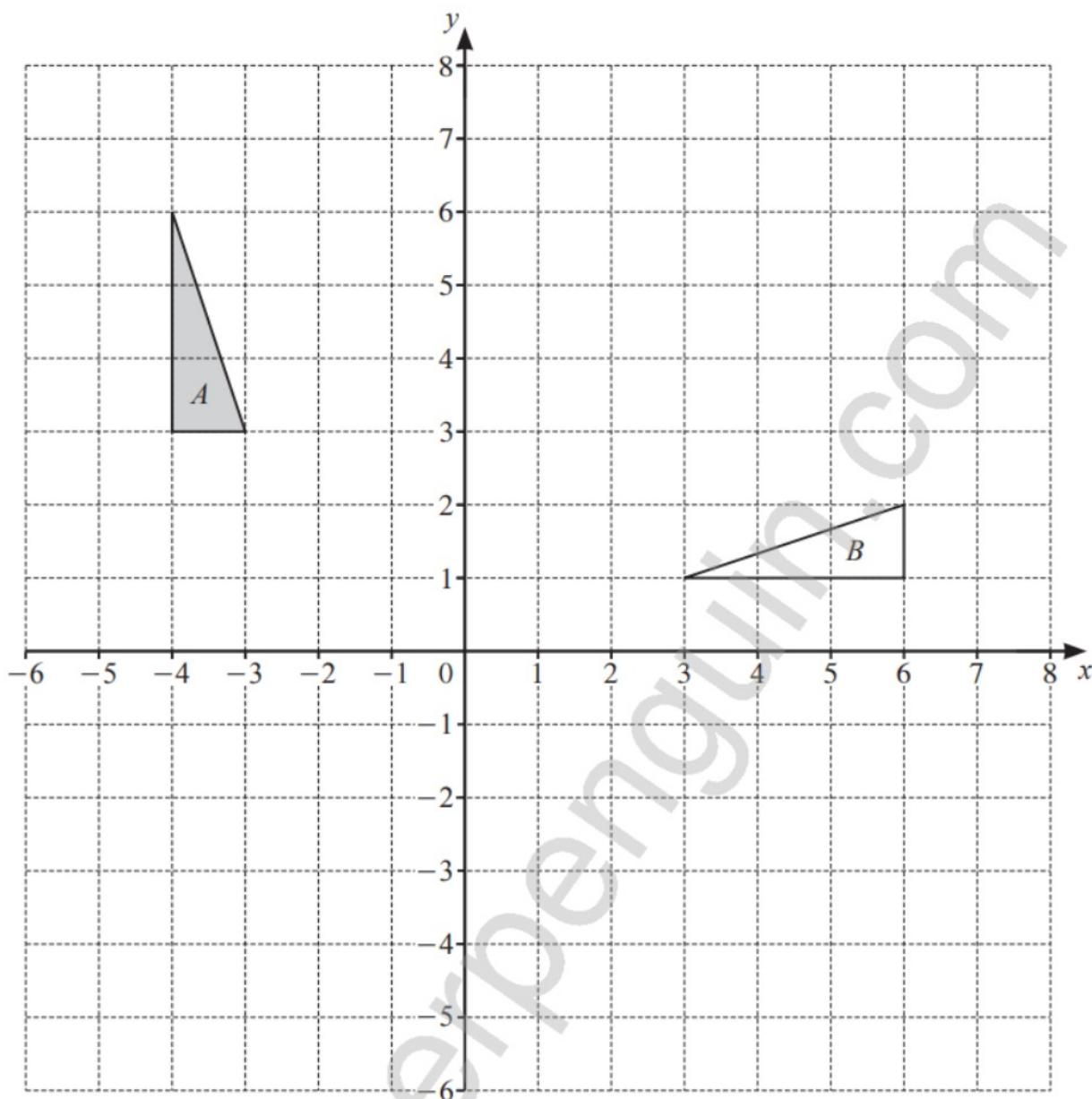
(b) Describe fully the **single** transformation that maps

(i) triangle  $A$  onto triangle  $B$ ,

..... [3]

(ii) triangle  $A$  onto triangle  $C$ .

..... [3]



- (a) Describe fully the **single** transformation that maps triangle  $A$  onto triangle  $B$ .

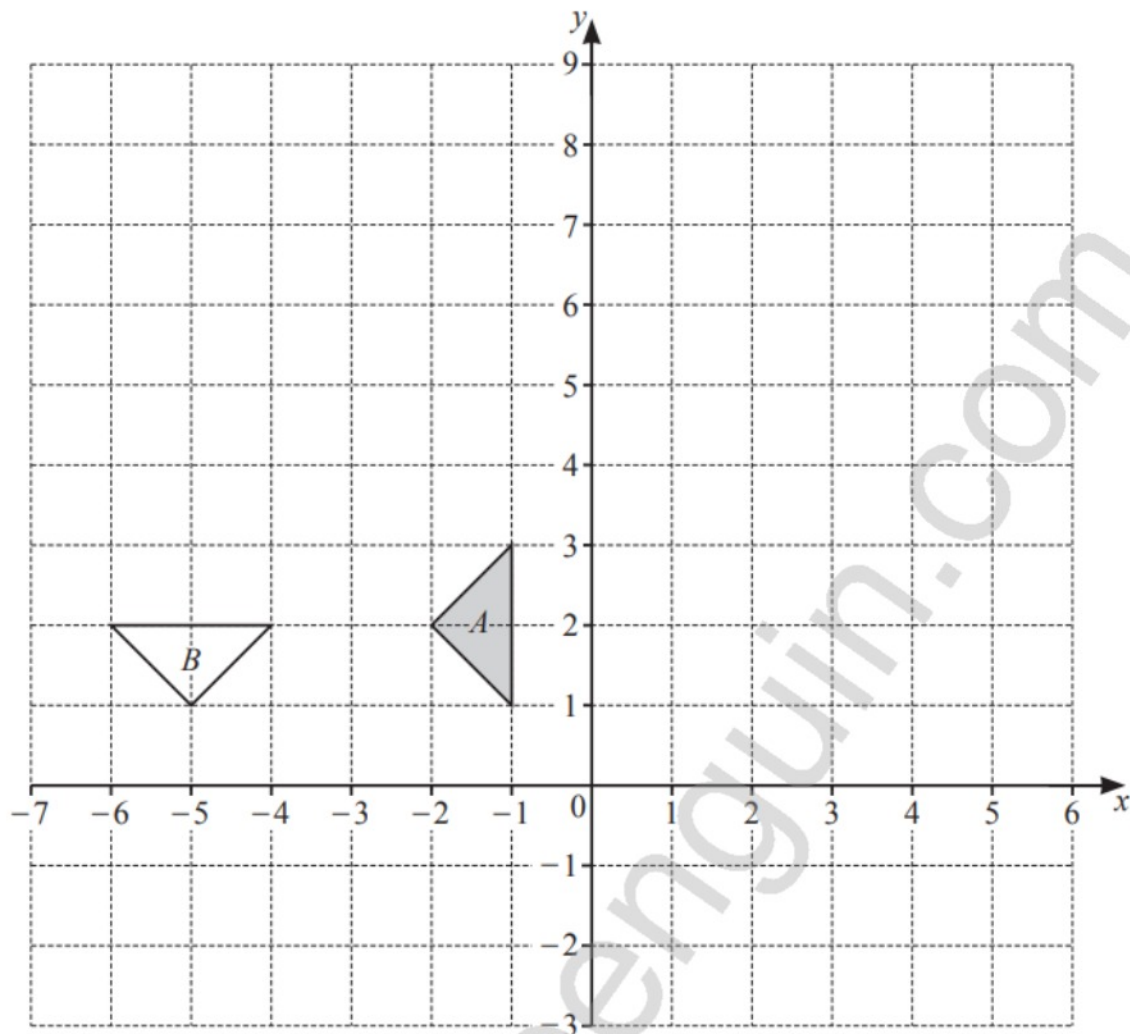
..... [3]

- (b) Draw the image of triangle  $A$  after

(i) a reflection in the line  $y = 1$  [2]

(ii) a translation by the vector  $\begin{pmatrix} 5 \\ -7 \end{pmatrix}$  [2]

(iii) an enlargement, scale factor 2, centre  $(-4, 5)$ . [2]



(a) On the grid, draw the image of triangle  $A$  after

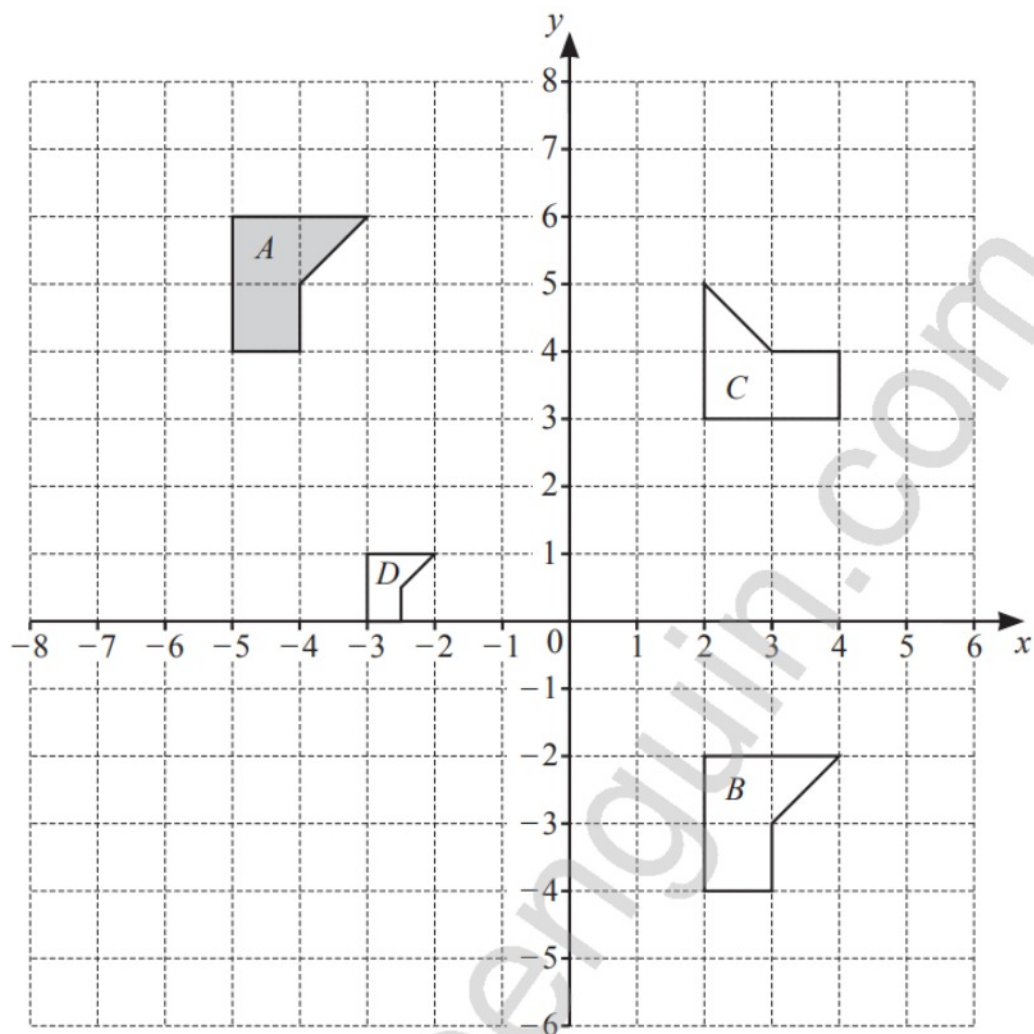
(i) a translation by the vector  $\begin{pmatrix} -4 \\ 5 \end{pmatrix}$ , [2]

(ii) a reflection in the line  $x = 1$ , [2]

(iii) an enlargement, scale factor 2 and centre  $(-5, -2)$ . [2]

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

..... [3]  
 .....



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

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

..... [2]

(ii) shape *A* onto shape *C*,

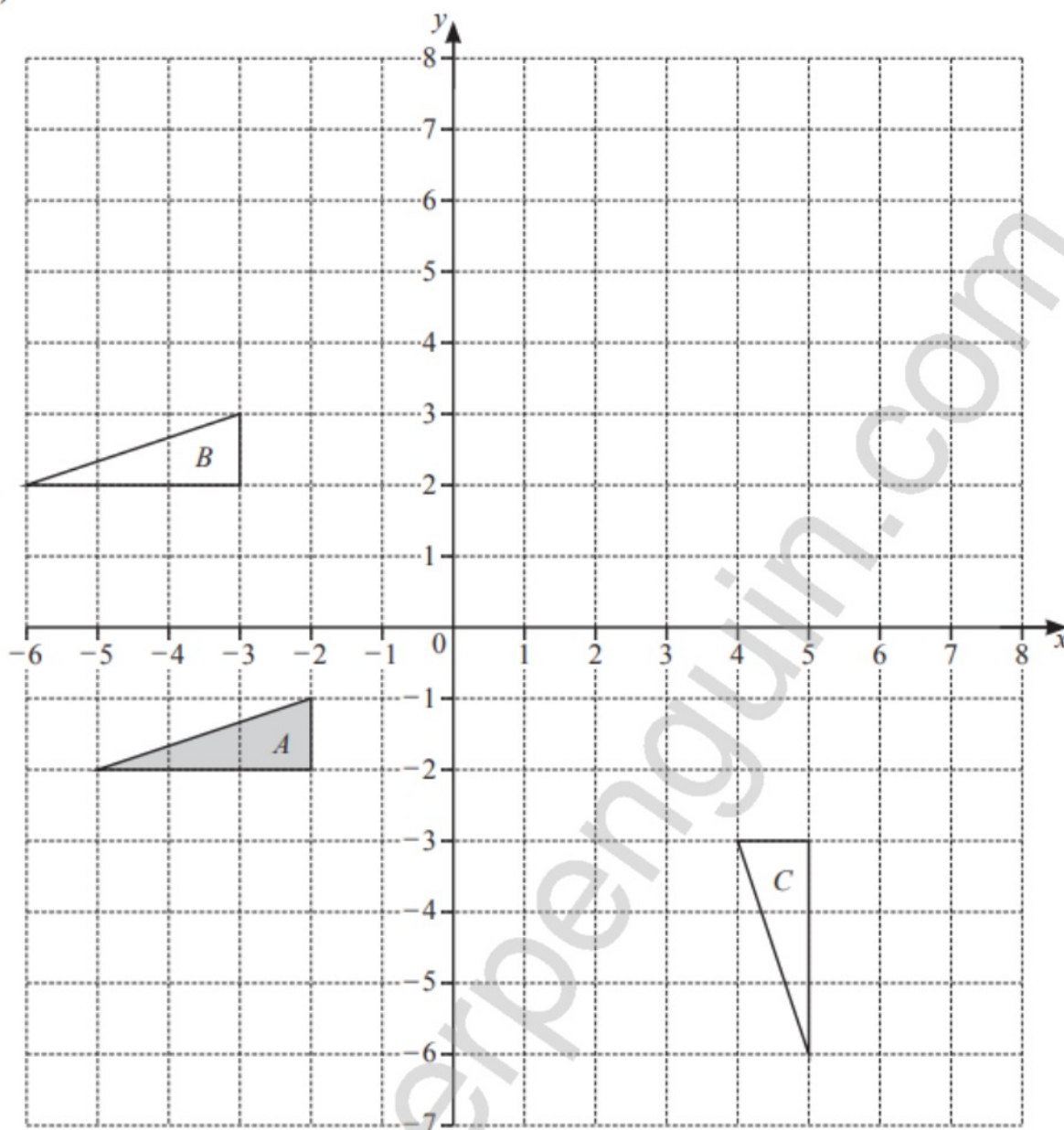
..... [3]

(iii) shape *A* onto shape *D*.

..... [3]

(b) On the grid, draw the image of shape *A* after a reflection in the line  $y = x + 8$ . [2]

(b)



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

(a) triangle *A* onto triangle *B*,

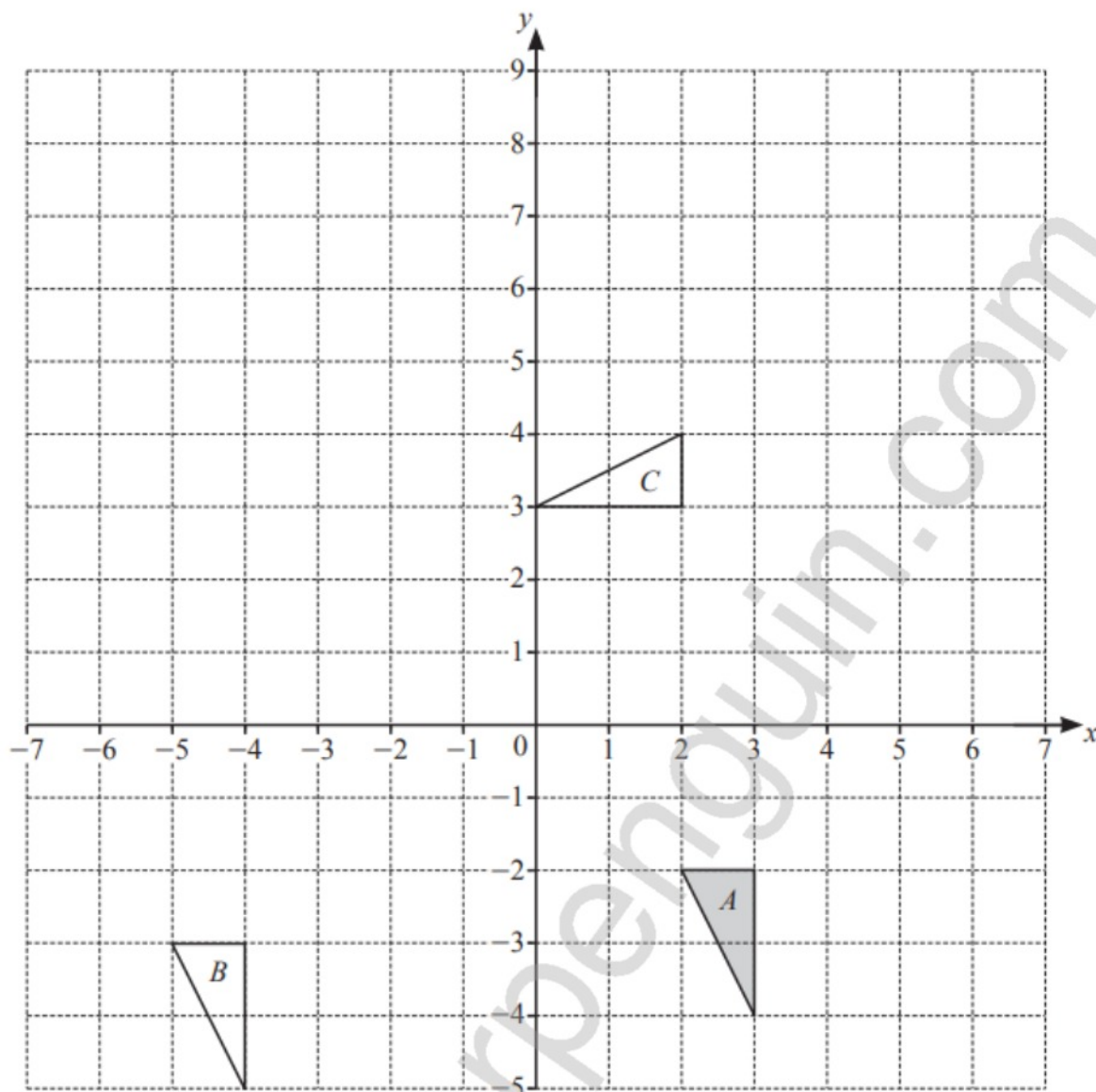
.....  
..... [2]

(b) triangle *A* onto triangle *C*.

.....  
..... [3]

(ii) (a) Draw the image of triangle *A* after reflection in  $y = 2$ . [2]

(b) Draw the image of triangle *A* after enlargement by scale factor  $-2$ , centre  $(-1, 1)$ . [2]



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

(i) shape *A* onto shape *B*

..... [2]

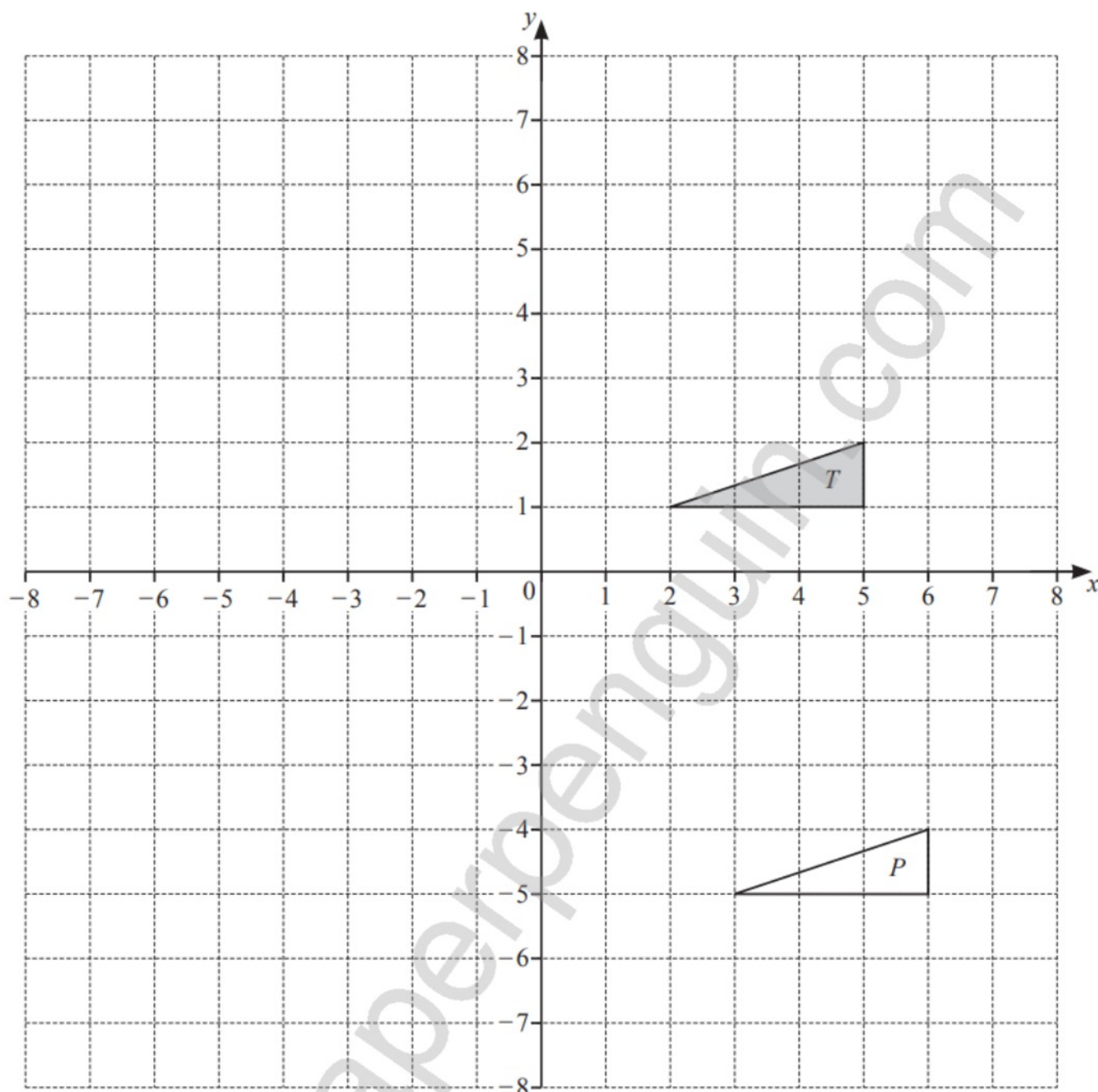
(ii) shape *A* onto shape *C*.

..... [3]

(b) On the grid, draw the image of

(i) shape *A* after a reflection in the line  $y = 2$  [2]

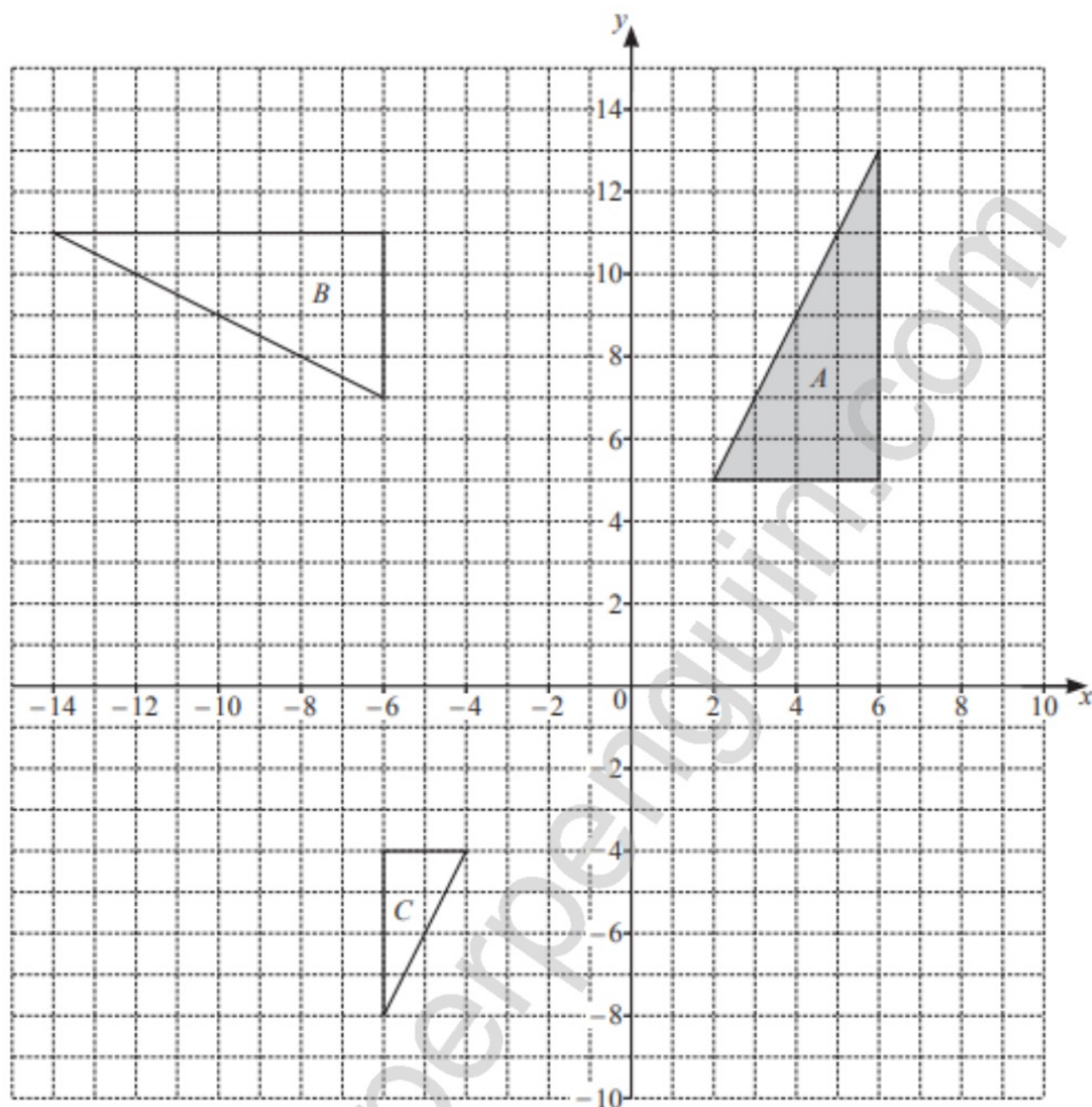
(ii) shape *A* after an enlargement, scale factor  $-2$ , centre  $(0, 0)$ . [2]



- (a) Describe fully the **single** transformation that maps triangle  $T$  onto triangle  $P$ .

.....  
 ..... [2]

- (b) (i) Reflect triangle  $T$  in the line  $x = 1$ . [2]  
 (ii) Rotate triangle  $T$  through  $90^\circ$  anticlockwise about  $(6, 0)$ . [2]  
 (iii) Enlarge triangle  $T$  by a scale factor of  $-2$ , centre  $(1, 0)$ . [2]



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

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

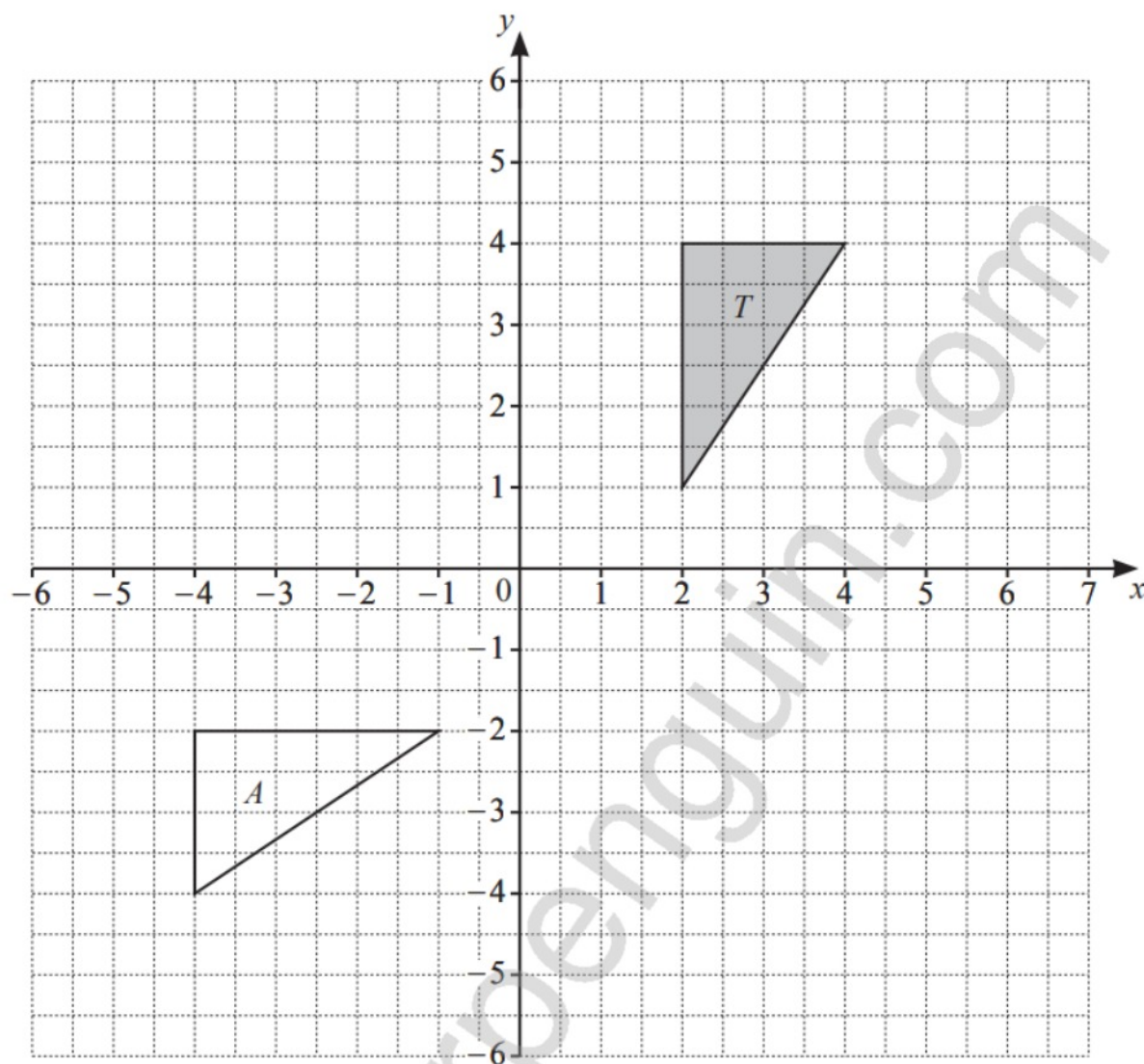
..... [3]

(ii) triangle *A* onto triangle *C*.

..... [3]

(b) Draw the image of triangle *A* after a translation by the vector  $\begin{pmatrix} -5 \\ -10 \end{pmatrix}$ . [2]

(c) Draw the image of triangle *A* after a reflection in the line  $y = 4$ . [2]



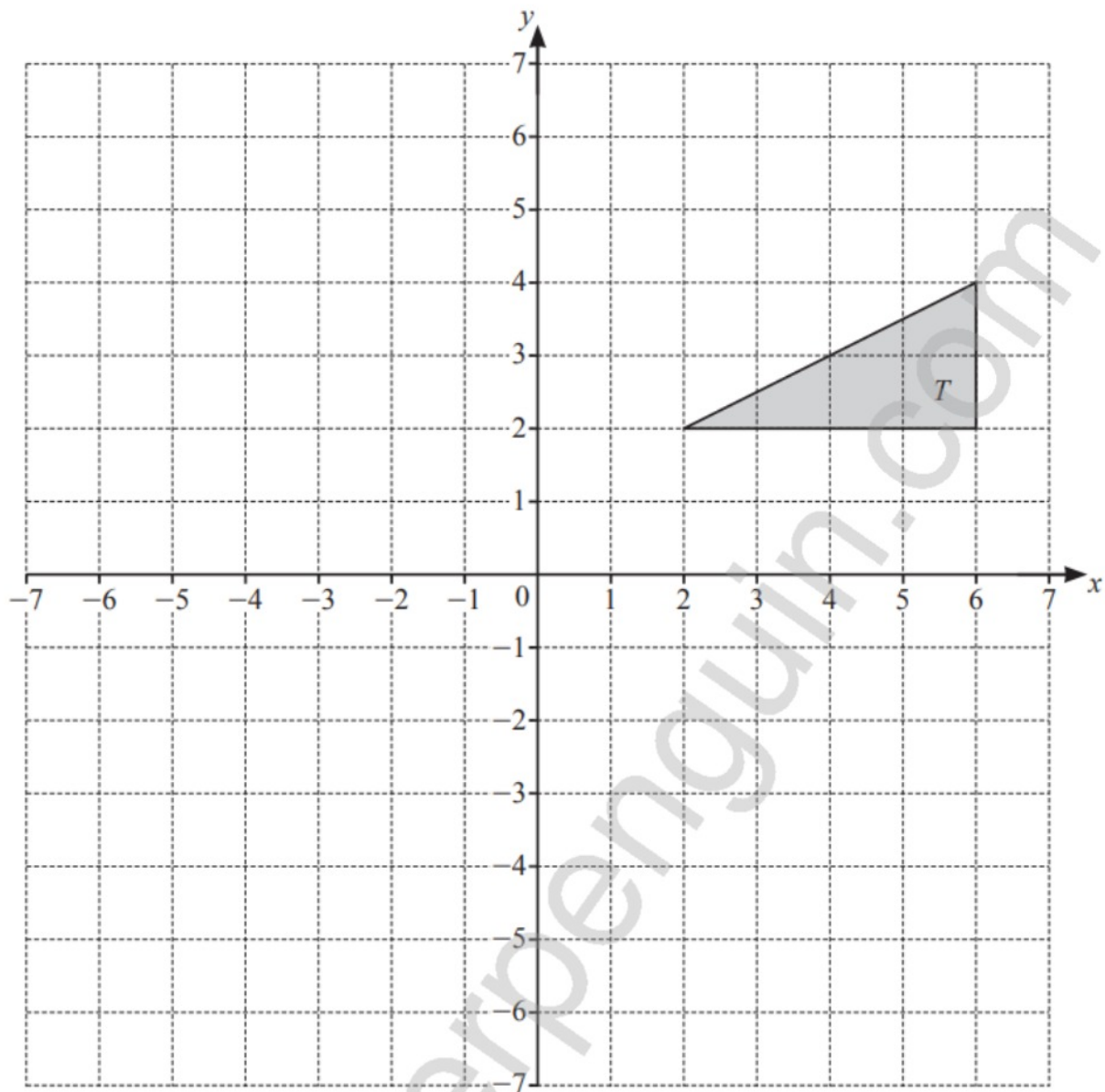
(a) On the grid, draw the image of

- (i) triangle  $T$  after a translation by the vector  $\begin{pmatrix} 2 \\ -1 \end{pmatrix}$ , [2]
- (ii) triangle  $T$  after a rotation,  $90^\circ$  clockwise, about the origin, [2]
- (iii) triangle  $T$  after an enlargement, scale factor  $-\frac{1}{2}$ , centre  $(-2, 3)$ . [2]

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

..... [2]

.....



- (a) (i) Translate triangle  $T$  by the vector  $\begin{pmatrix} -7 \\ 1 \end{pmatrix}$ . Label the image  $K$ . [2]

(ii) Describe fully the **single** transformation that maps triangle  $K$  onto triangle  $T$ .

..... [1]  
 .....

- (b) Reflect triangle  $T$  in the line  $y = 4$ . [2]

- (c) Rotate triangle  $T$  through  $90^\circ$  clockwise about  $(0, 0)$ . [2]

- (d) (i) Enlarge triangle  $T$  by scale factor  $-\frac{1}{2}$ , centre  $(0, 0)$ . Label the image  $P$ . [2]

(ii) Describe fully the **single** transformation that maps triangle  $P$  onto triangle  $T$ .

..... [2]  
 .....