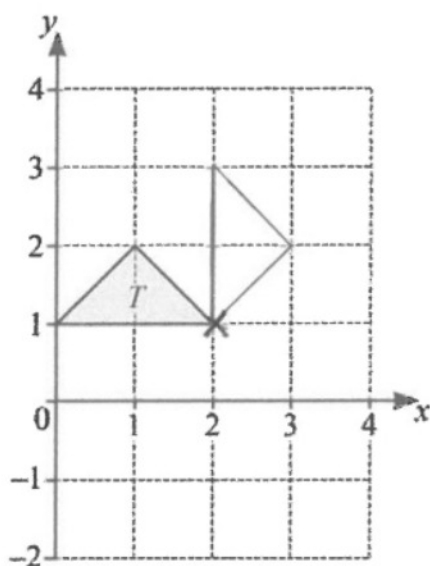


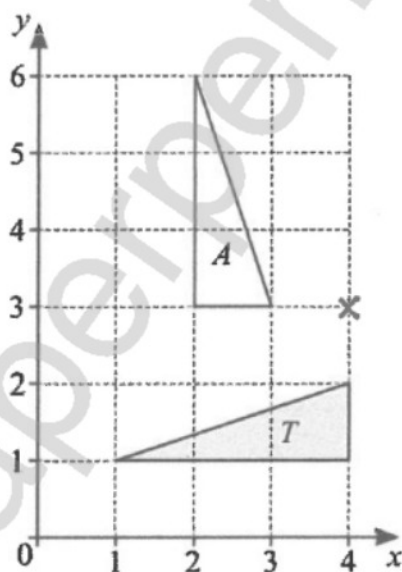
6



Rotate triangle T 90° clockwise about the point $(2, 1)$.

[2]

15

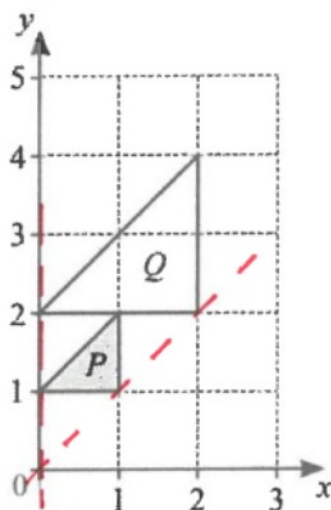


Describe fully the **single** transformation that maps triangle T onto triangle A .

Rotation, 90° clockwise, Centre $(4, 3)$

[3]

12 (a)

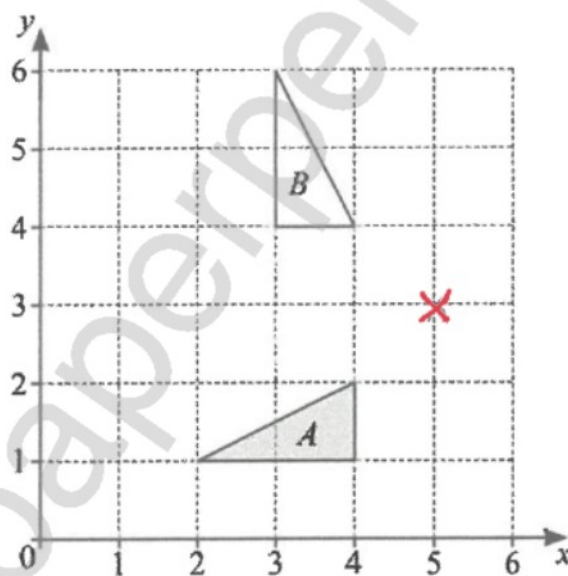


Describe fully the **single** transformation that maps triangle *P* onto triangle *Q*.

..... Enlargement, scale factor 2, centre (0, 0)

[3]

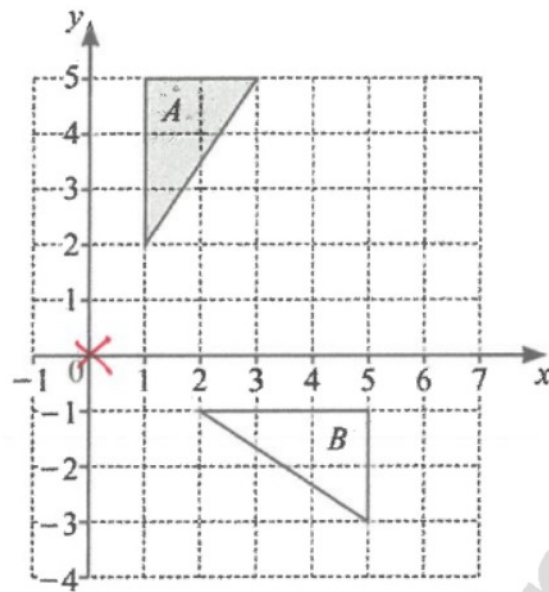
14



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

..... Rotation, 90° clockwise, centre (5, 3)

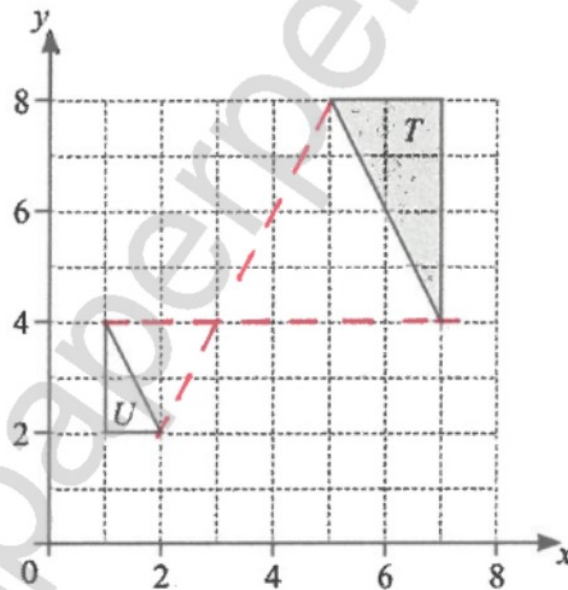
[3]



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

Rotation, 90° clockwise, centre $(0,0)$

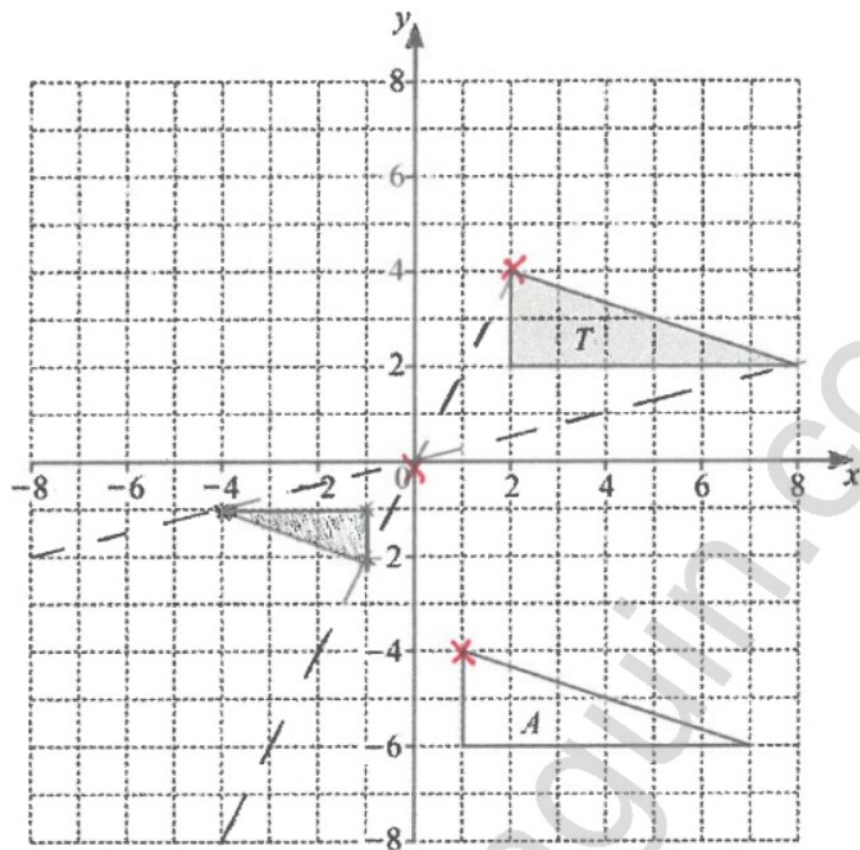
[3]



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

Enlargement, scale factor $\frac{1}{2}$, centre $(3,4)$

[3]



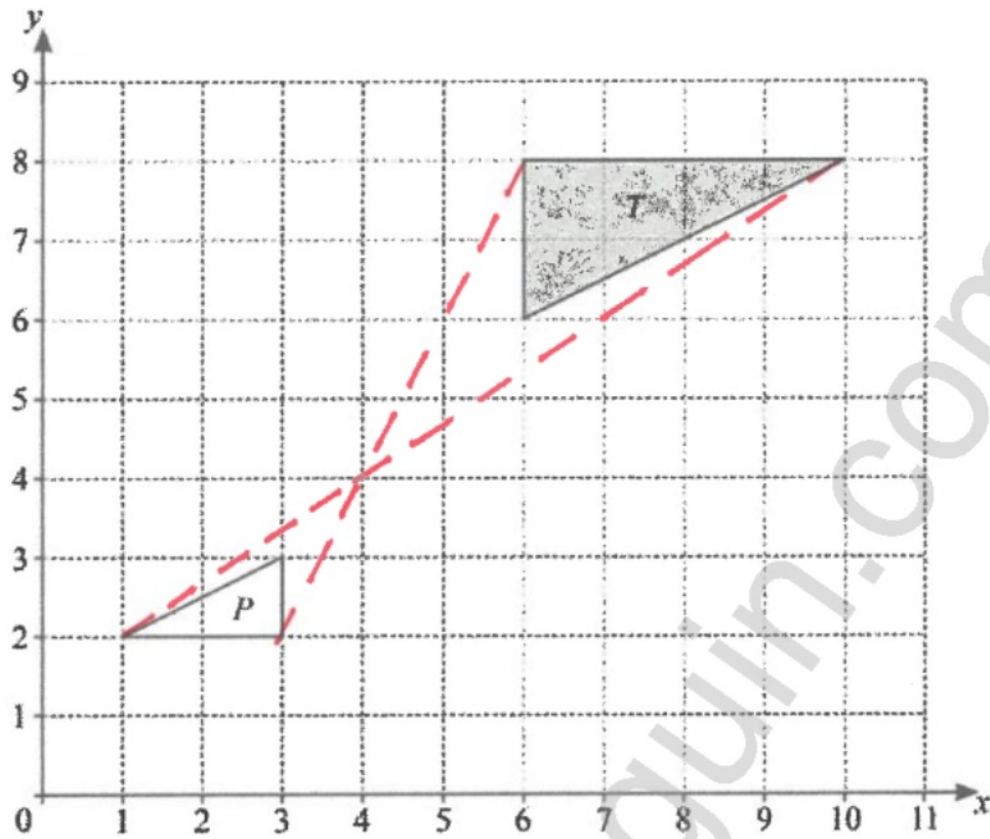
- (a) Describe fully the **single** transformation that maps triangle T onto triangle A .

Translation by $\begin{pmatrix} -1 \\ -8 \end{pmatrix}$

[2]

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

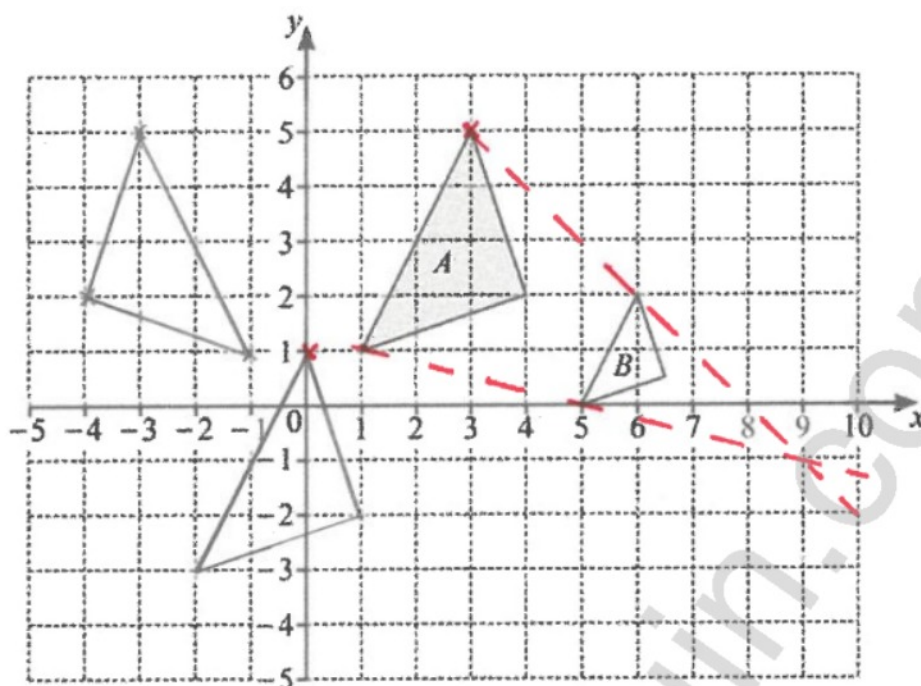
[2]



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

Enlargement, scale factor $-\frac{1}{2}$, centre $(4, 4)$

[3]



(a) On the grid, draw the image of

(i) triangle A after a reflection in the y -axis,

[1]

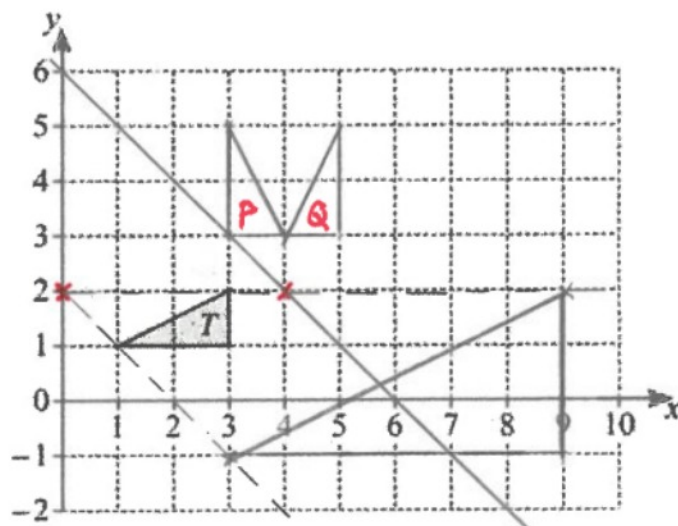
(ii) triangle A after a translation by the vector $\begin{pmatrix} -3 \\ -4 \end{pmatrix}$.

[2]

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

Enlargement, scale factor $\frac{1}{2}$, centre $(9, -1)$

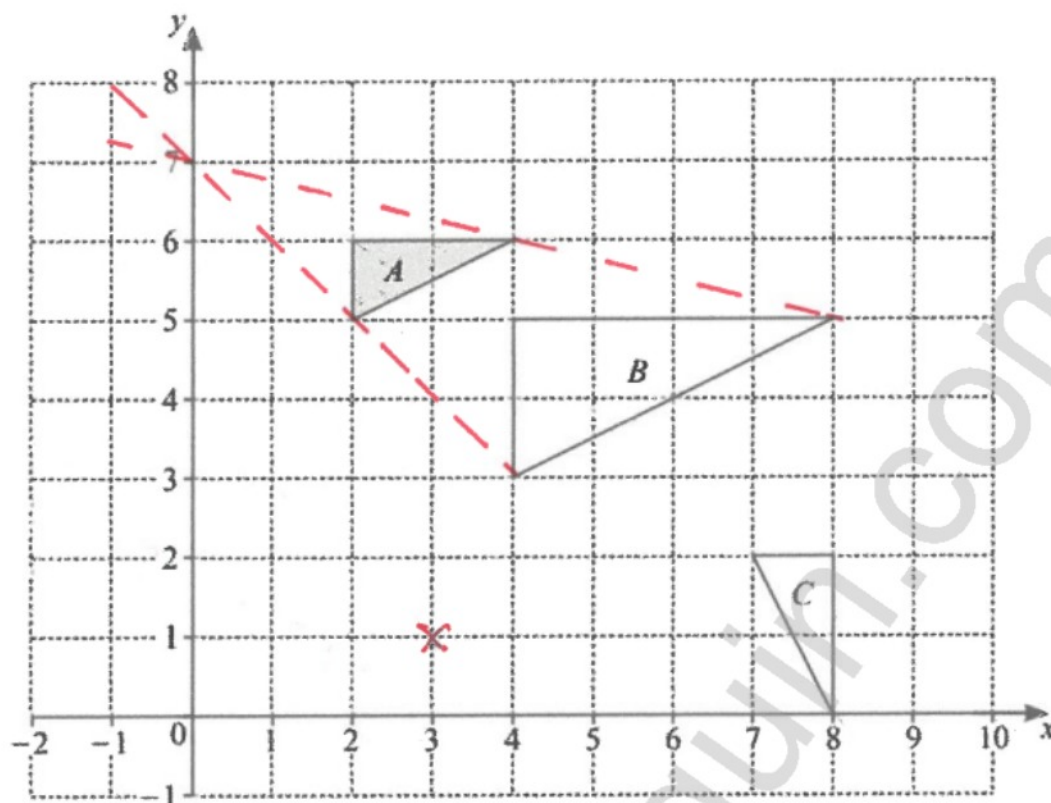
[3]



- (i) Enlarge triangle T by scale factor 3, centre $(0, 2)$. [2]
- (ii) (a) Rotate triangle T about $(4, 2)$ by 90° 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 .

Reflection in the line $x = 4$

[2]



Describe the **single** transformation that maps

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

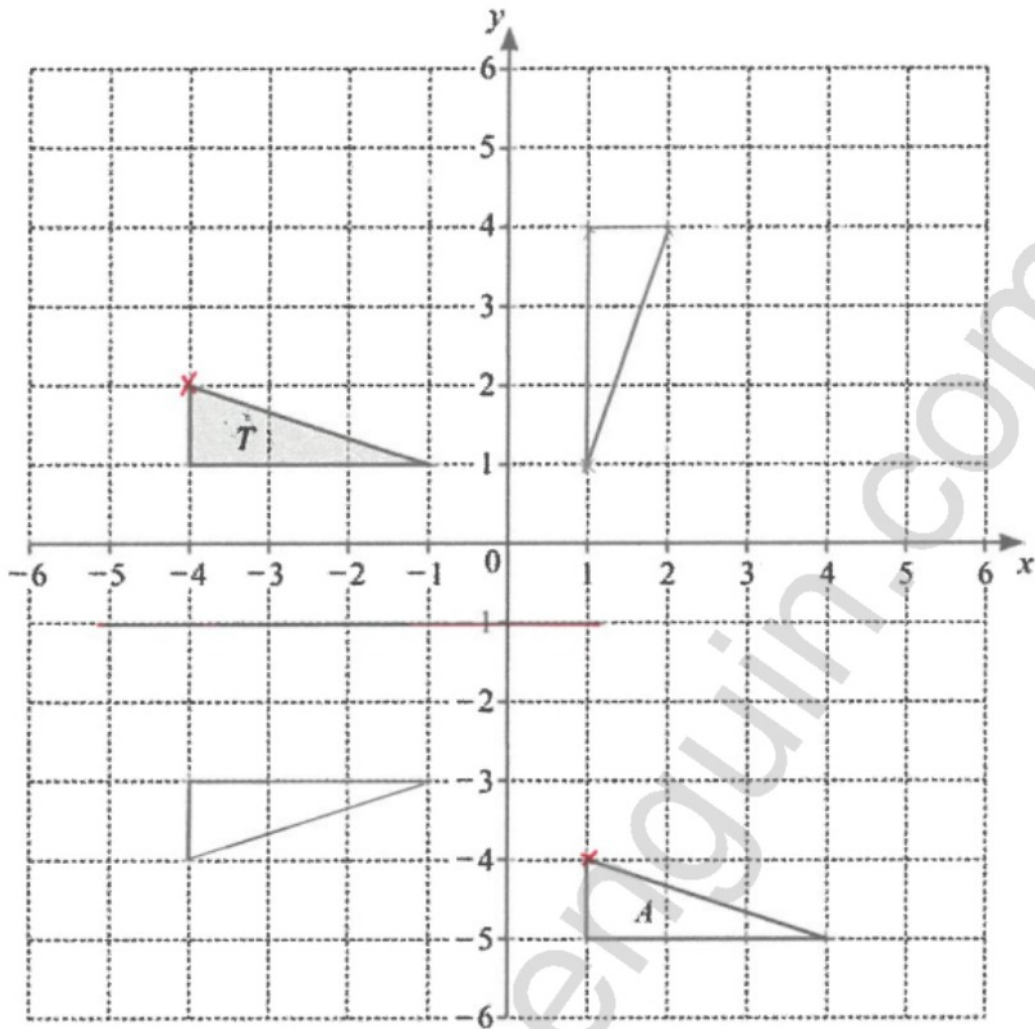
Enlargement, scale factor 2, centre (0, 7)

[3]

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

Rotation, 90° clockwise, centre (3, 1)

[3]

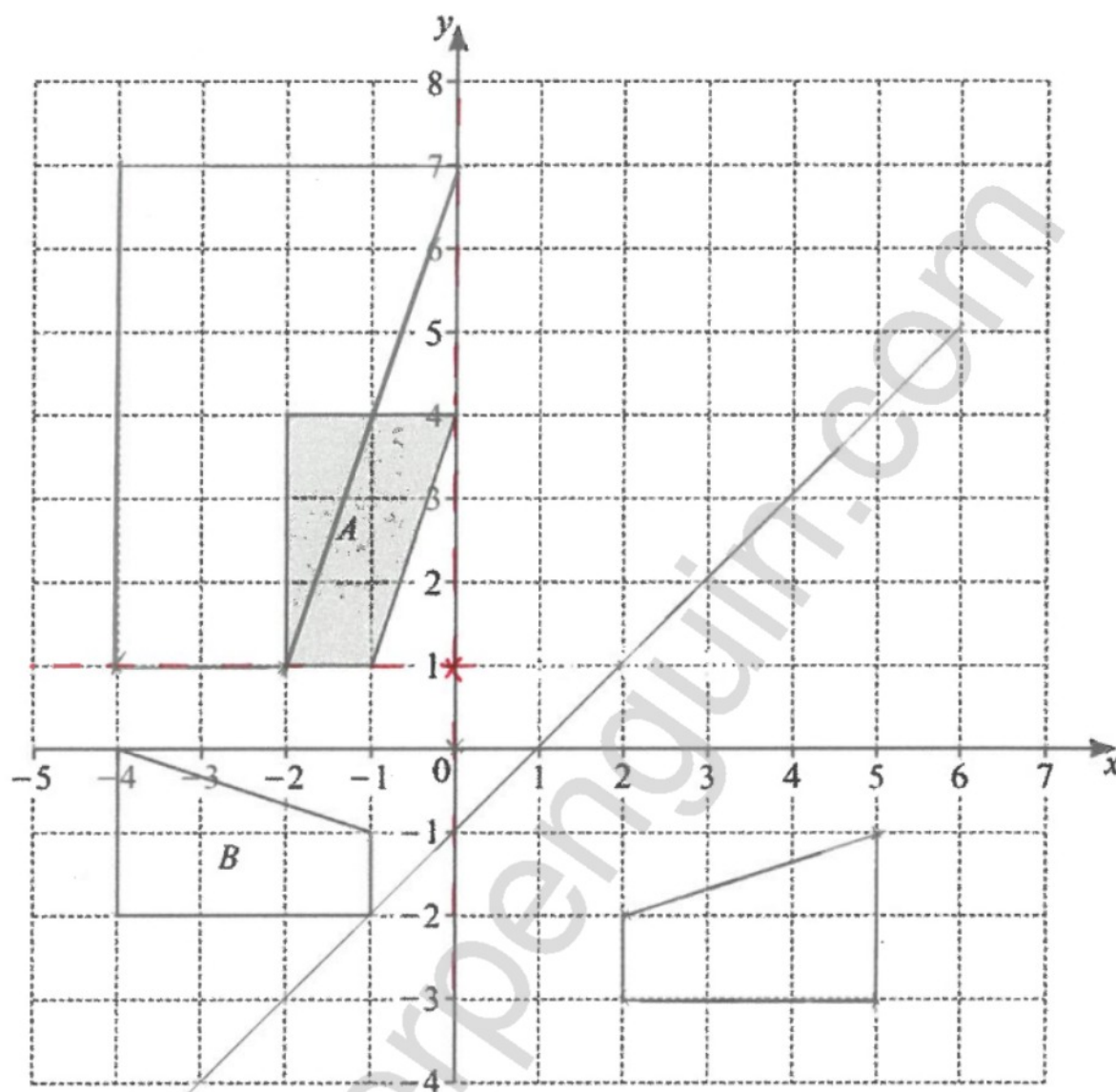


- (a) Draw the image of triangle T after a reflection in the line $y = -1$. [2]
- (b) Draw the image of triangle T after a rotation through 90° clockwise about $(0, 0)$. [2]
- (c) Describe fully the single transformation that maps triangle T onto triangle A .

Translation by $\begin{pmatrix} 5 \\ -6 \end{pmatrix}$

[2]

7 (a)



(i) On the grid, draw the image of

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

[2]

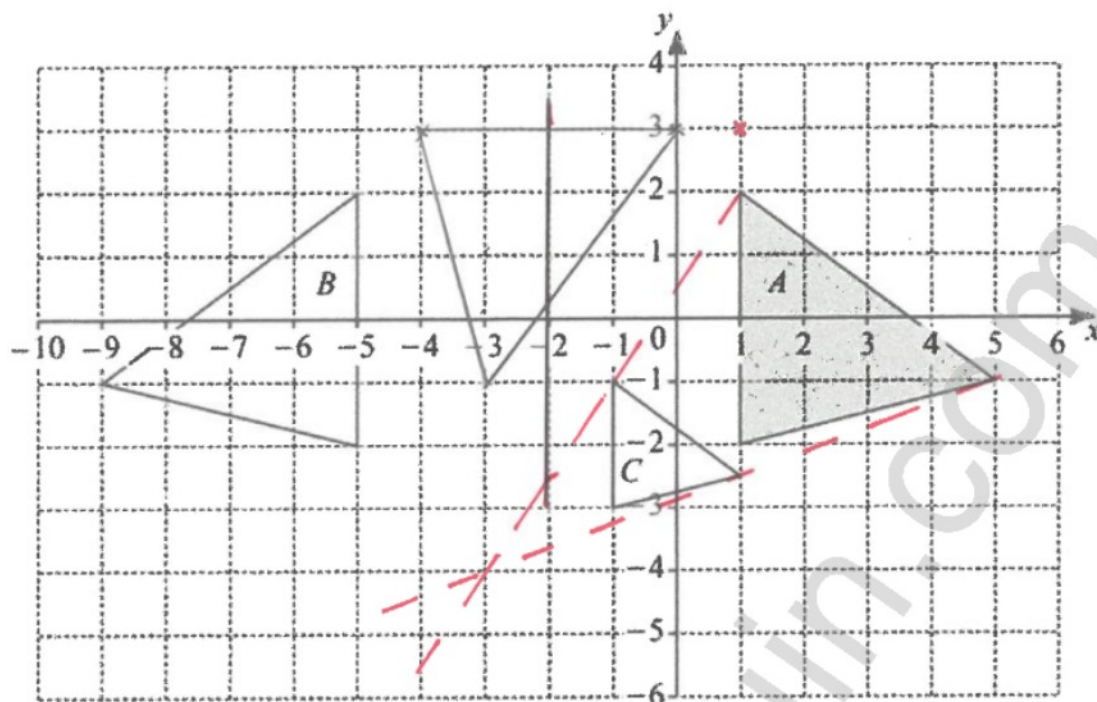
(b) shape A after a reflection in the line $y = x - 1$.

[3]

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

Rotation, 90° anti-clockwise, centre $(0, 0)$

[3]



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

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

Reflection in the line $x = -2$

[2]

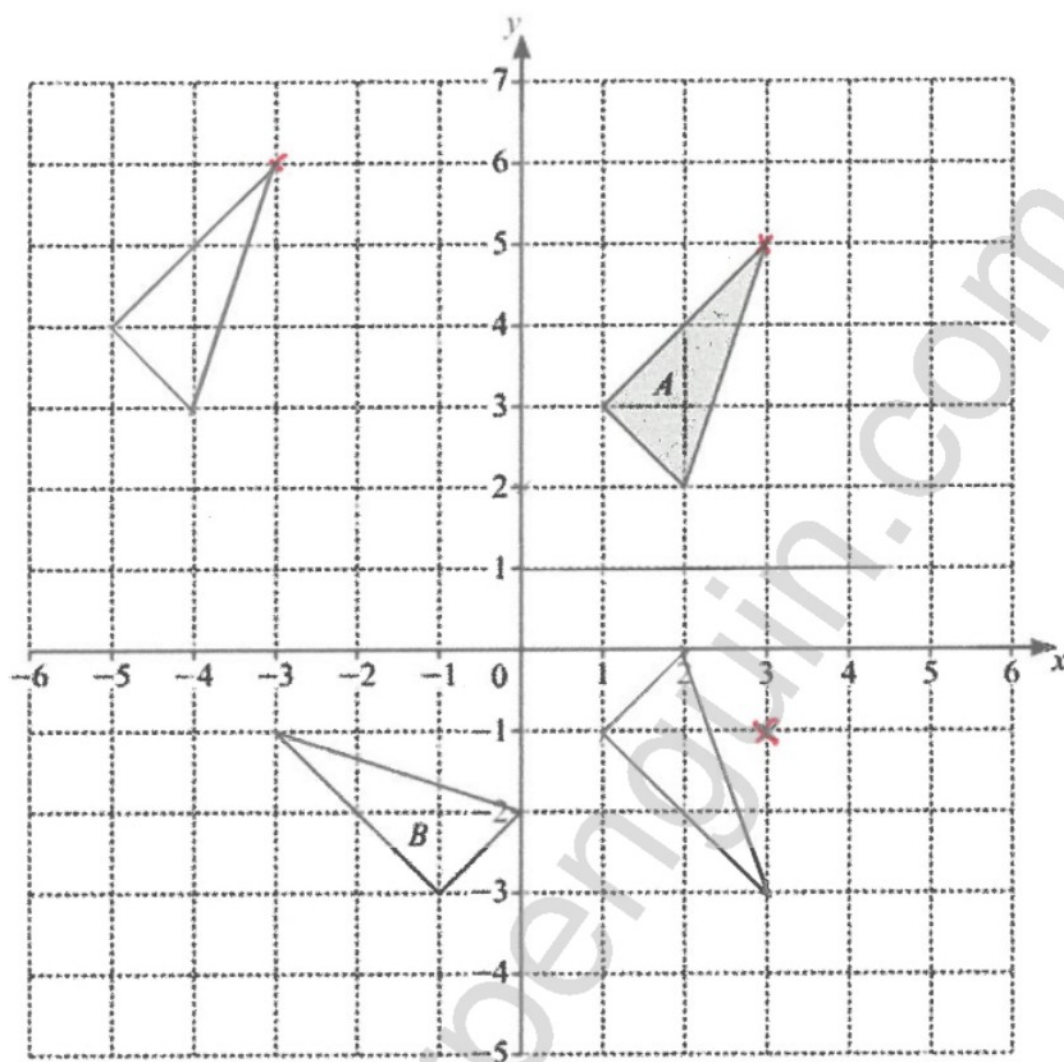
(ii) triangle *A* onto triangle *C*.

Enlargement, scale factor $\frac{1}{2}$, centre $(-3, 4)$

[3]

(b) Draw the image of triangle *A* after a rotation, 90° clockwise, about $(1, 3)$.

[2]



(a) Draw the image of

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

[2]

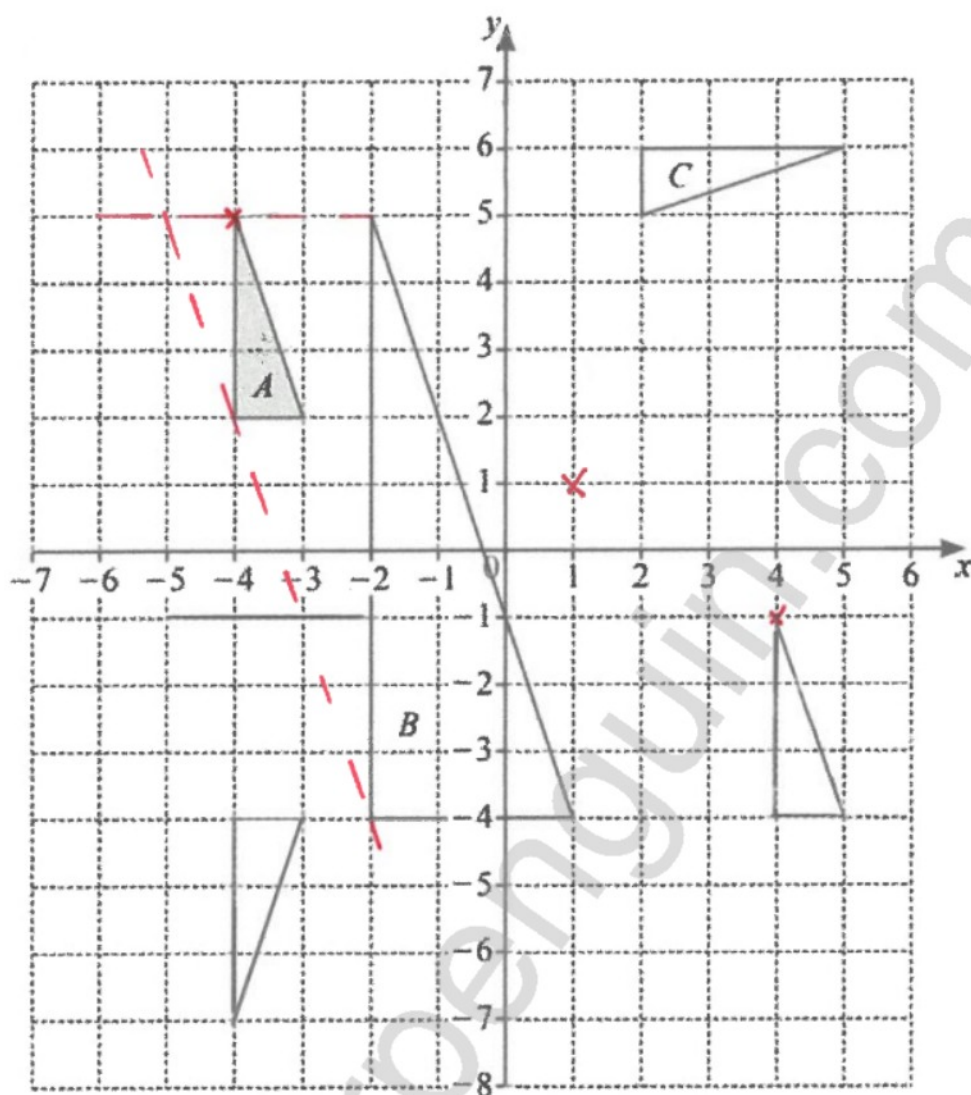
(ii) triangle A after a translation by the vector $\begin{pmatrix} -6 \\ 1 \end{pmatrix}$.

[2]

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

Rotation, 90° anti-clockwise, centre $(3, -1)$

[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*.

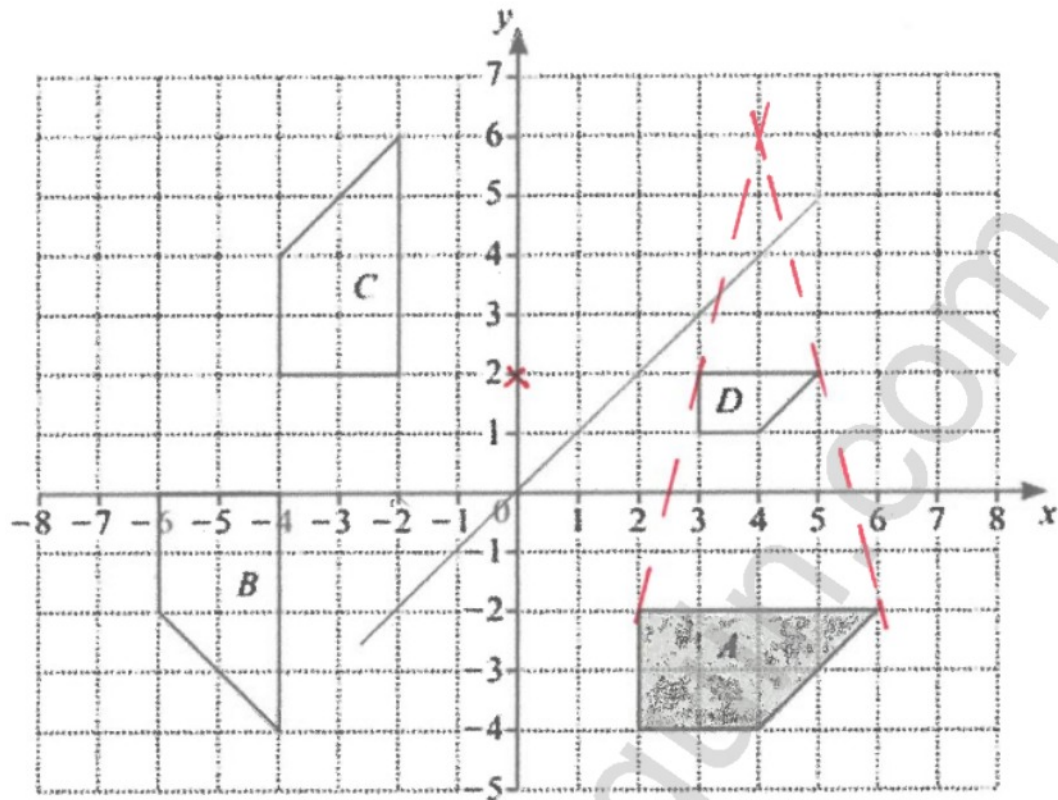
Enlargement, scale factor 3, centre $(-5, 5)$

[3]

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

Rotation, 90° clockwise, centre $(1, 1)$

[3]



Describe fully the **single** transformation that maps

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

Rotation, 90° clockwise, centre $(0, 2)$

[3]

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

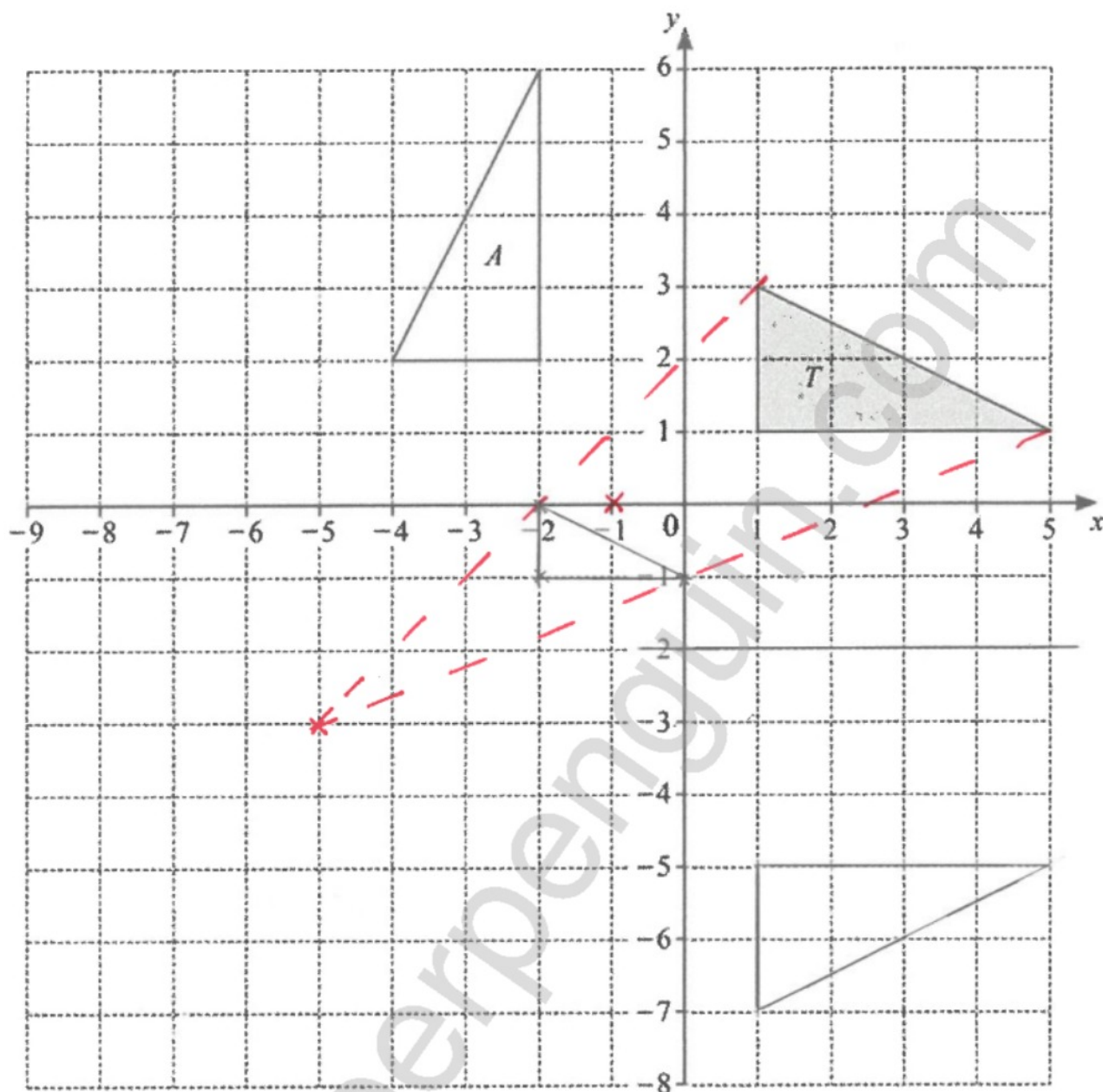
Reflection in the line $y = x$

[2]

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

Enlargement, scale factor $\frac{1}{2}$, centre $(4, 6)$

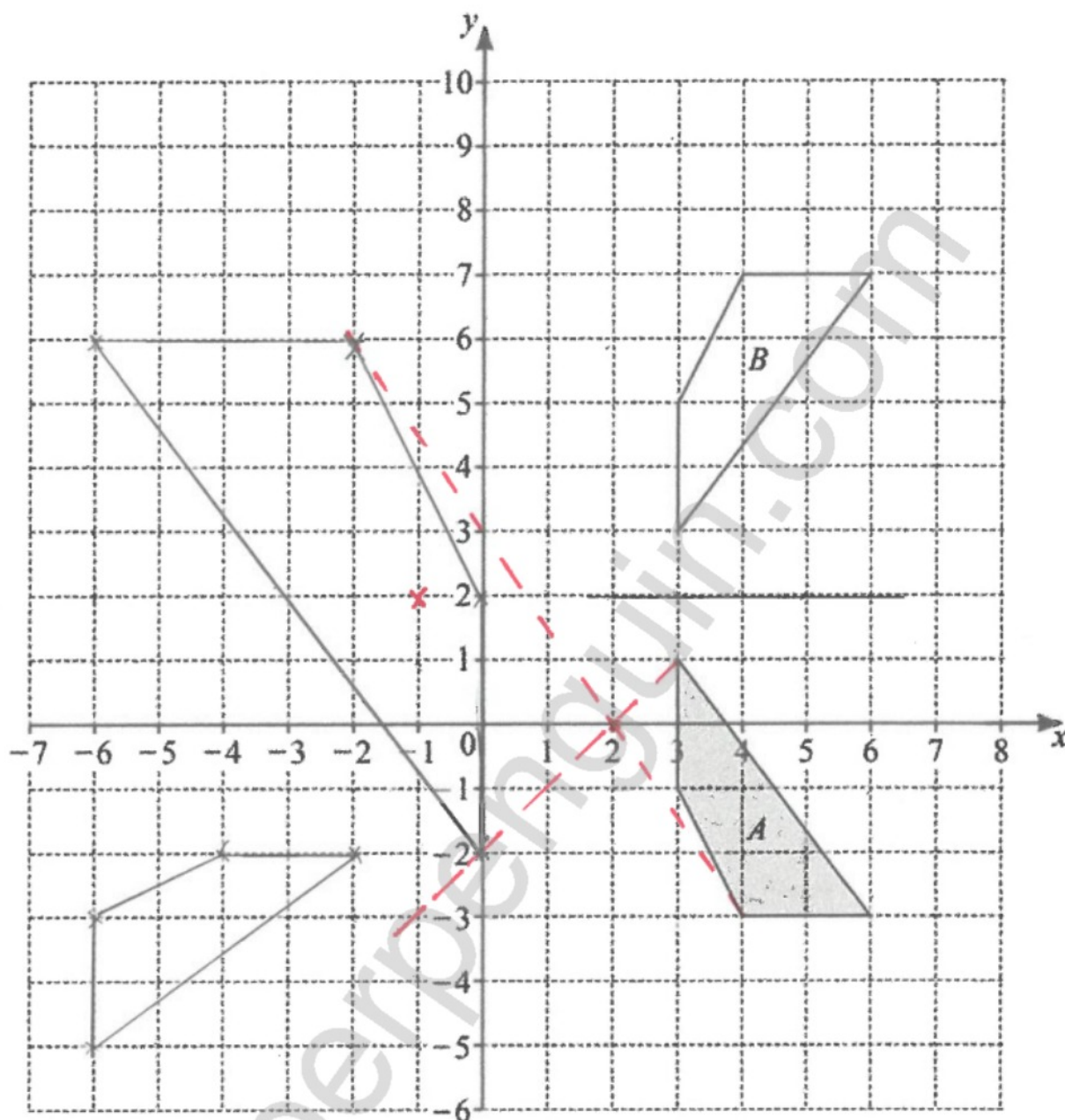
[3]



- (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 .

Rotation, 90° anti-clockwise, centre $(-1, 0)$

[3]



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

Reflection in the line $y = 2$

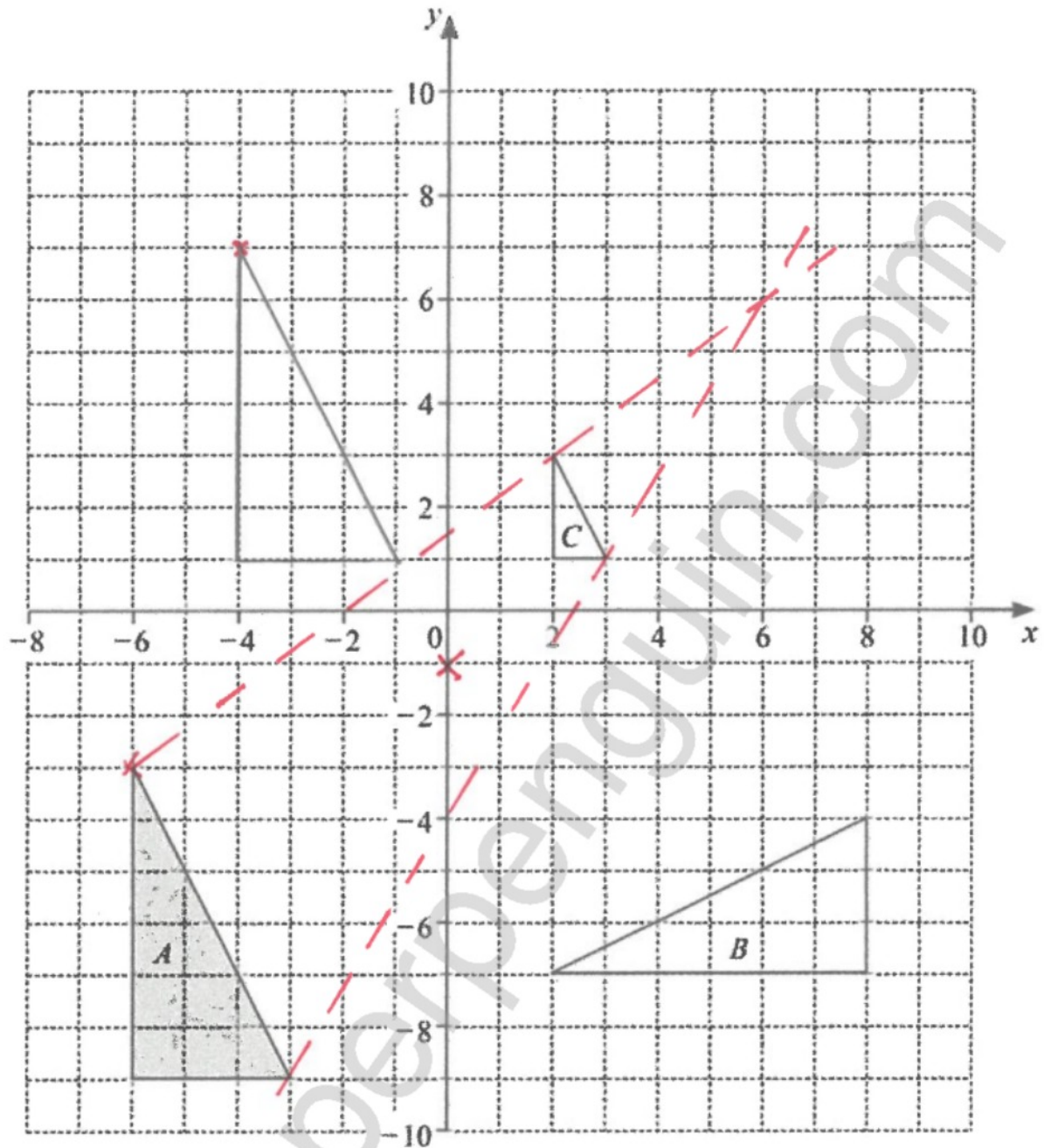
[2]

- (b) Rotate shape *A* 90° 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*,

Rotation, 90° anti-clockwise, Centre $(0, -1)$

[3]

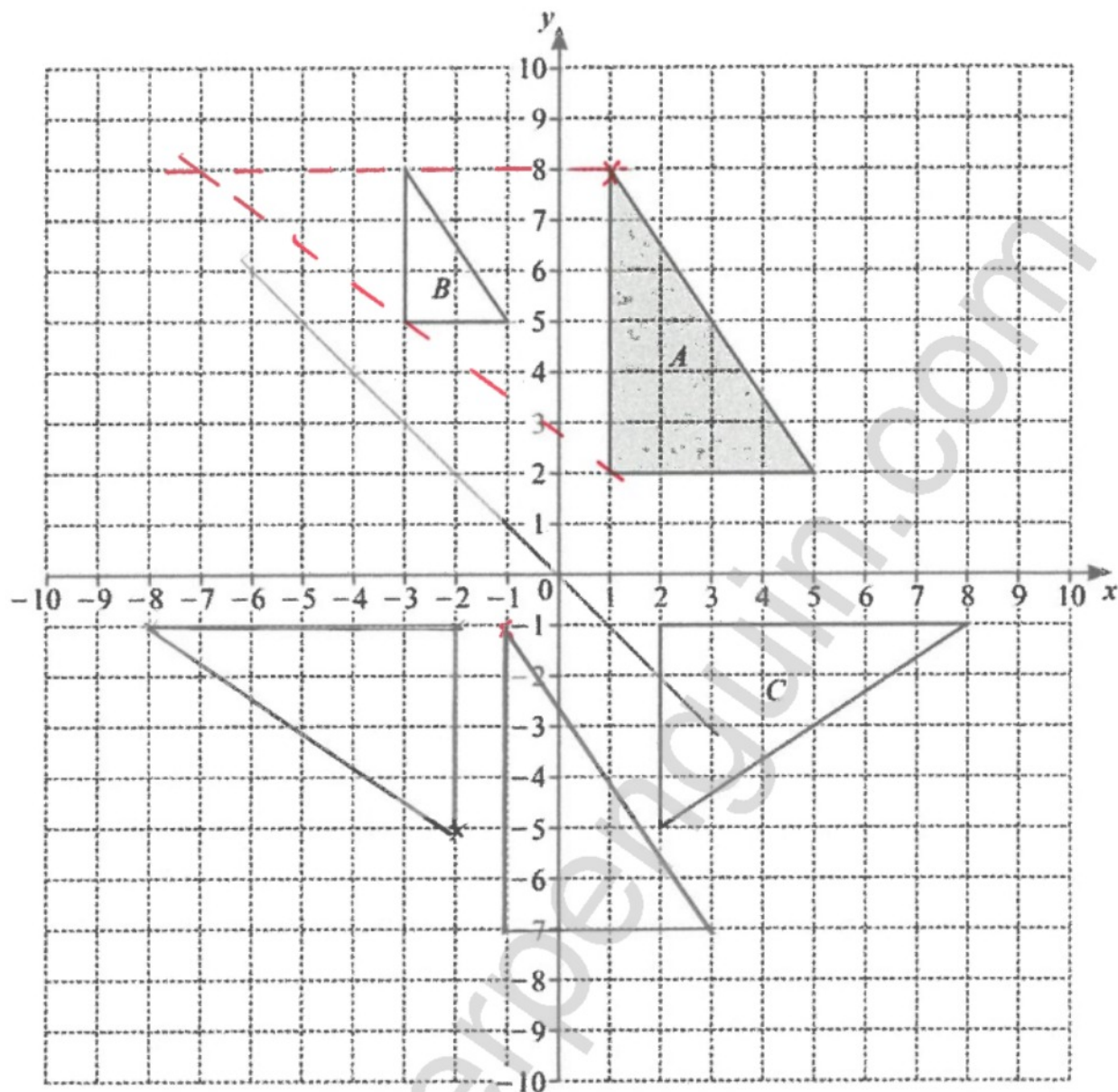
(ii) triangle *A* onto triangle *C*.

Enlargement, scale factor $\frac{1}{3}$, centre $(6, 6)$

[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 ,

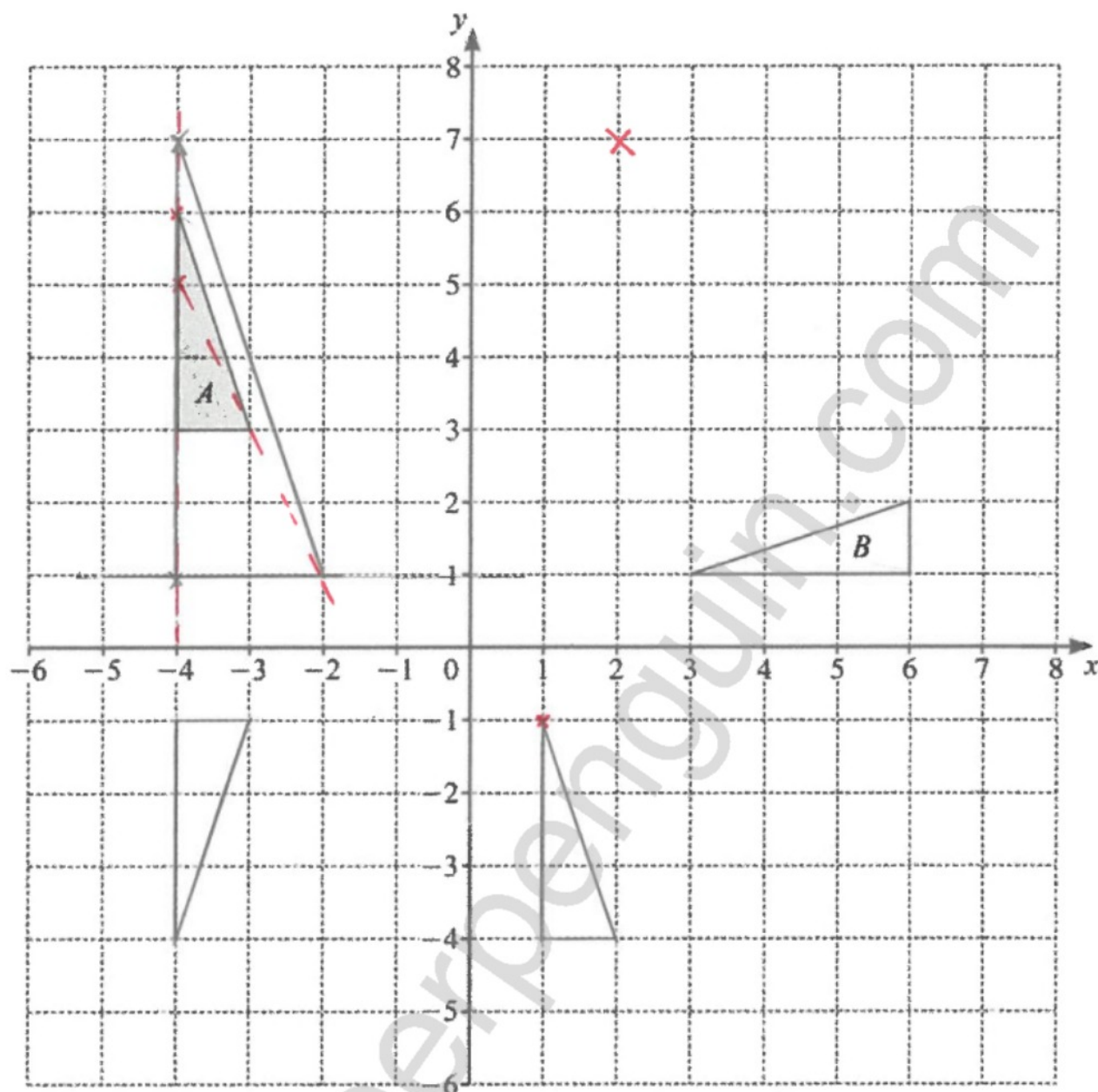
Enlargement, scale factor $\frac{1}{2}$, centre $(-7, 8)$

[3]

(ii) triangle A onto triangle C .

Rotation, 90° clockwise, centre $(0, 0)$

[3]



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

Rotation, 90° anti-clockwise, centre (2, 7)

[3]

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

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

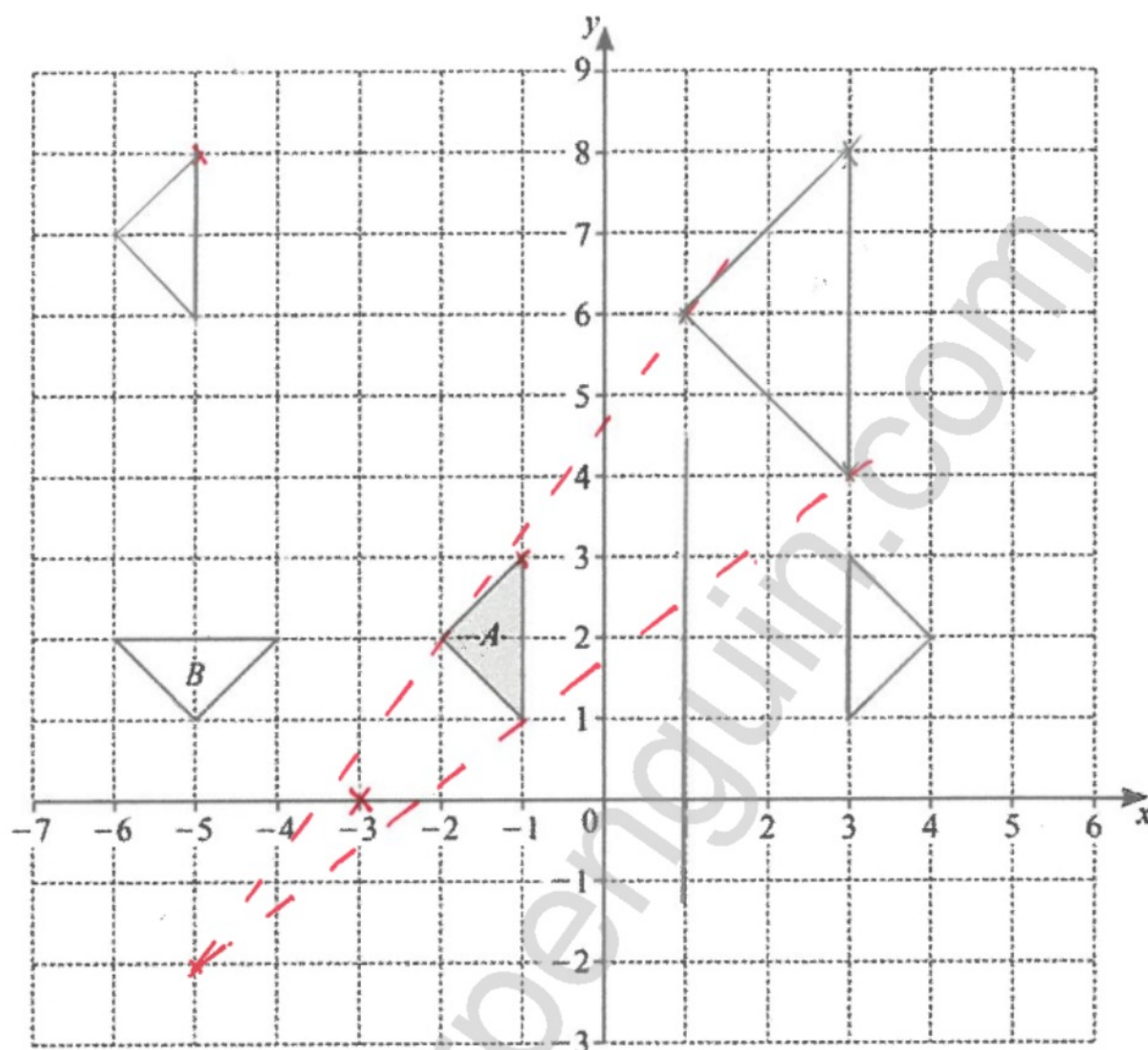
[2]

(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]

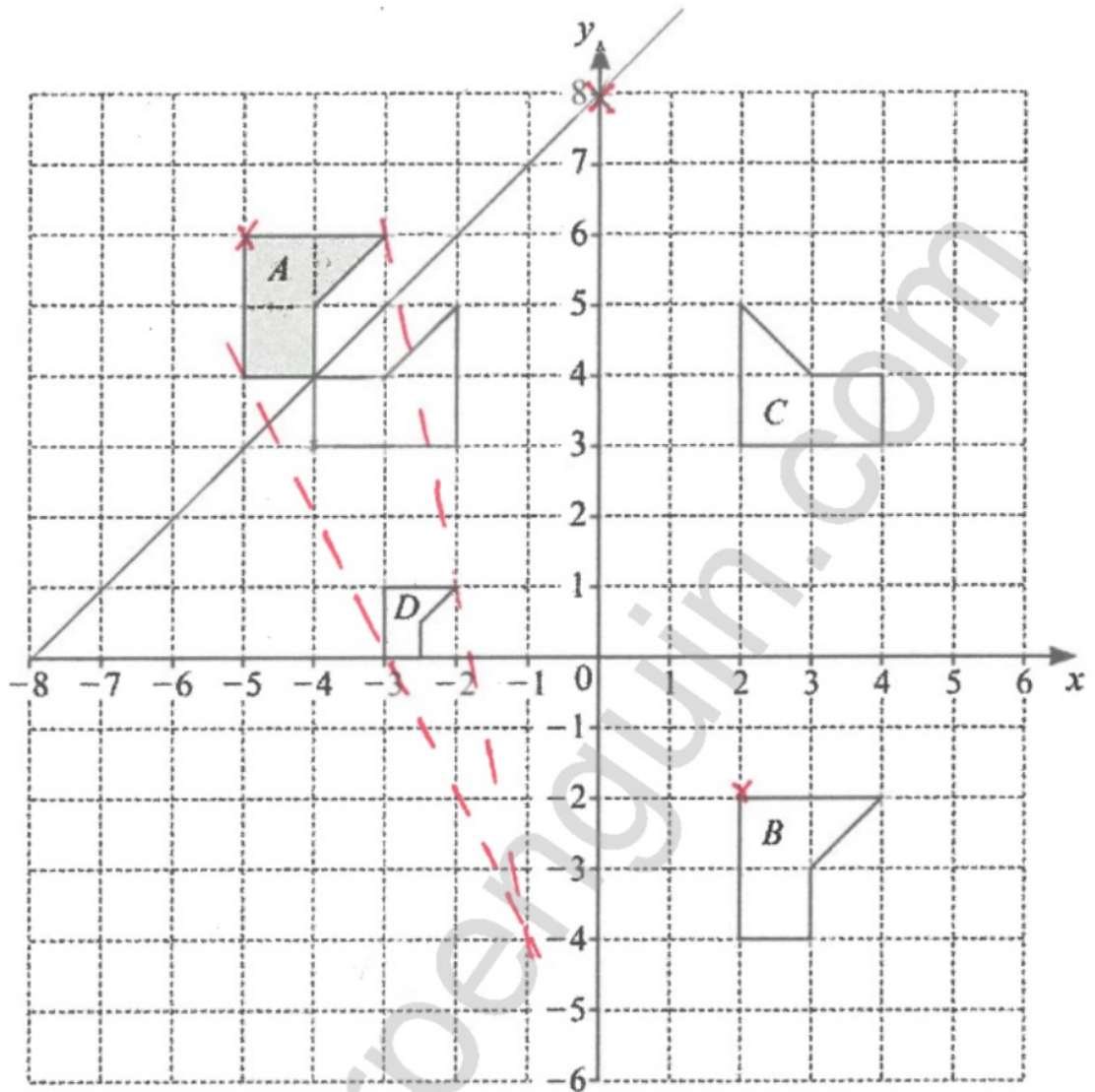
(ii) a reflection in the line $x = 1$, [2]

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

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

Rotation, 90° anti-clockwise, centre $(-3, 0)$

[3]



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

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

Translation by $\begin{pmatrix} 7 \\ -8 \end{pmatrix}$

[2]

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

Rotation, 90° anti-clockwise, centre $(0, 8)$

[3]

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

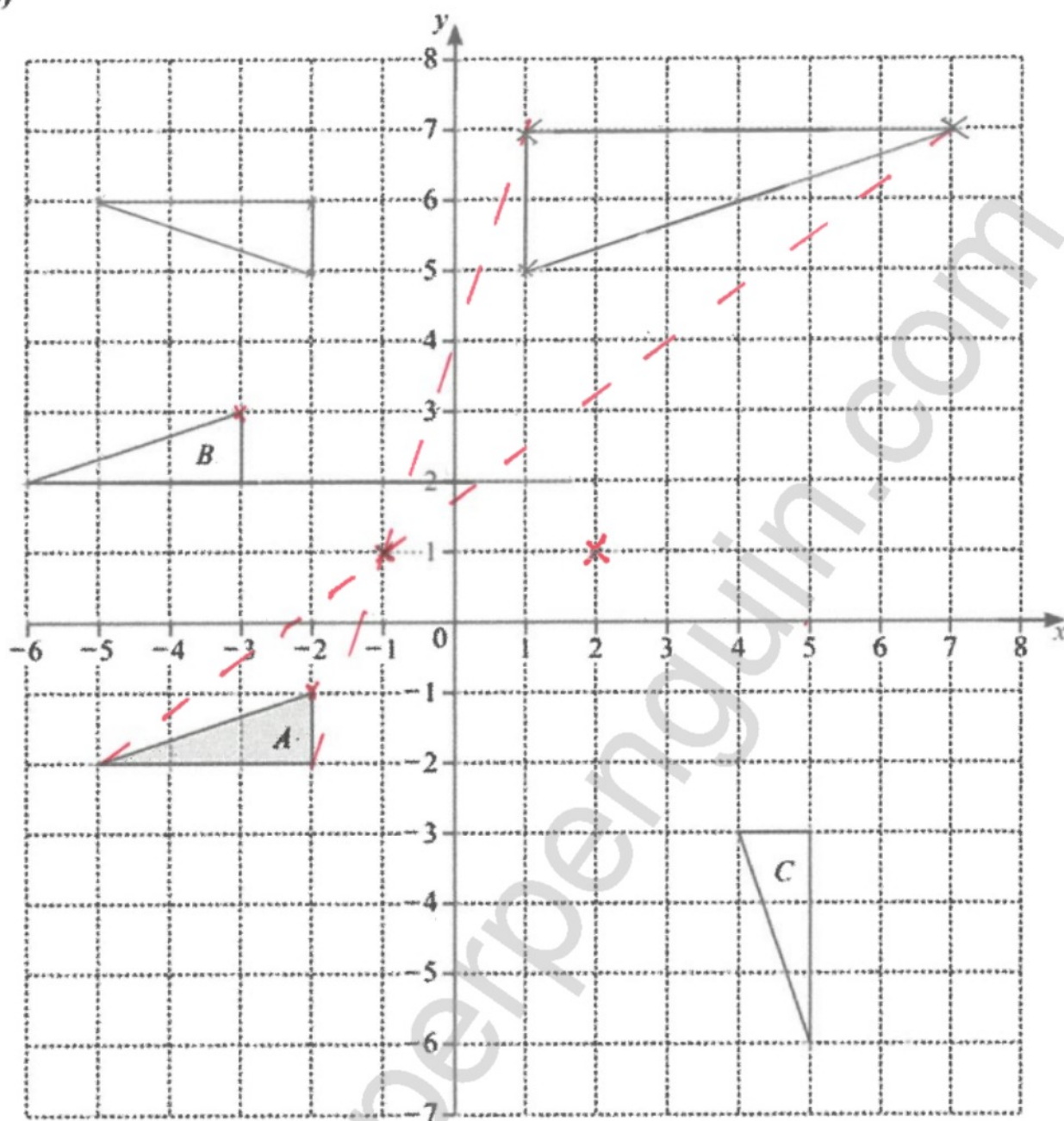
Enlargement, scale factor $\frac{1}{2}$, centre $(-1, -4)$

[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,

Translation by $\begin{pmatrix} -1 \\ 4 \end{pmatrix}$

[2]

(b) triangle A onto triangle C.

Rotation, 90° anti-clockwise, centre $(2, 1)$

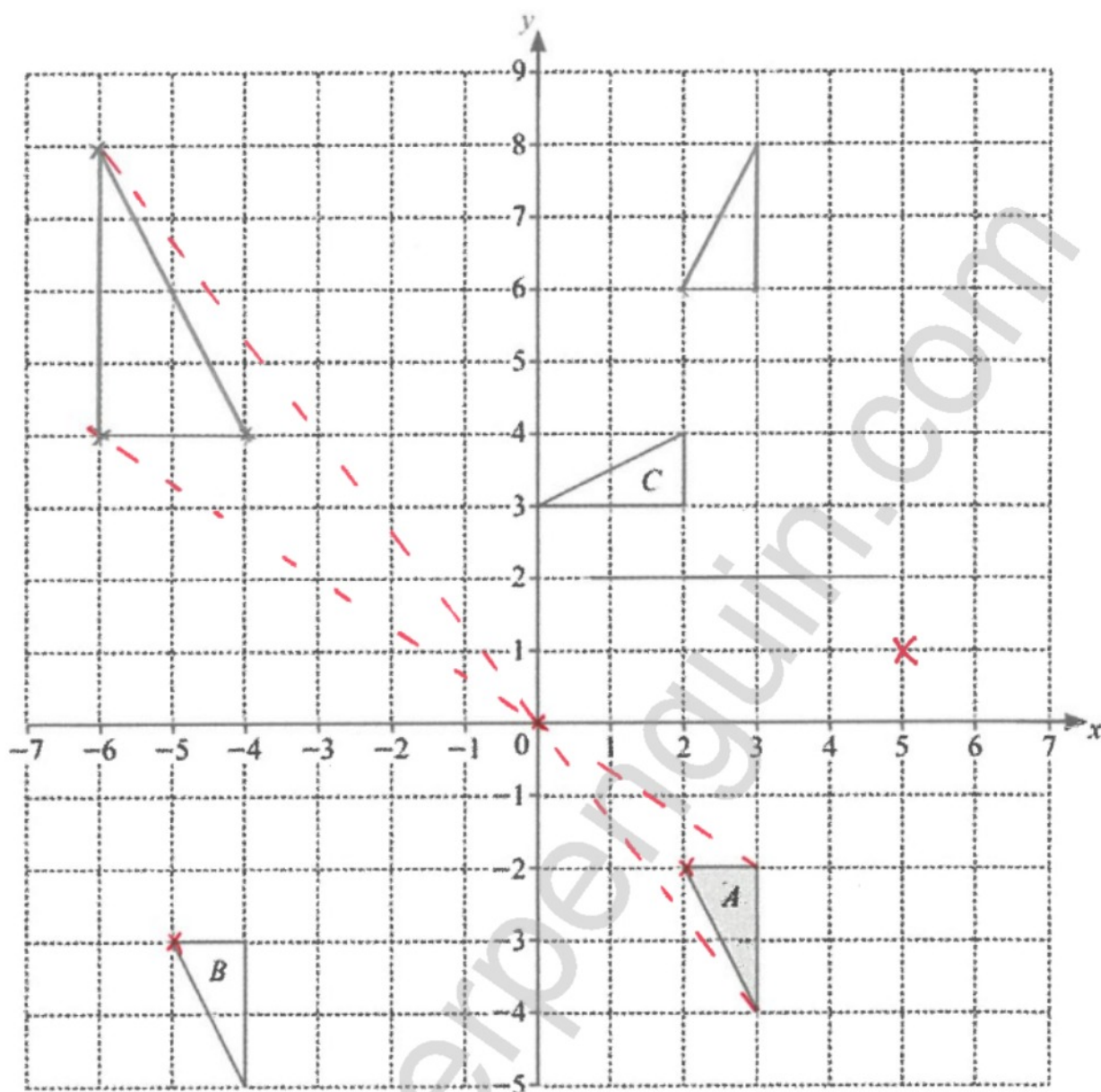
[3]

(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*

Translation by $\begin{pmatrix} -7 \\ -1 \end{pmatrix}$

[2]

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

Rotation, 90° clockwise, centre (5,1)

[3]

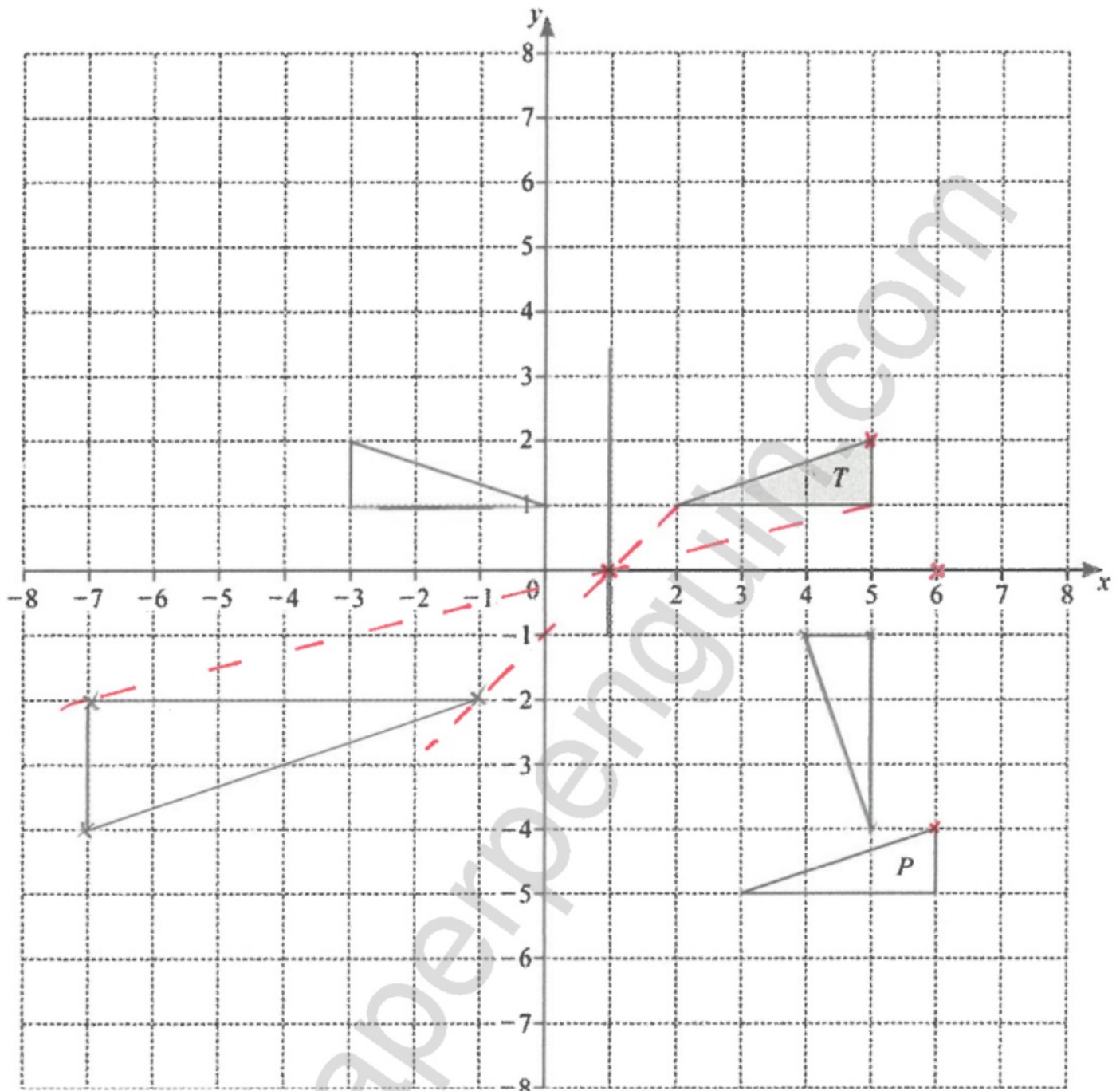
(b) On the grid, draw the image of

(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 .

Translation by $\begin{pmatrix} 7 \\ 0 \end{pmatrix}$

[2]

- (b) (i) Reflect triangle T in the line $x = 1$.

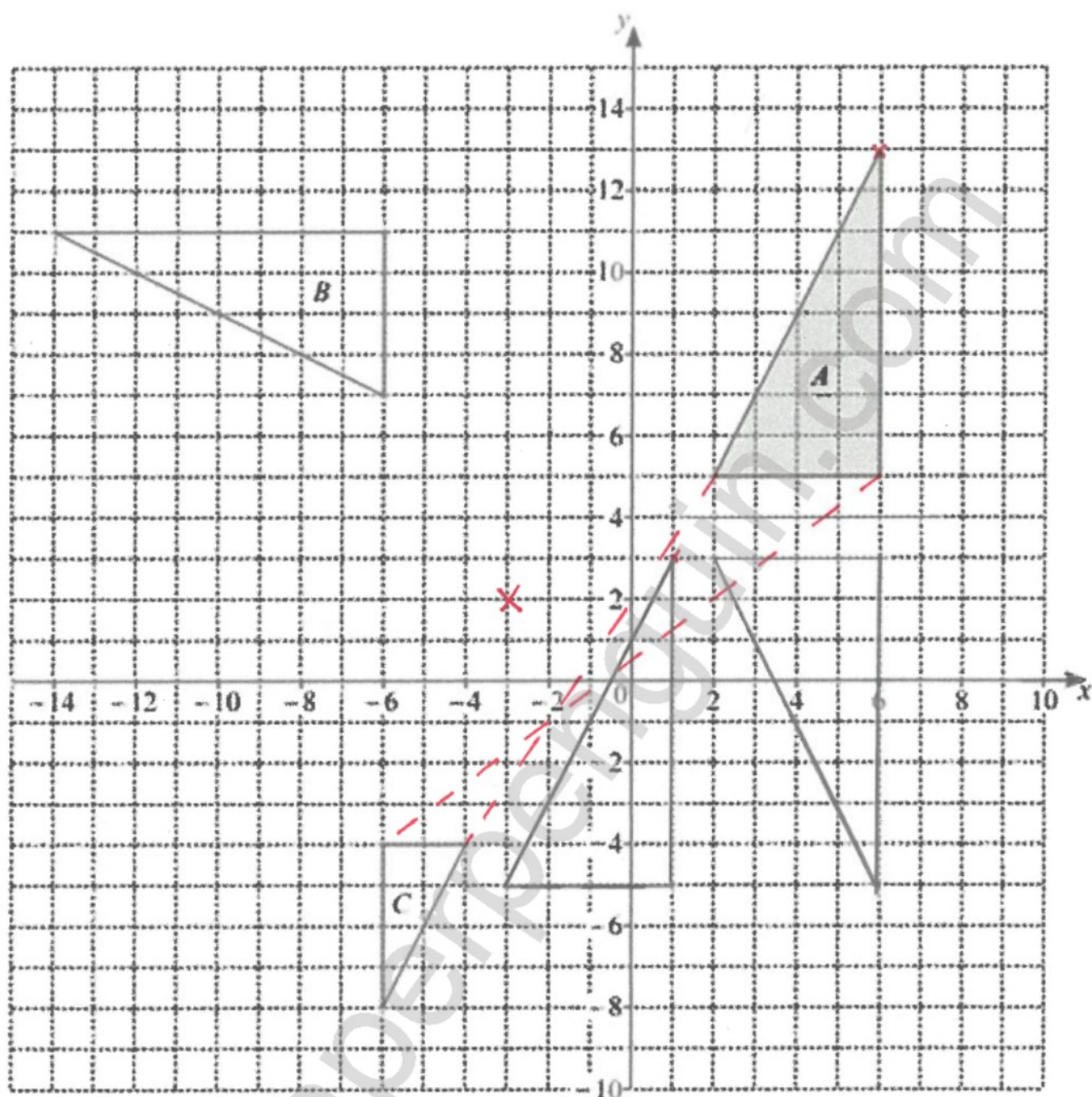
[2]

- (ii) Rotate triangle T through 90° 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,

Rotation, 90° anti-clockwise, centre $(-3, 2)$

[3]

(ii) triangle A onto triangle C.

Enlargement, scale factor $-\frac{1}{2}$, centre $(-2, -1)$

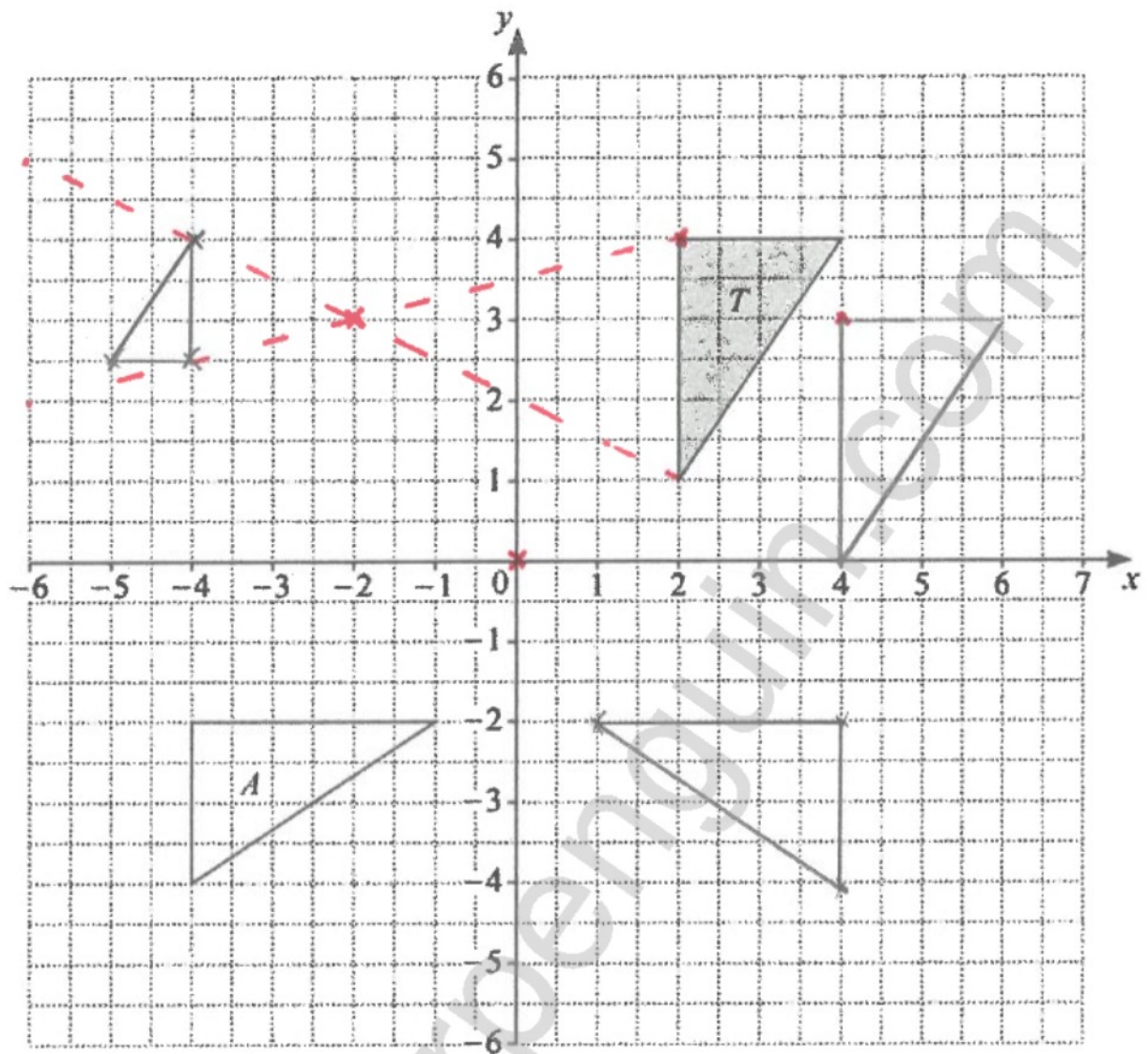
[3]

(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]



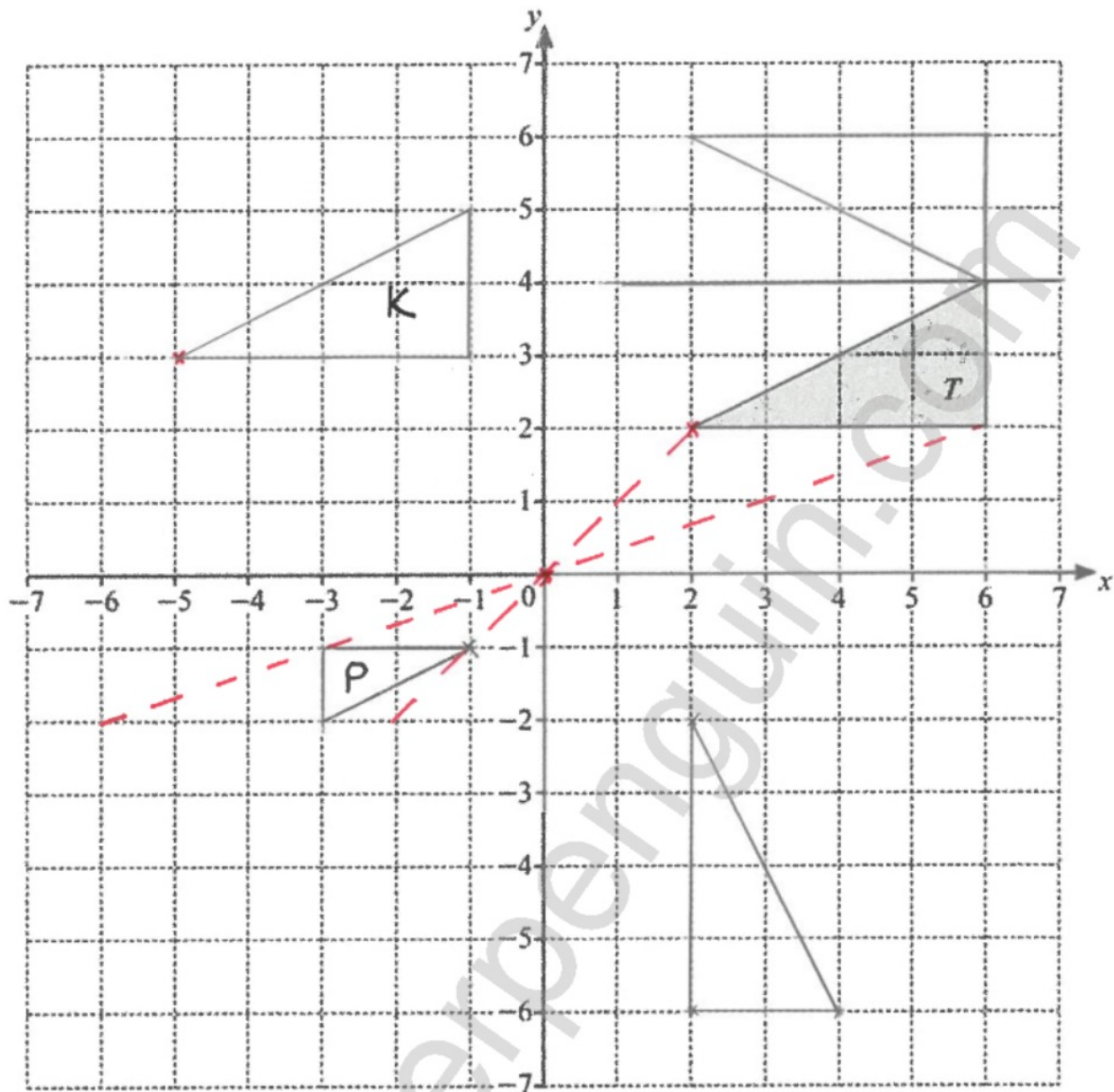
(a) On the grid, draw the image of

- (i) triangle T after a translation by the vector $\begin{pmatrix} 2 \\ -1 \end{pmatrix}$, [2]
- (ii) triangle T after a rotation, 90° 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 .

Reflection in the line $y = -x$

[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 .

Translation by $\begin{pmatrix} 7 \\ -1 \end{pmatrix}$

[1]

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

- (c) Rotate triangle T through 90° 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 .

Enlargement, scale factor -2 , centre $(0, 0)$

[2]