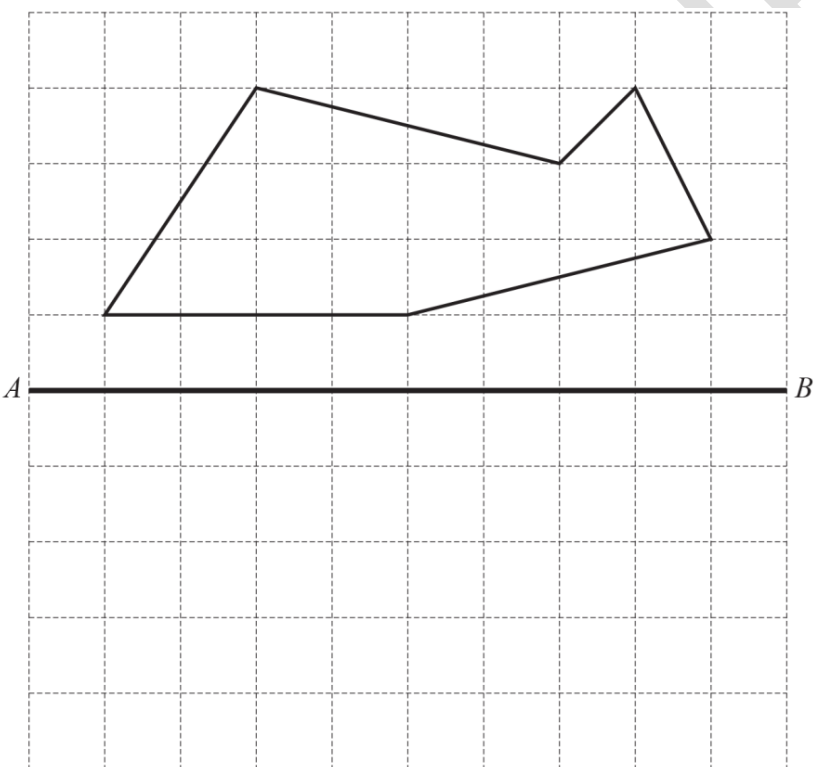
Name:

Section:

TRANSFORMATIONS WORKSHEET

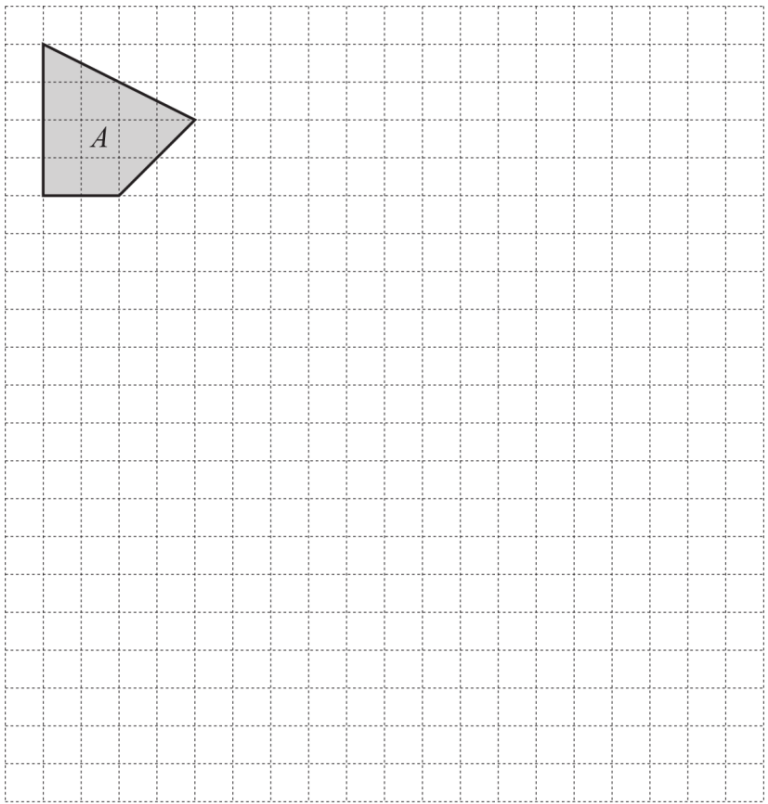
1 Reflect this shape in the line *AB*.



[2]

[Total: 2]

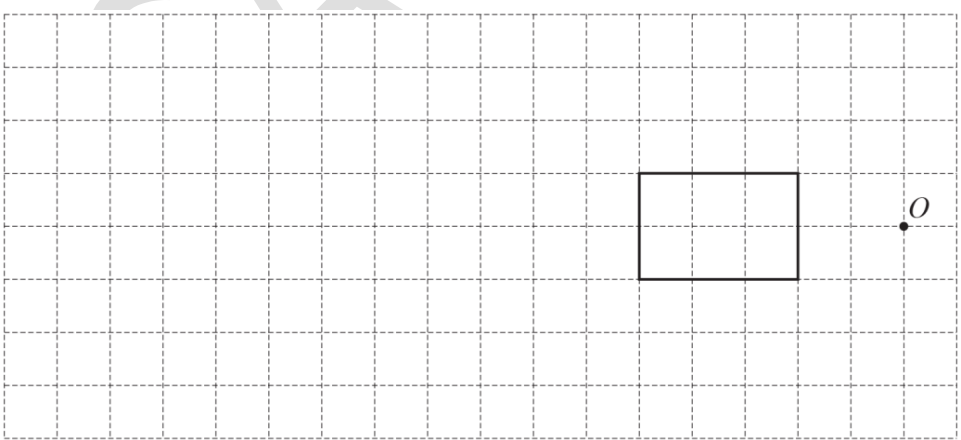
2 Shape A is shown on the grid.



On the grid, enlarge shape *A* by scale factor 3. [2]

[Total: 2]

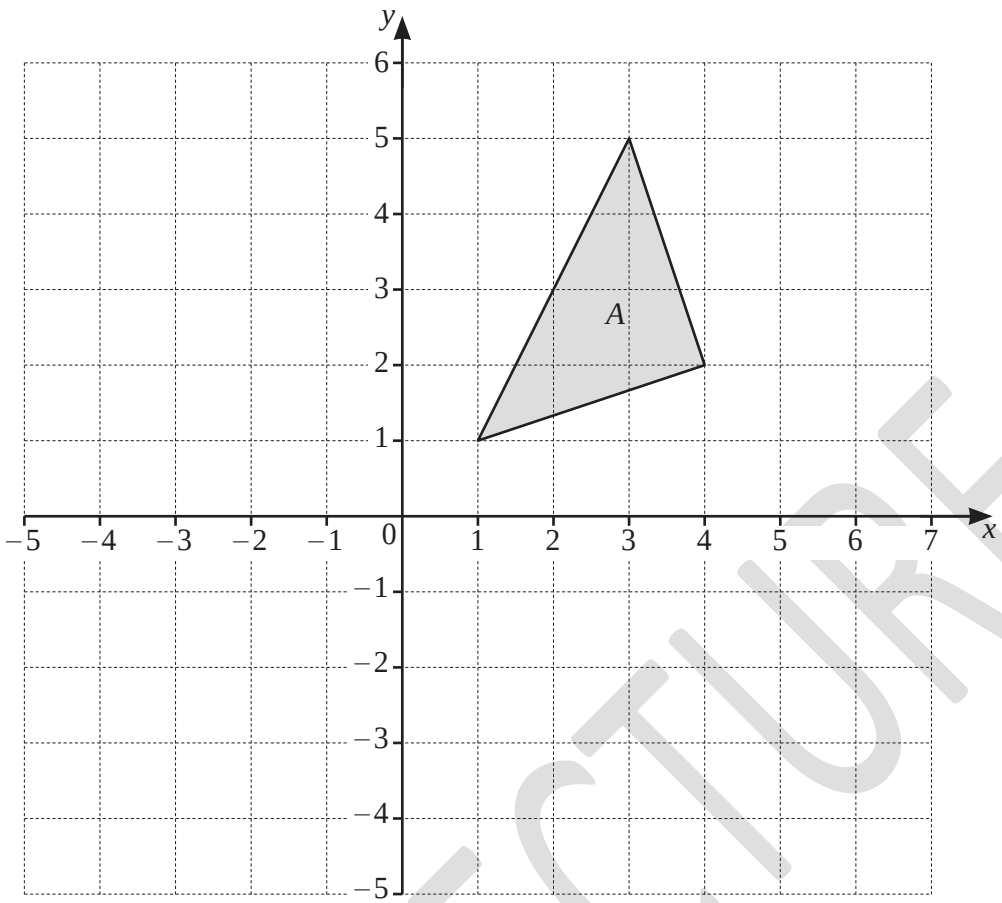
3 Enlarge the rectangle using a scale factor of 3 and centre of enlargement *O*.



[2]

[Total: 2]

4



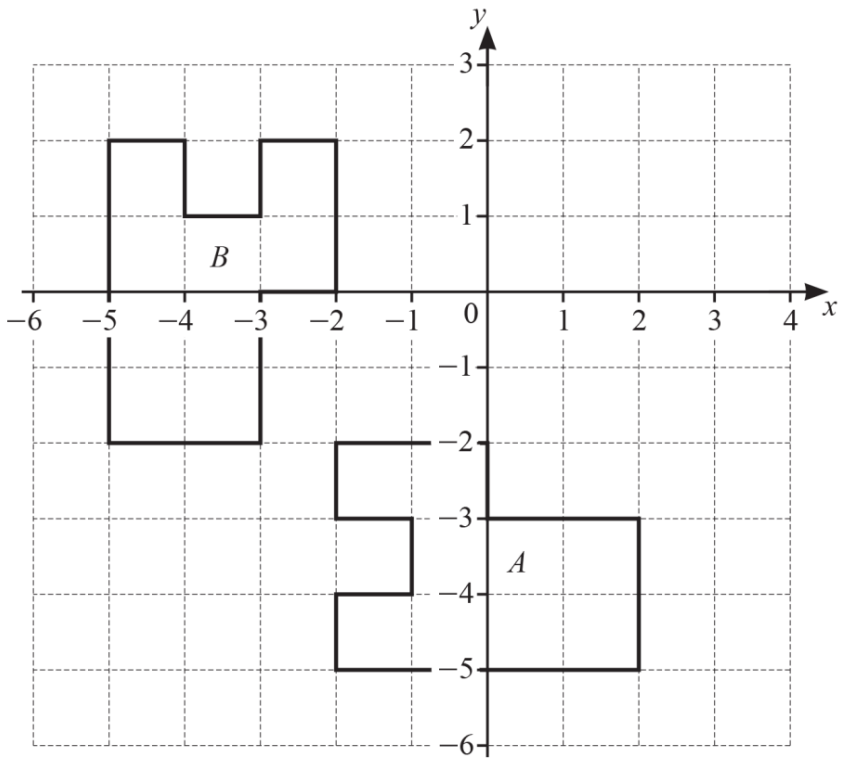
On the grid, draw the image of

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

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

[Total: 3]

5



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

.....

..... [3]

[Total: 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.

.....

..... [2]

[Total: 6]

7

(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 . [2]

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

(i) triangle A onto triangle B,

.....

..... [3]

(ii) triangle A onto triangle C.

.....

..... [3]

[Total: 10]

8

y

(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]

(b) On the grid, draw the image of triangle *A* after a reflection in the line $y = -1$. [2]

[Total: 10]

9

Reflect shape T in the line $y = x$. [2]

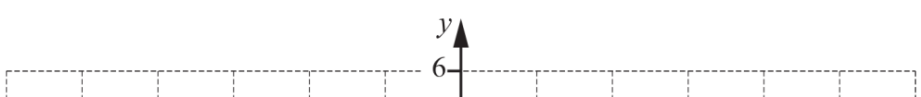
[Total: 2]

10

Draw the enlargement of the triangle by scale factor 3, centre X. [2]

[Total: 2]

11



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

.....

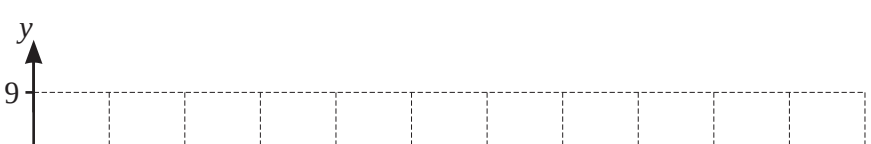
..... [2]

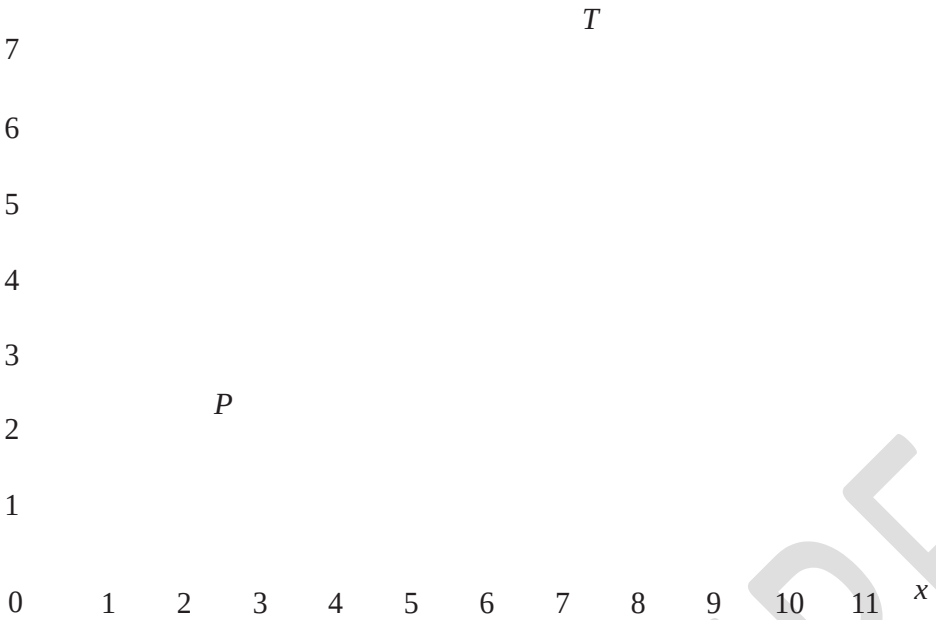
(b) On the grid, draw the image of triangle *A* after a reflection in the line . [2]

(c) On the grid, draw the image of triangle *A* after a rotation through 180° about (0, 0). [2]

[Total: 6]

12





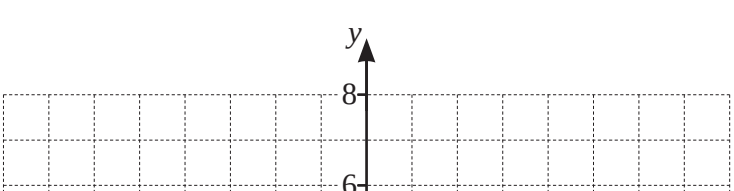
Describe fully the **single** transformation that maps triangle *T* onto triangle *P*.

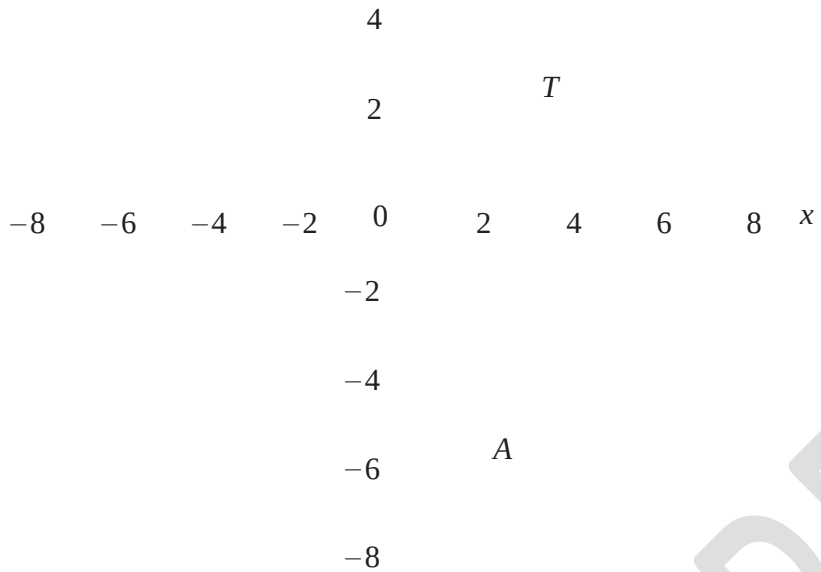
.....

..... [3]

[Total: 3]

13





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

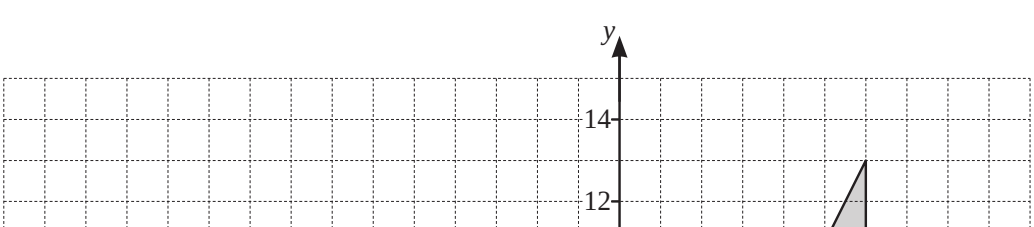
.....

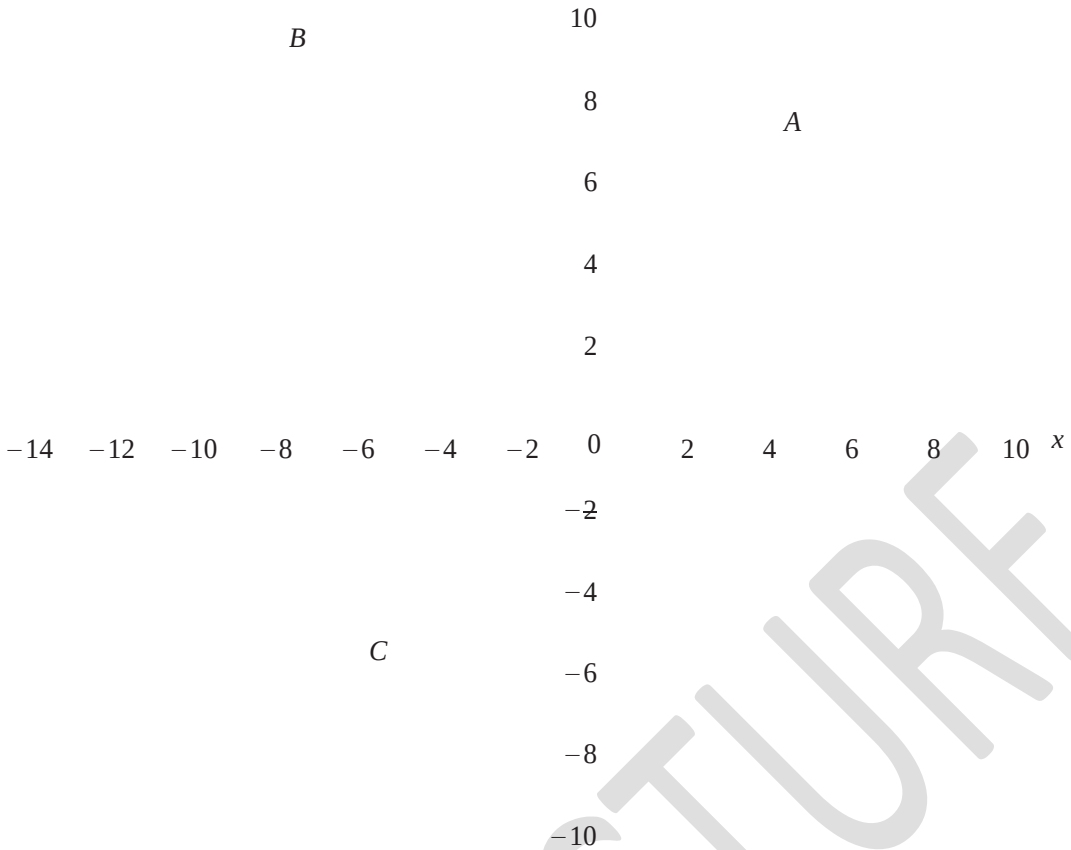
..... [2]

(b) Draw the image of triangle *T* after an enlargement, scale factor , centre (0, 0). [2]

[Total: 4]

14





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

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

.....

..... [3]

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

.....

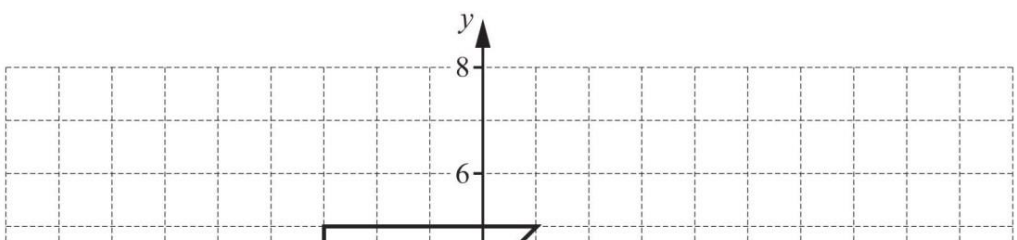
..... [3]

(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]

[Total: 10]

15



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

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

.....

..... [2]

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

.....

..... [3]

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

.....

..... [3]

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

[Total: 10]

16

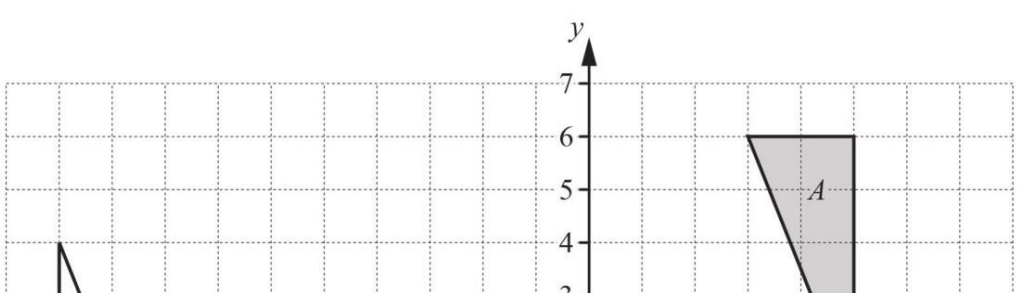
Describe fully the **single** transformation that maps triangle *T* onto triangle *U*.

.....

..... [3]

[Total: 3]

17



Describe fully the **single** transformation that maps

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

.....

..... [3]

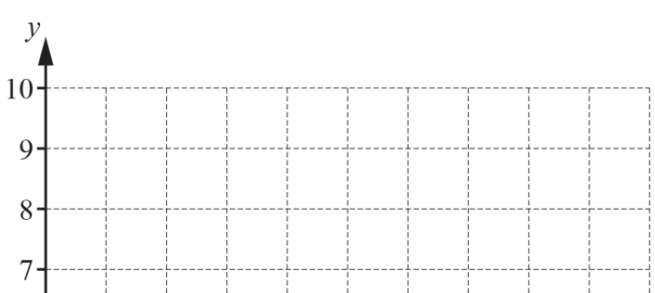
(b) triangle *A* onto triangle *C*.

.....

..... [3]

[Total: 6]

18



(a) Translate shape *T* by the vector .

Label the image *A*.

[2]

(b) Rotate shape *T* about the point (5, 3) through 180°.
Label the image *B*.

[2]

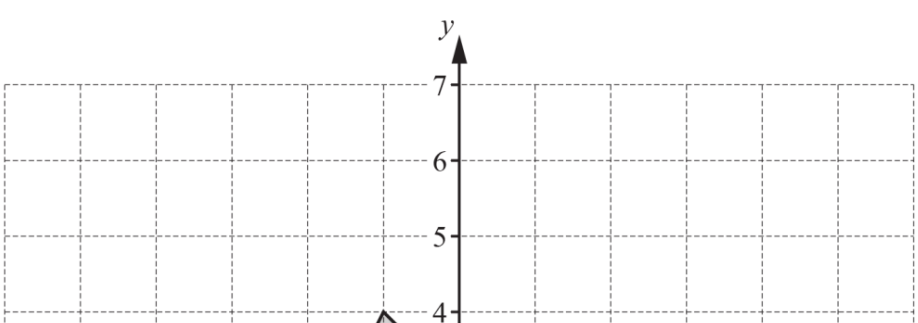
(c) Describe fully the **single** transformation that maps shape *A* onto shape *B*.

.....

..... [3]

[Total: 7]

19



(a) On the grid, draw the image of

(i) triangle *A* after a translation by the vector $\begin{pmatrix} -3 \\ 1 \end{pmatrix}$, [2]

(ii) triangle *A* after a reflection in the line $y = x$. [2]

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

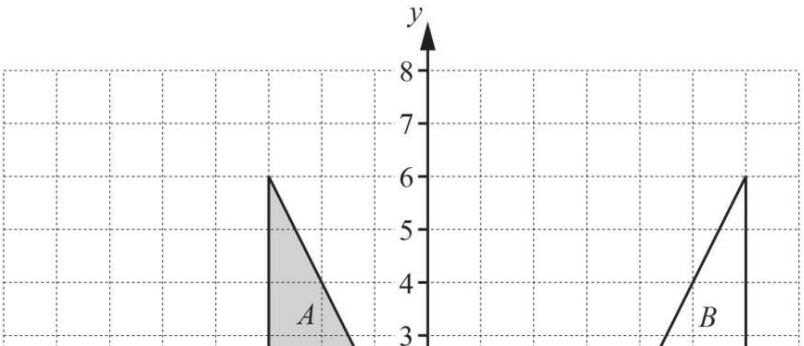
.....

..... [3]

[Total: 7]

18 $\begin{pmatrix} -\frac{1}{2} \\ 2 \end{pmatrix}$

20



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

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

.....

..... [2]

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

.....

..... [3]

(b) On the grid, draw the image of

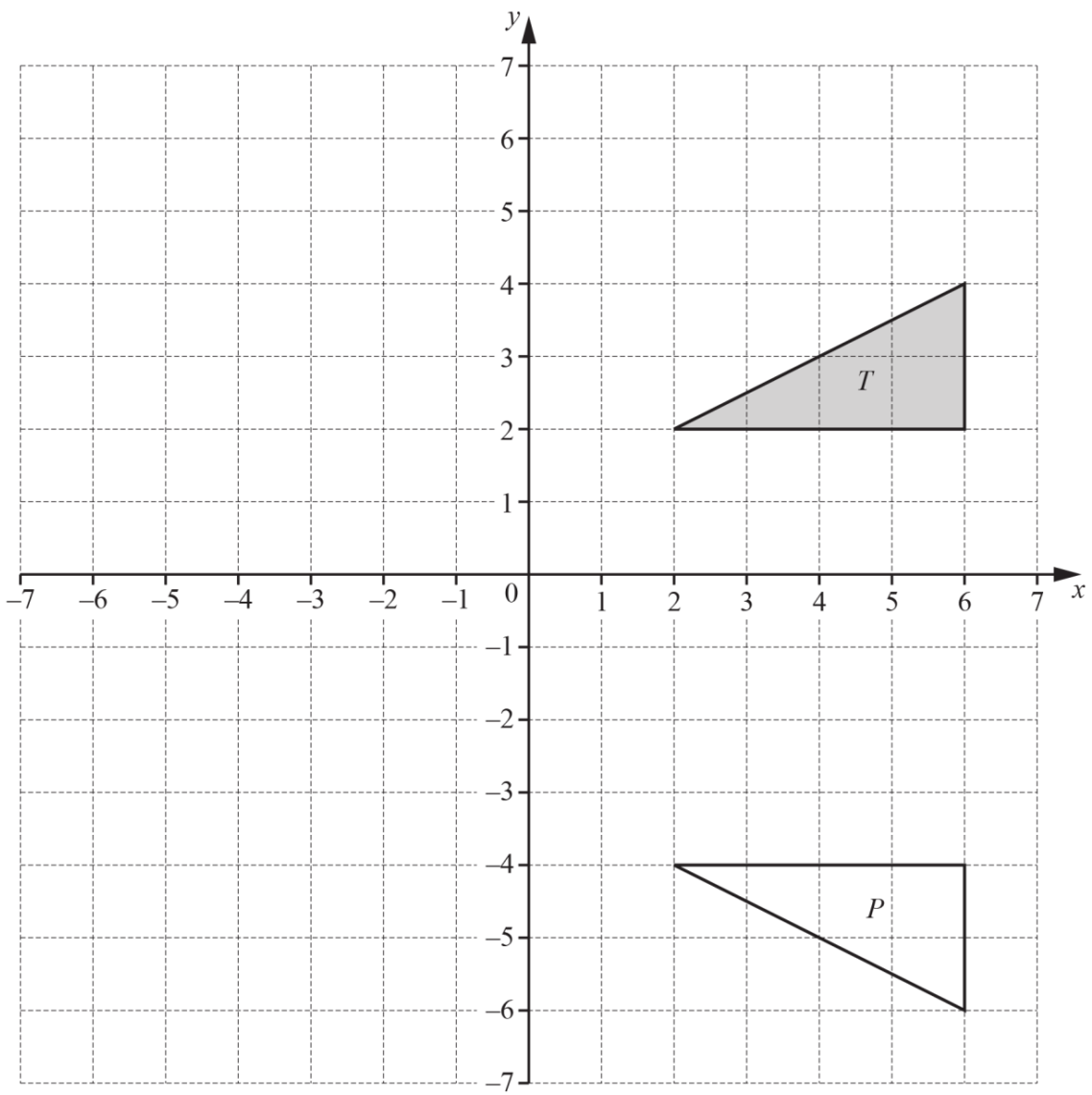
(i) triangle *A* after an enlargement, scale factor $\frac{1}{2}$, centre (3, 0), [2]

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

[Total: 9]

19

21



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

.....

..... [2]

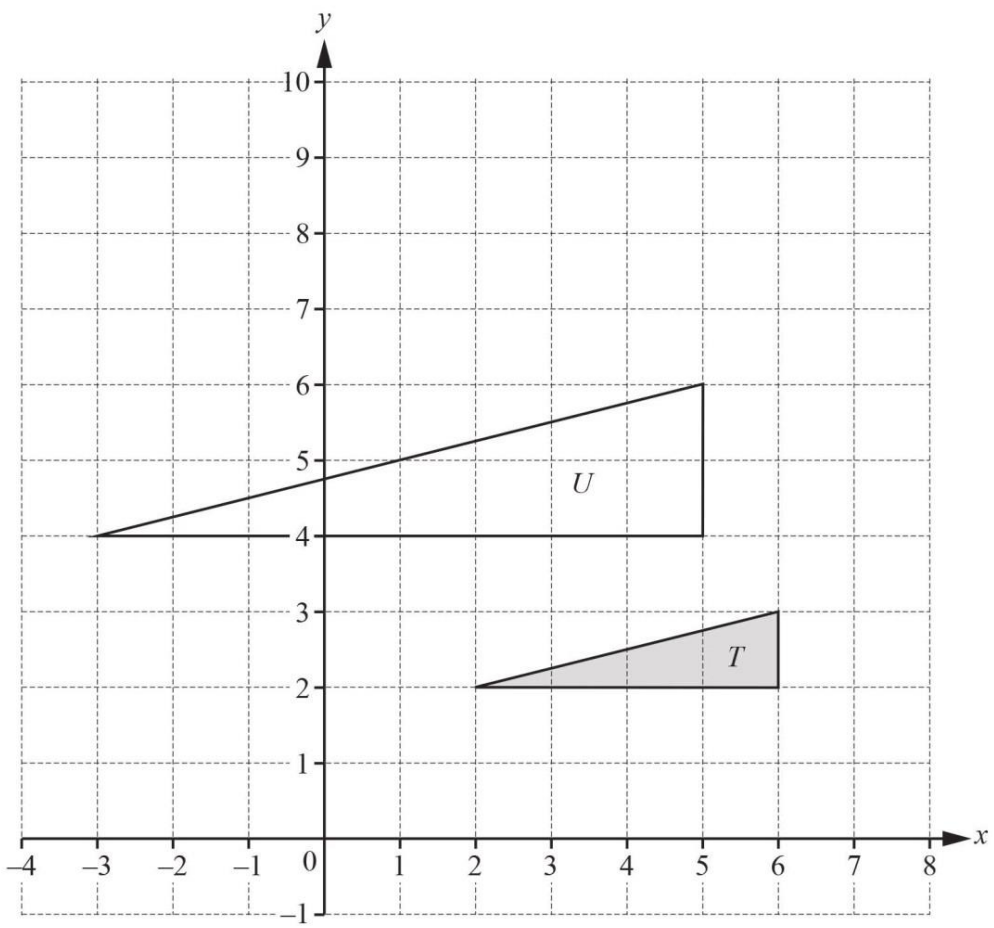
(b) Translate triangle T by the vector $\begin{pmatrix} -2 \\ -5 \end{pmatrix}$. [2]

(c) Rotate triangle *T* through 90° anticlockwise about (0, 0) [2]

(d) Enlarge triangle T by scale factor $-\frac{1}{2}$ with centre (0, 0). [2]

[Total: 8]

22



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

.....

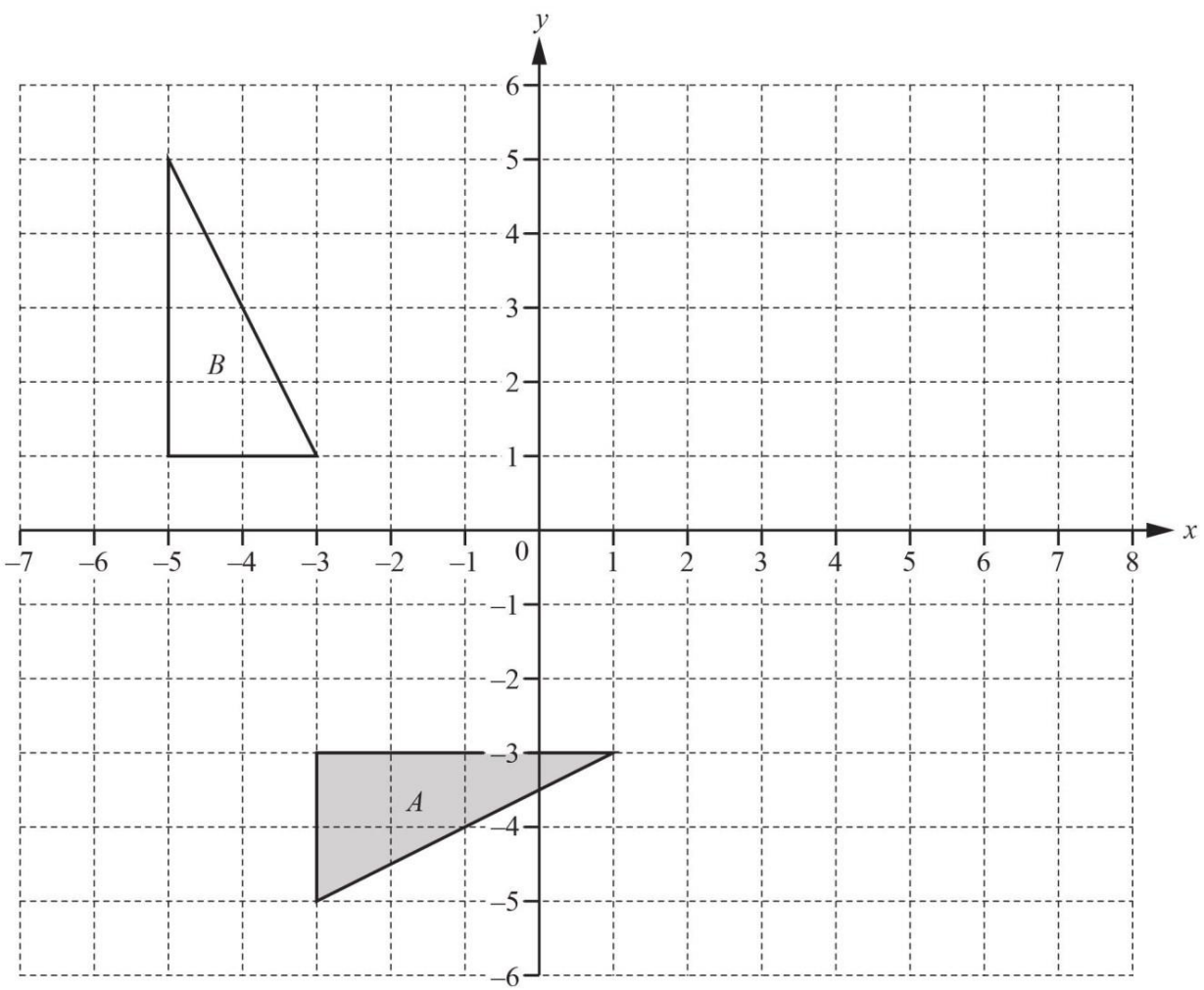
..... [3]

(b) On the grid, draw the image of triangle T after a rotation through 90° clockwise about the point (7, 3).

[3]

[Total: 6]

23



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

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

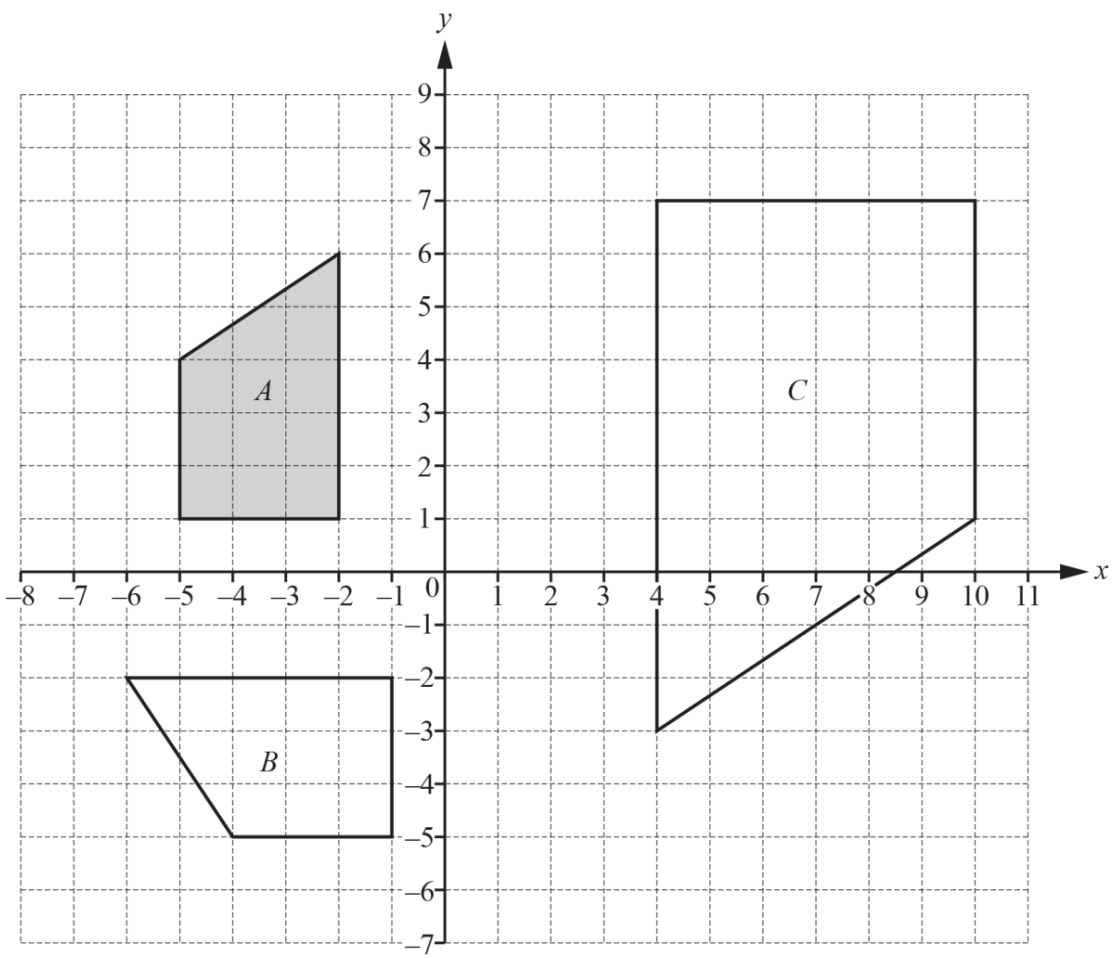
(iii) Draw the image of triangle *A* after an enlargement by scale factor $-\frac{1}{2}$, centre (3, 1). [3]

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

.....

..... [3]

24



Describe fully the **single** transformation that maps

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

.....

..... [3]

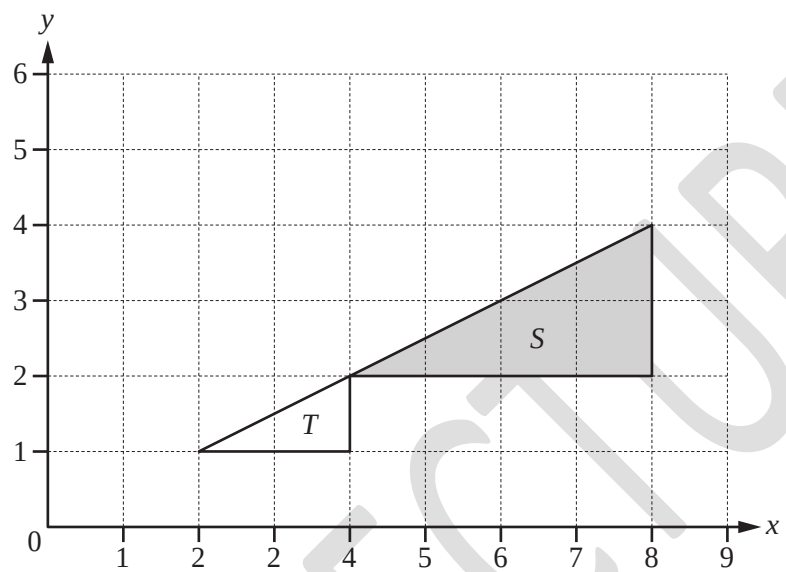
(b) shape *A* onto shape *C*.

.....

..... [3]

[Total: 6]

25



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

Answer.....

..... [3]

[Total: 3]