



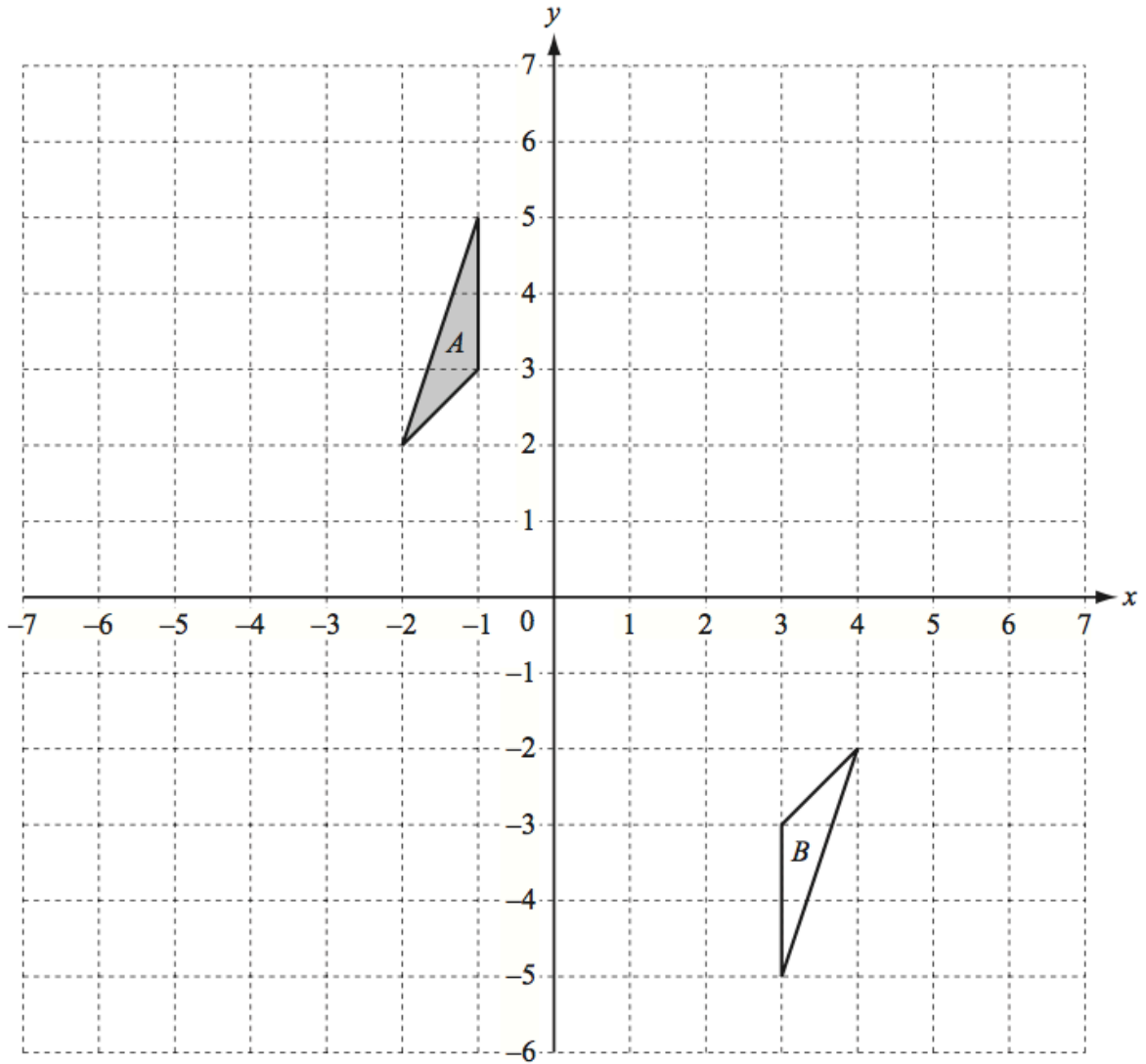
CAMBRIDGE
International Examinations

MATHEMATICS (EXTENDED) 0580
IGCSE MAY/JUNE 2020

REVISION 14
TRANSFORMATION

NOTES:

1.

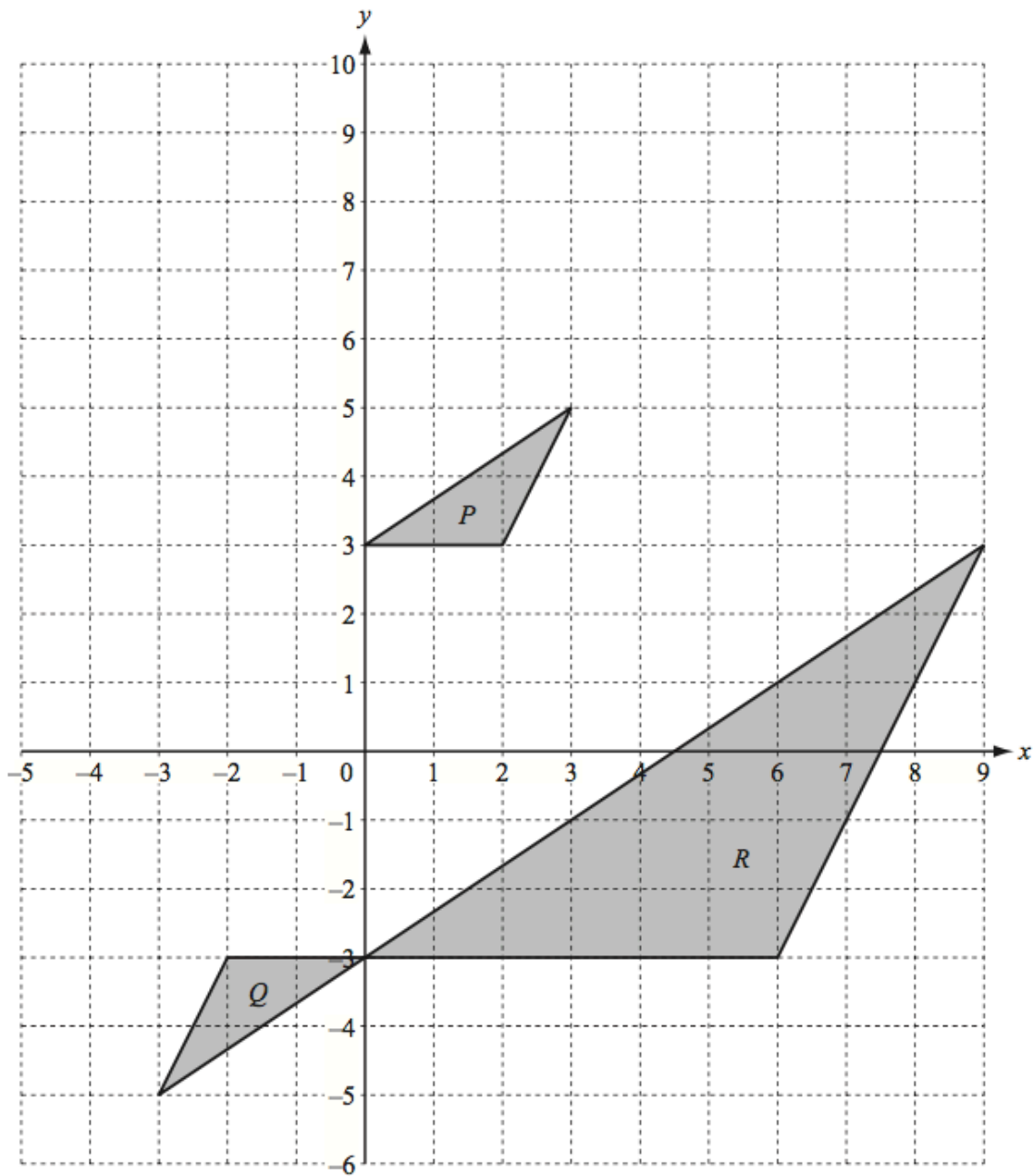


(a) Draw the image of triangle A after a translation by the vector $\begin{pmatrix} 3 \\ -4 \end{pmatrix}$. [2]

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

Answer: [3]

2.



(a) Describe fully

(i) the single transformation which maps **triangle P** onto triangle **Q**

Answer: [3]

(ii) the **single** transformation which maps **triangle Q** onto triangle **R**

Answer: [3]

(iii) the **single** transformation which maps **triangle R** onto triangle **P**

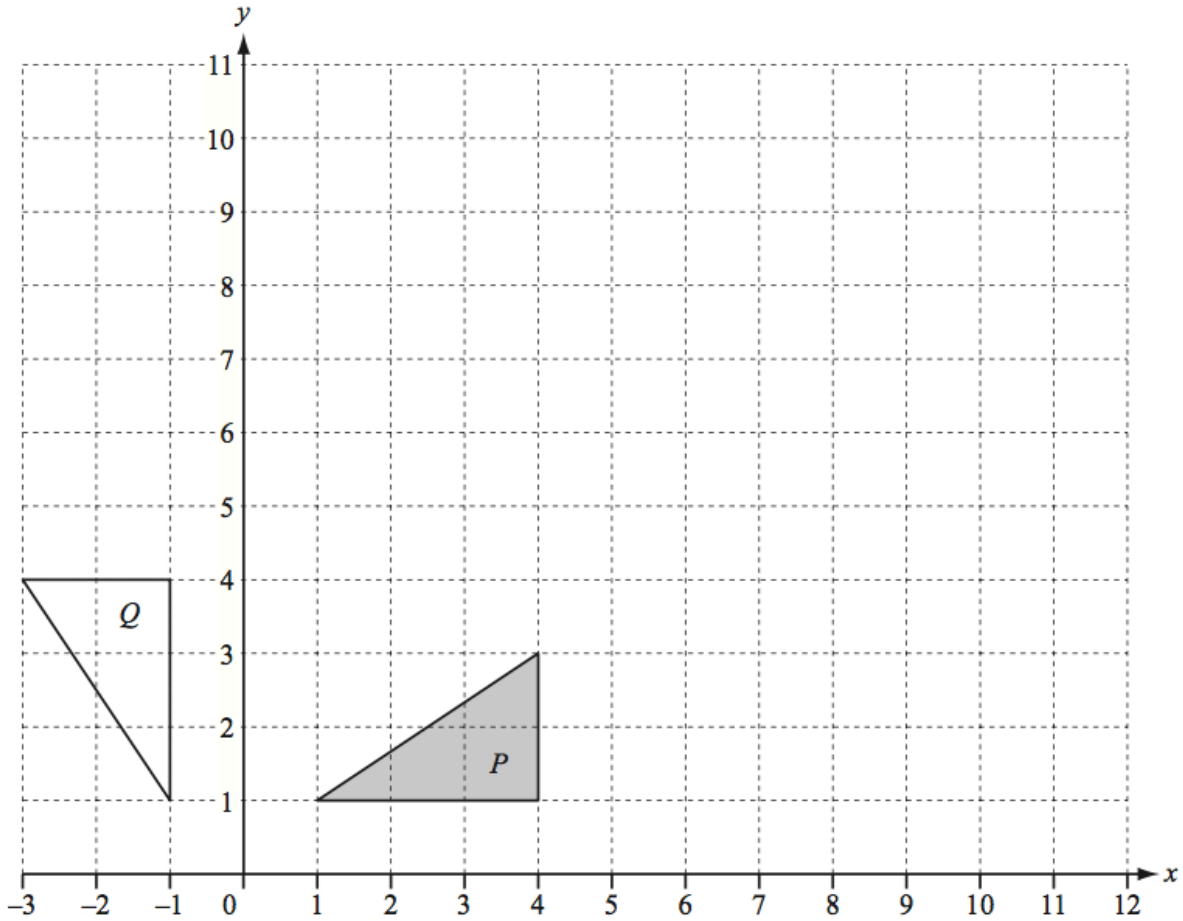
Answer: [3]

(b) On the grid, draw the image of

(i) triangle P after translation by $\begin{pmatrix} -4 \\ -5 \end{pmatrix}$ [2]

(ii) triangle P after reflection in the line $x = -1$. [2]

3.



(a) Draw the translation of triangle P by $\begin{pmatrix} 5 \\ 3 \end{pmatrix}$. [2]

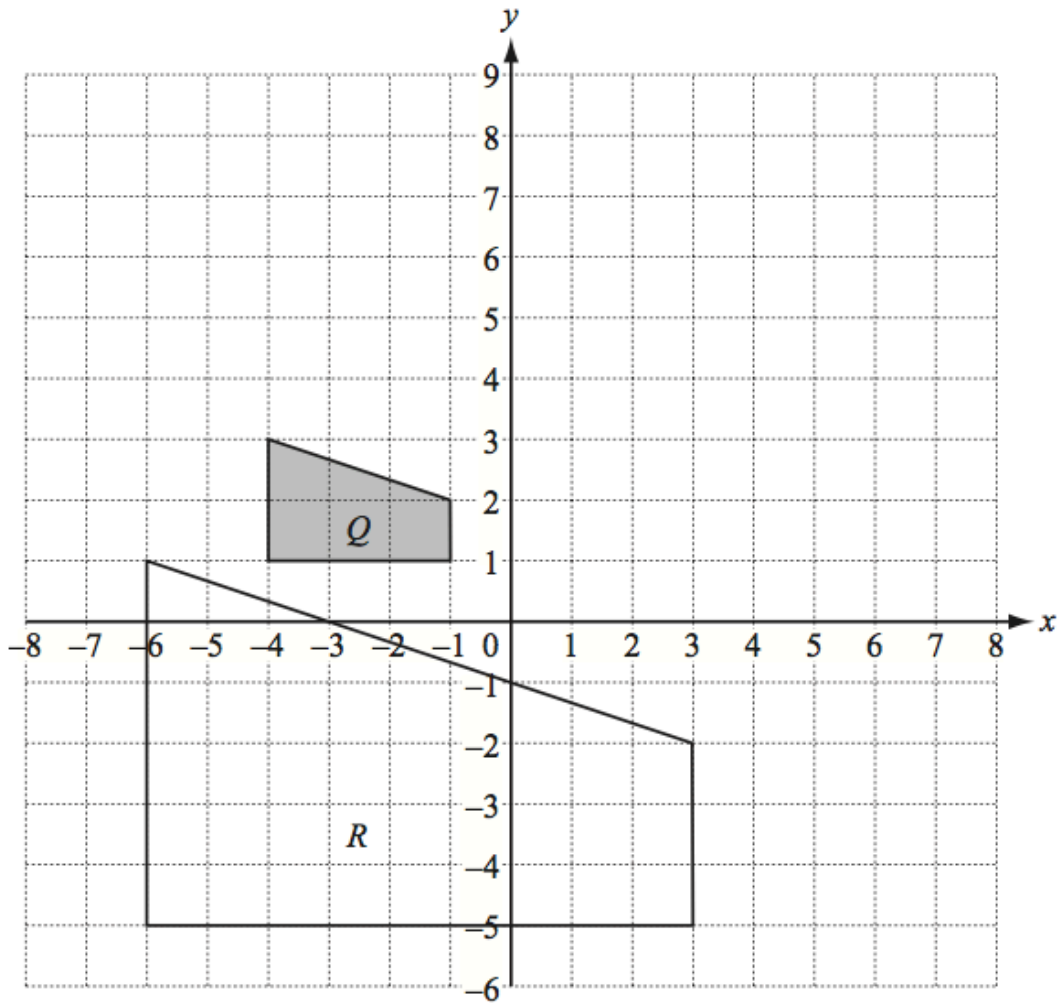
(b) Draw the reflection of triangle P in the line $x = 6$. [2]

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

Answer: [3]

(d) Draw the image of P after enlargement of $k = 2$ with center $(-1, 0)$. [2]

4.



(a) Describe fully the **single** transformation that maps shape Q onto shape R .

Answer: [3]

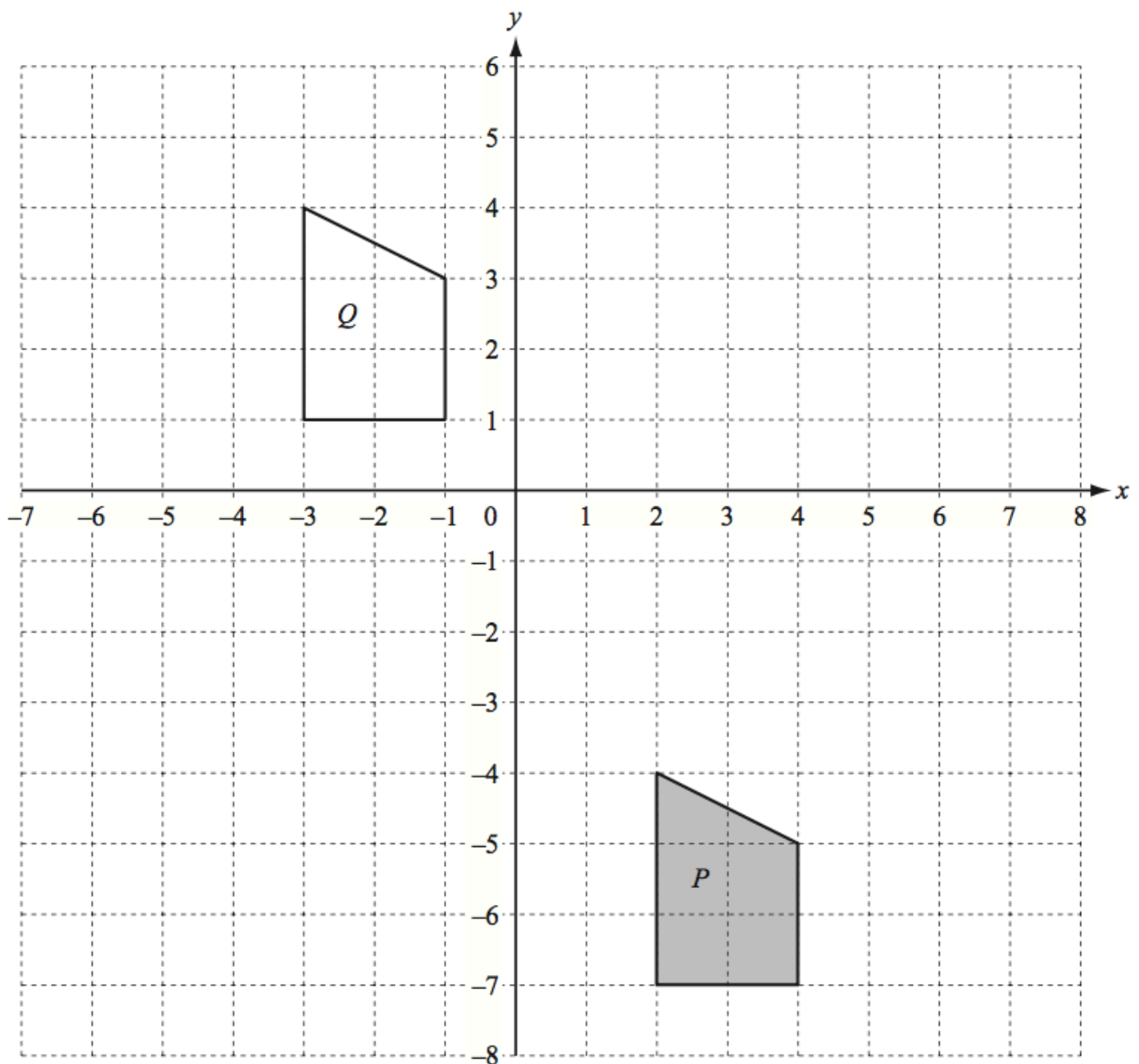
(b) (i) Draw the image when shape Q is translated by the vector $\begin{pmatrix} 5 \\ 4 \end{pmatrix}$. [2]

(ii) Draw the image when shape Q is reflected in the line $x = 2$. [2]

(iii) Draw the image when R is reflected in the line $y = 2$. [2]

(iv) Draw the image when Q is reflected in the y -axis. [2]

5.



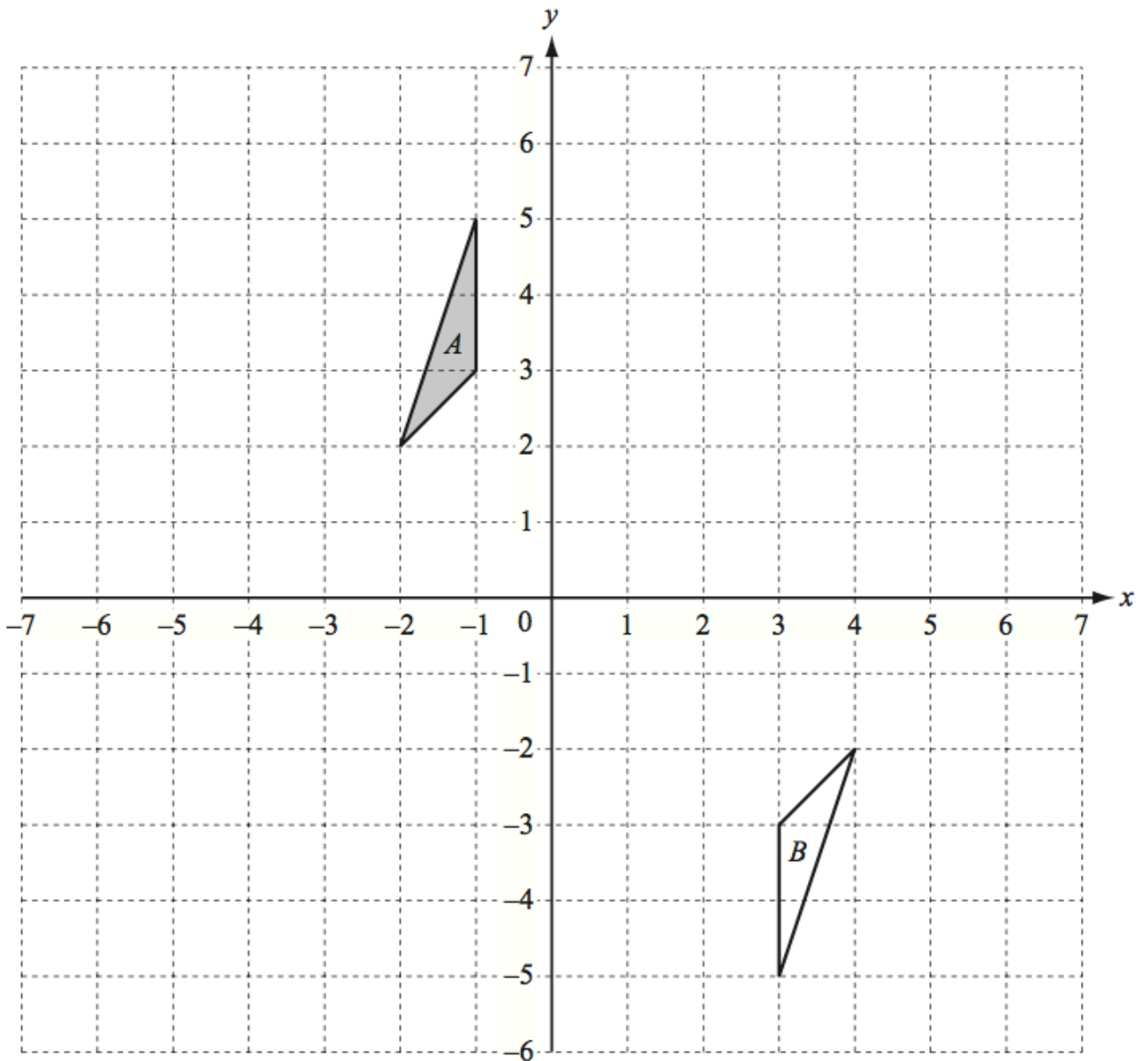
(i) Describe fully the **single** transformation which maps shape P onto shape Q .

Answer: [2]

(ii) On the grid above, draw the image of shape P after the reflection in the line $y = -1$. [2]

(iii) On the grid above, draw the image of Q after rotation 90° clockwise with centre $(-1, -1)$. [2]

6.



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

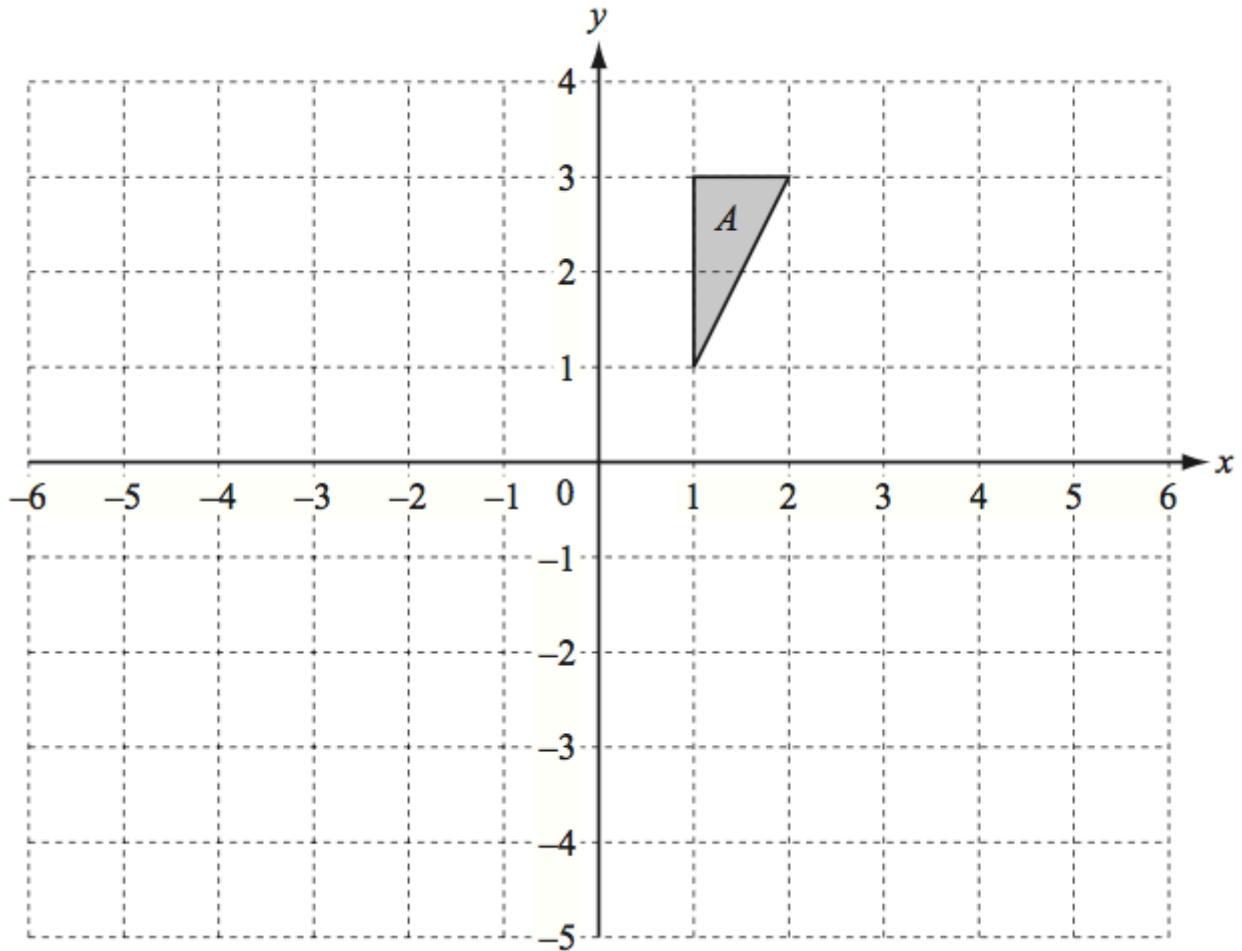
(d) Draw the image of triangle A after reflection in the line $y = 3$. [2]

(e) Draw the image of A after enlargement of scale 3 with centre $(-3, 5)$. [3]

(f) Describe fully the **single** transformation which maps triangle A onto triangle B .

Answer: [3]

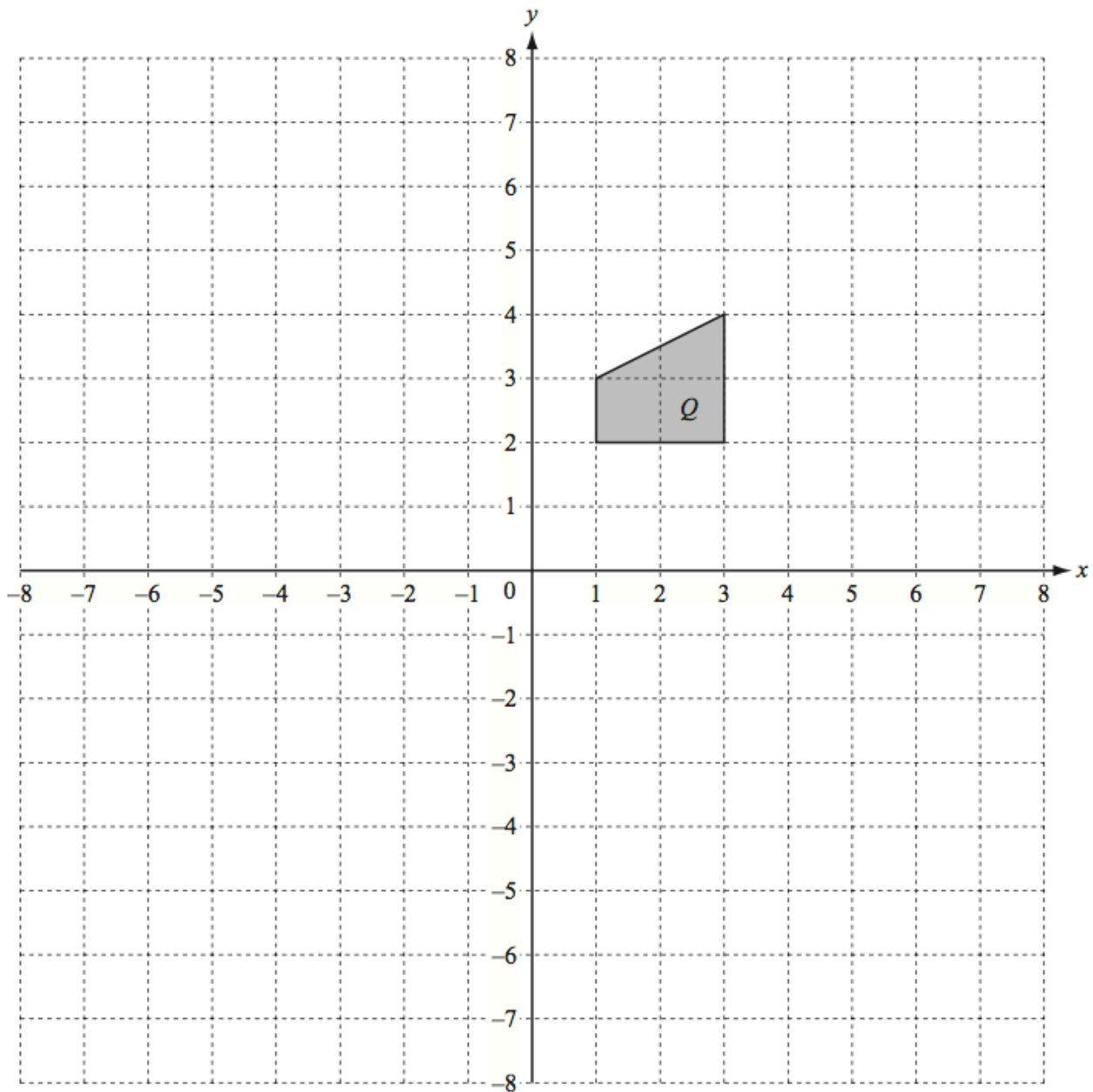
7.



On the grid,

- (i) draw the image of shape A after a translation by the vector $\begin{pmatrix} -5 \\ -4 \end{pmatrix}$. [2]
- (ii) draw the image of shape A after a rotation through 90° clockwise about the origin. [2]
- (iii) draw the image of shape A after reflection in the line $y = -x$. [3]

8.

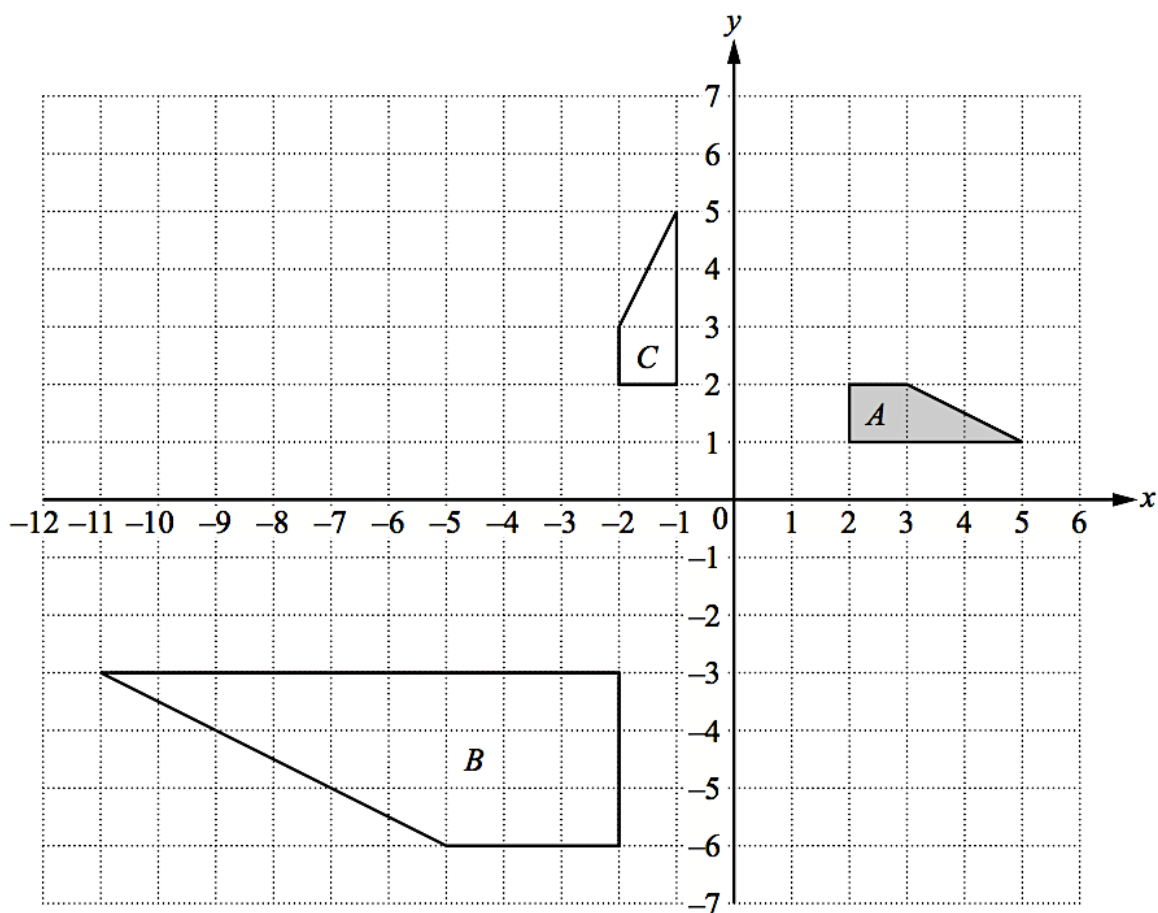


(a) Draw the reflection of shape Q in the line $x = -1$. [2]

(b) Draw the enlargement of shape Q , centre $(0, 0)$, scale factor -2 . [2]

(c) Draw the image of shape Q after a rotation of 90° , anti-clockwise, with centre $(0, 0)$. [2]

9.



(a) Draw the image of

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

(ii) shape *A* after a rotation through 180° about the point $(0, 0)$, [2]

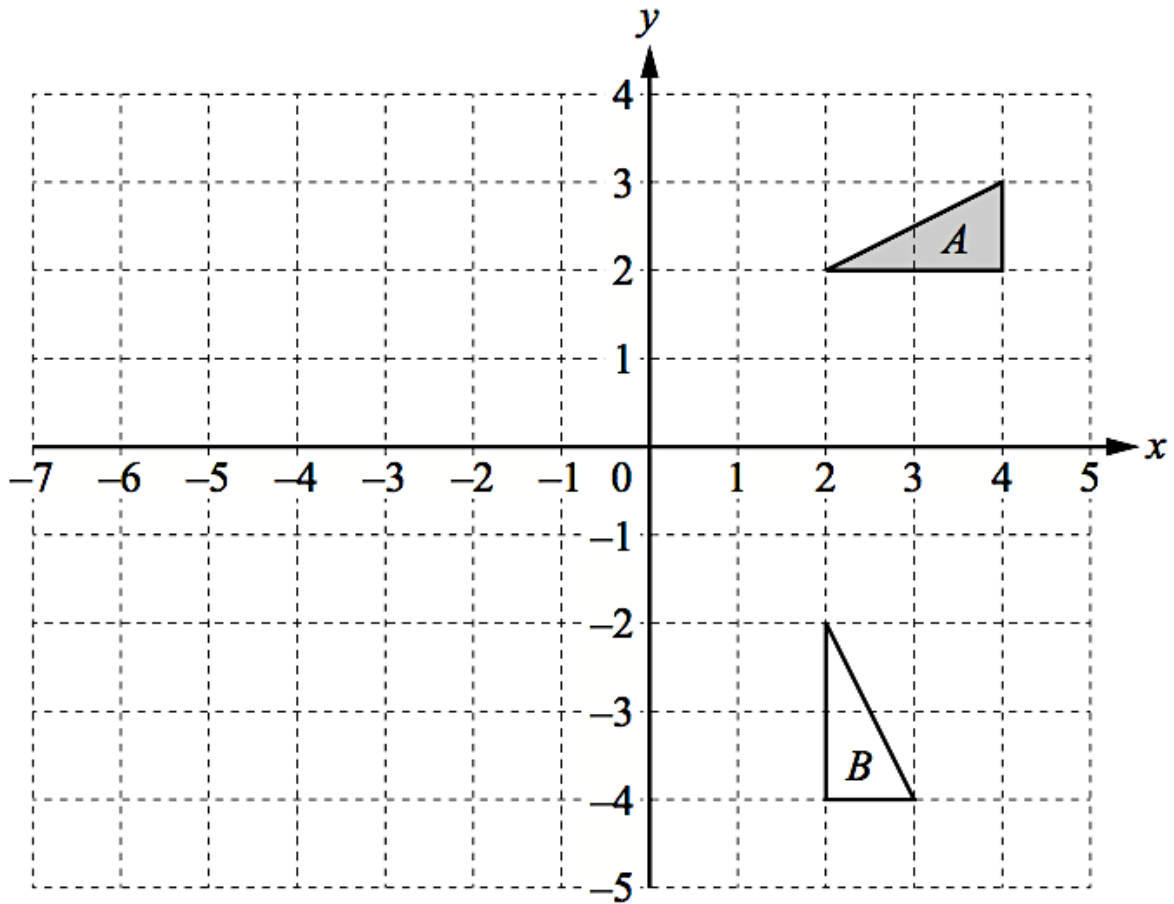
(iii) shape *A* after reflection in the *x*-axis. [3]

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

Answer:

..... [3]

10.



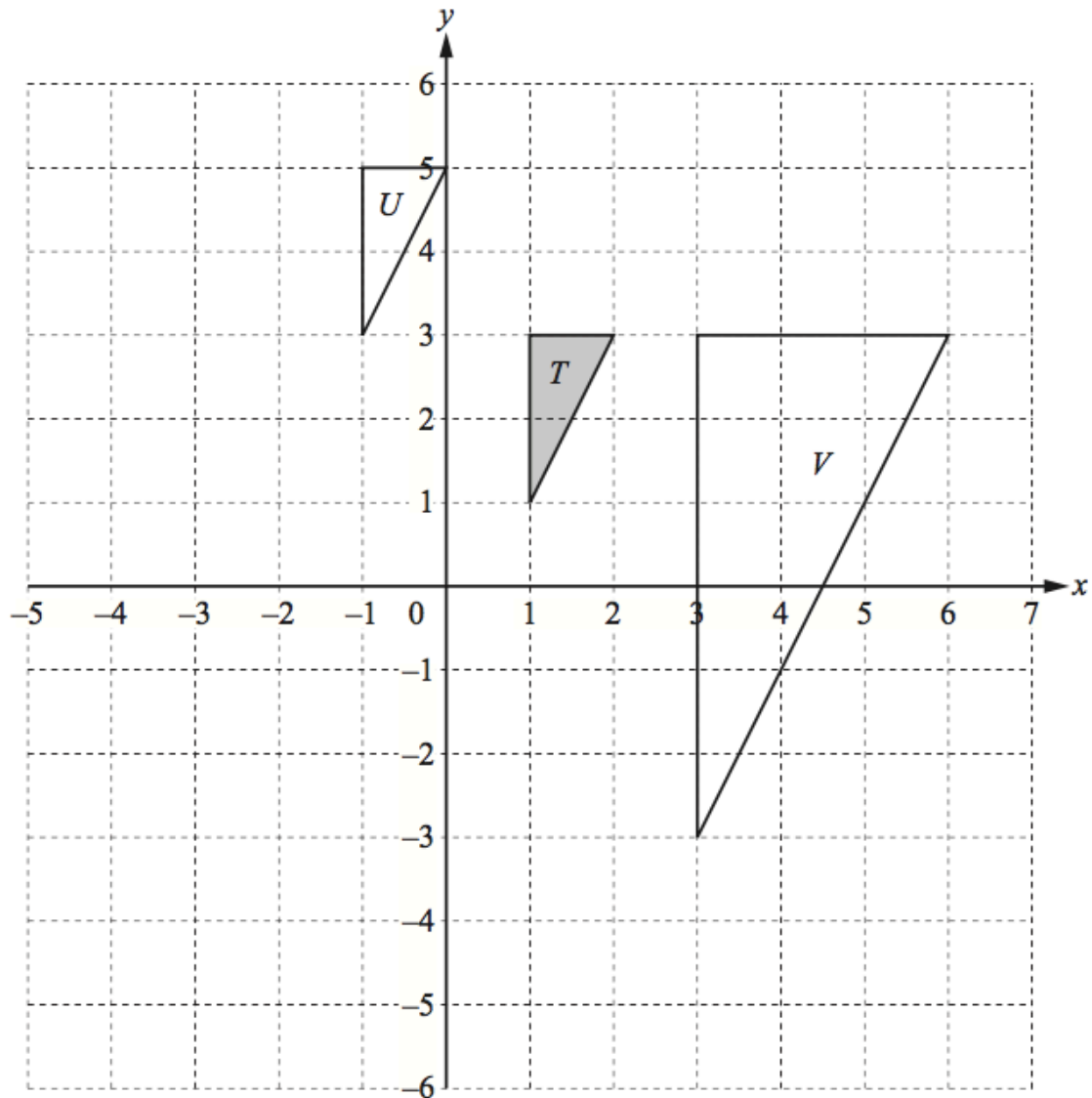
- (i) On the grid, draw the image of triangle A after an enlargement with a scale -1.5 and centre of enlargement at $(0, 0)$. [2]

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

Answer:

..... [3]

11.



(a) On the grid, draw the image of

(i) triangle T after a reflection in the line $x = -1$. [2]

(ii) triangle T after a rotation through 180° about $(0, 0)$. [2]

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

(i) triangle T onto triangle U

Answer: [2]

(ii) triangle T onto triangle V .

Answer:

..... [3]