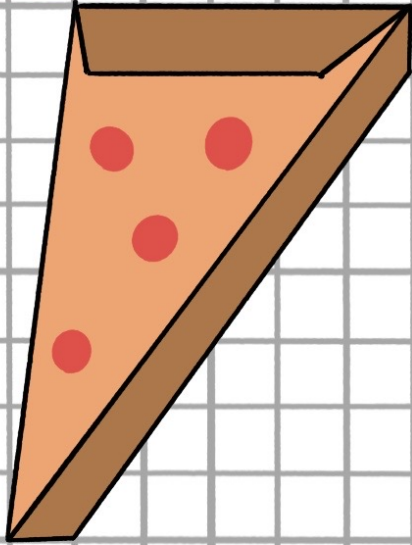
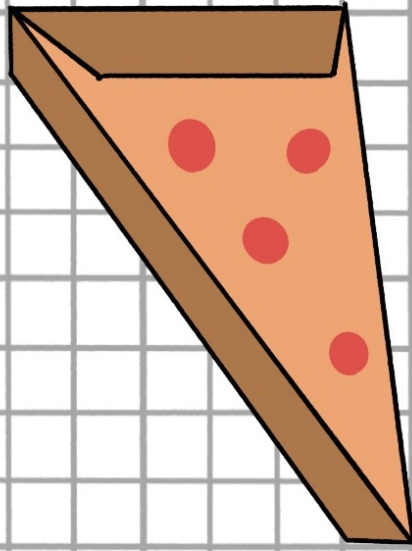


Transformation

Pre image



Reflection

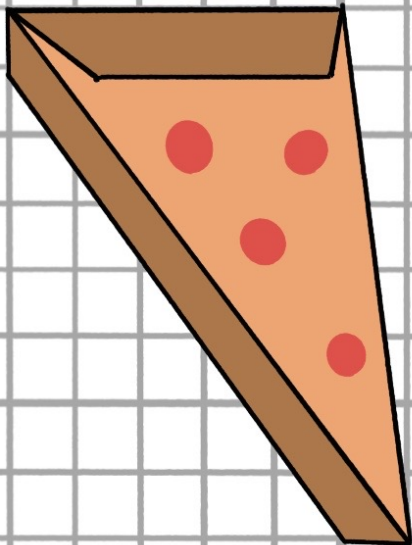


-9 -8 -7 -6 -5 -4 -3 -2 -1

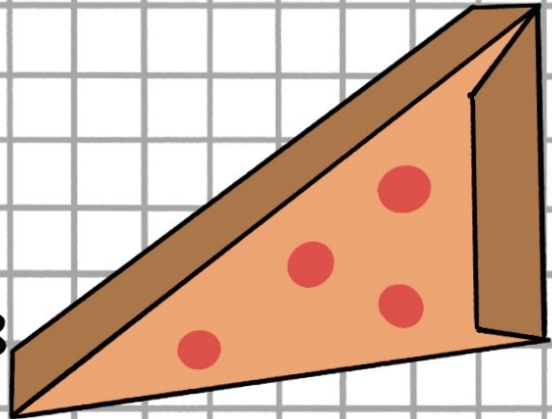
10
9
8
7
6
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10

1 2 3 4 5 6 7 8 9

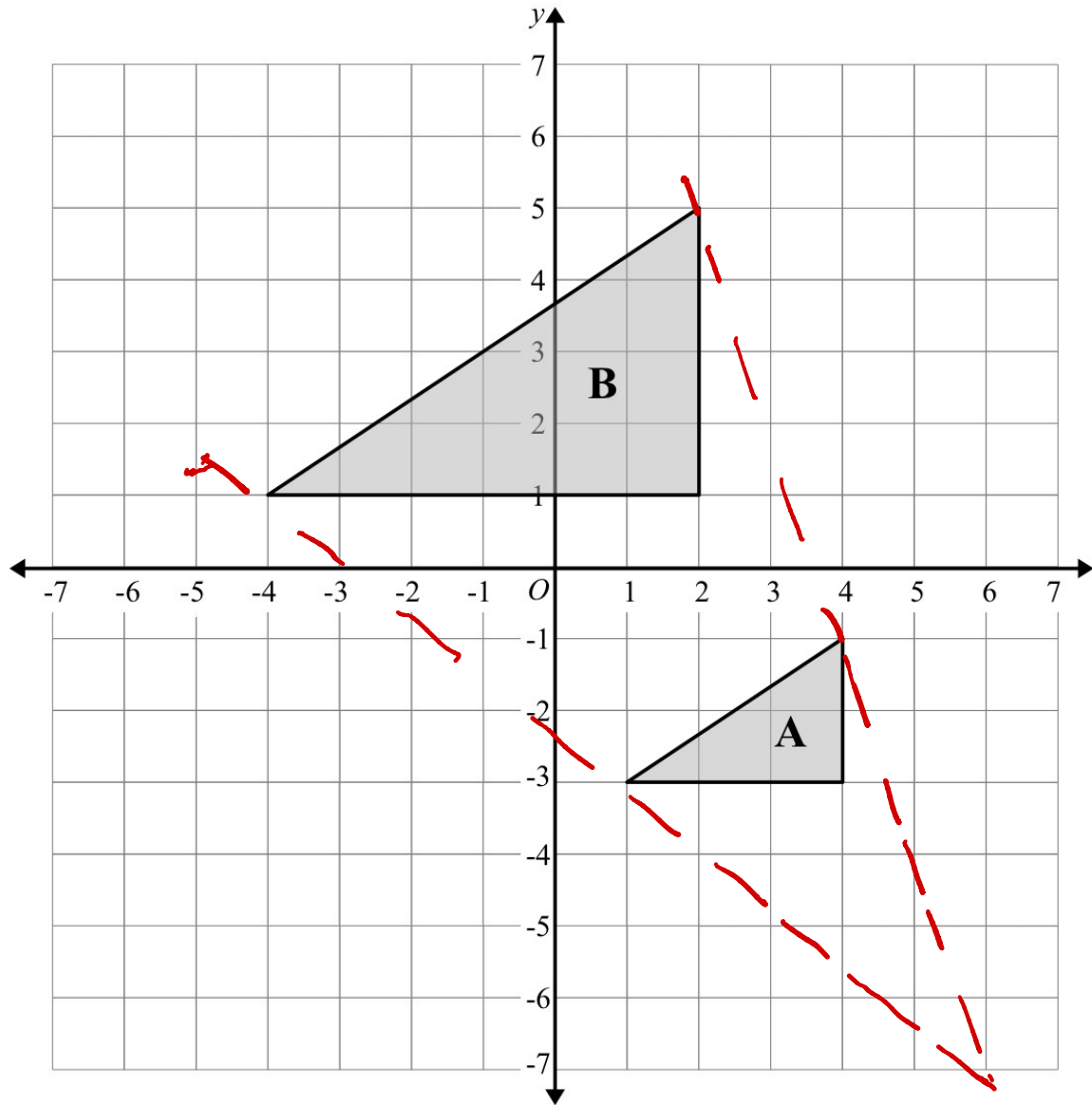
Translation



Rotation



1

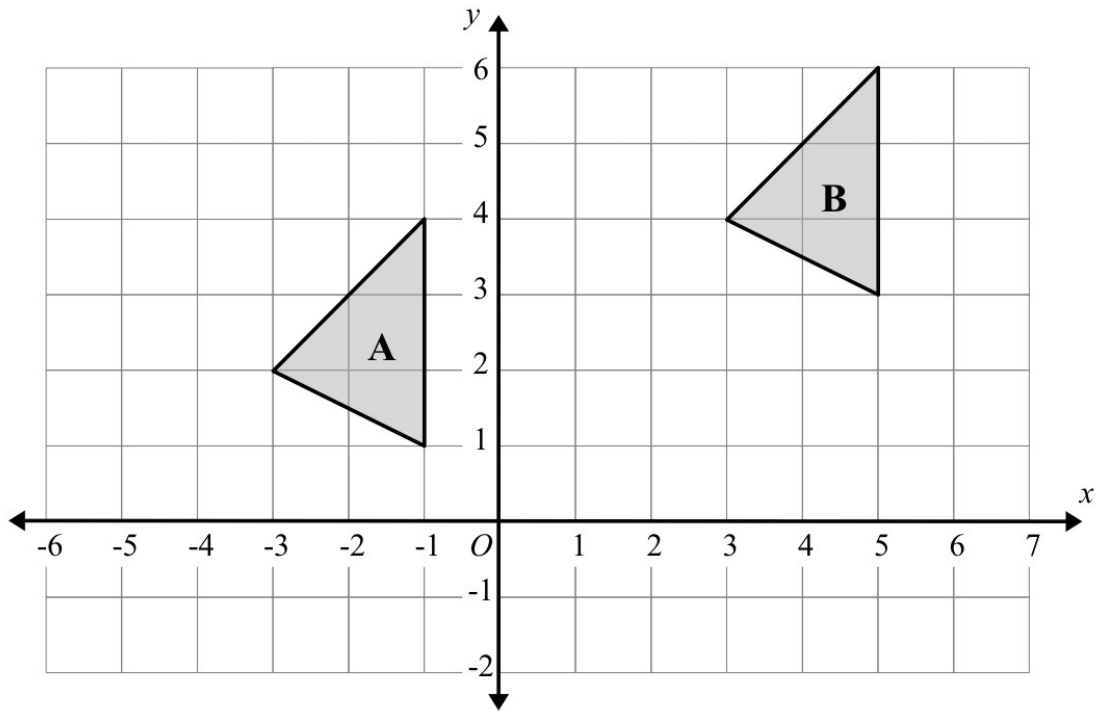


Describe fully the single transformation that maps triangle A on triangle B.

enlargement of scale factor 2, centre of
enlargement (6, -7)

(Total for question 1 is 2 marks)

2

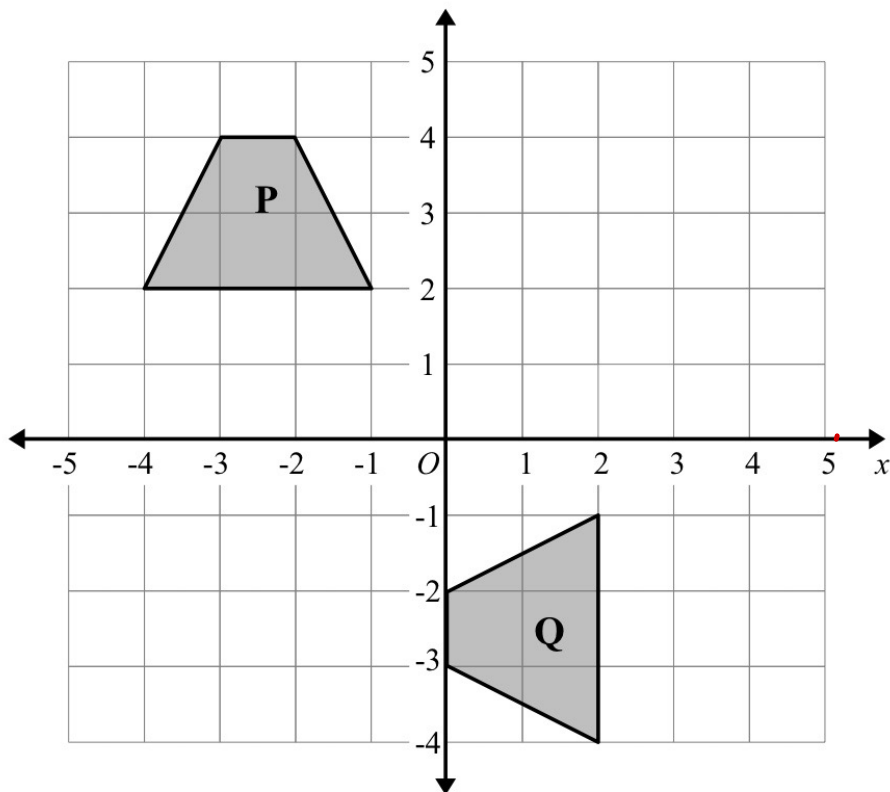


Describe fully the single transformation that maps triangle A on triangle B.

..... translation by vector $\begin{pmatrix} 6 \\ 2 \end{pmatrix}$

(Total for question 2 is 2 marks)

3

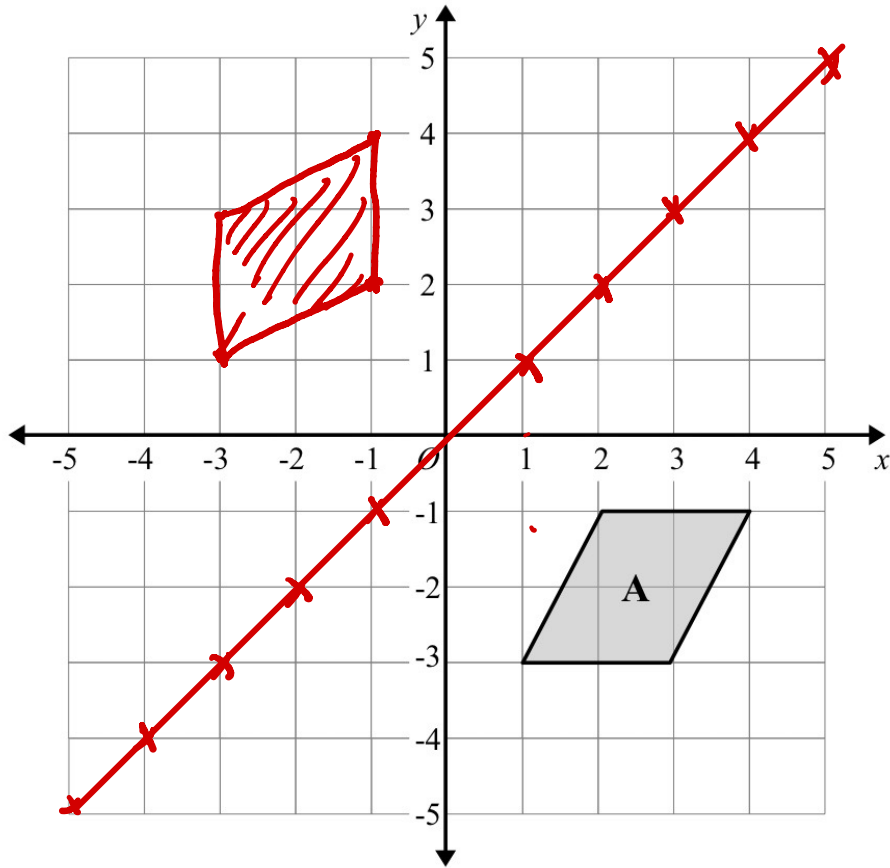


Describe fully the single transformation that maps trapezium P on trapezium Q.

..... rotation 90° anticlockwise at $(2, 2)$

(Total for question 3 is 2 marks)

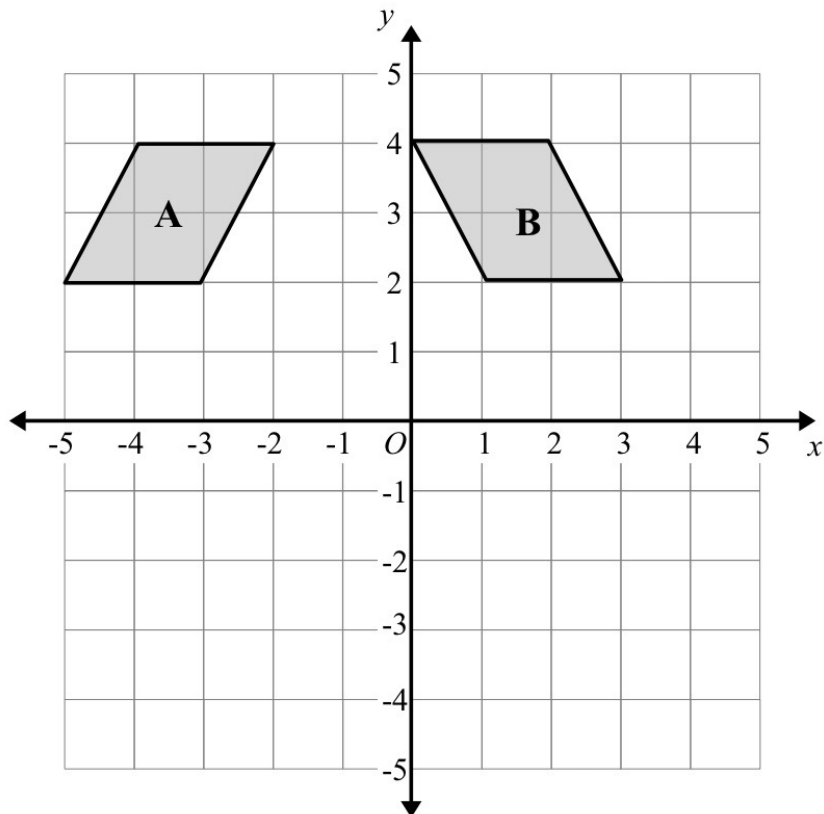
4



Reflect shape A in the line with equation $y = x$

(Total for question 4 is 2 marks)

5

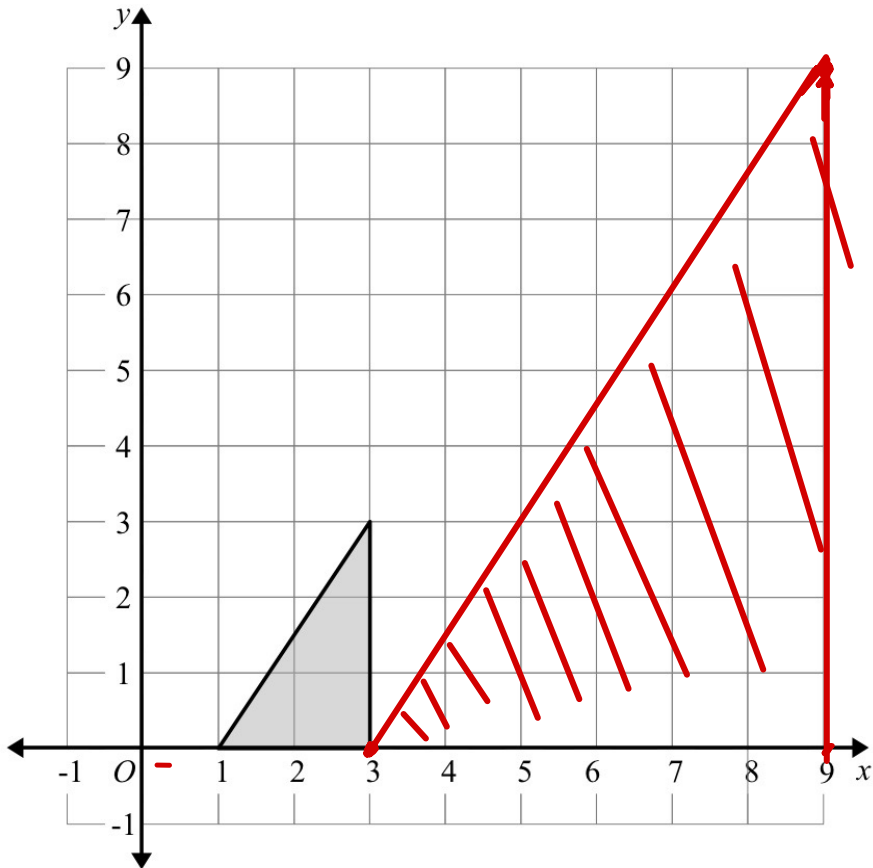


Describe fully the single transformation that maps shape A onto shape B.

reflection by the line $x = -1$

(Total for question 5 is 2 marks)

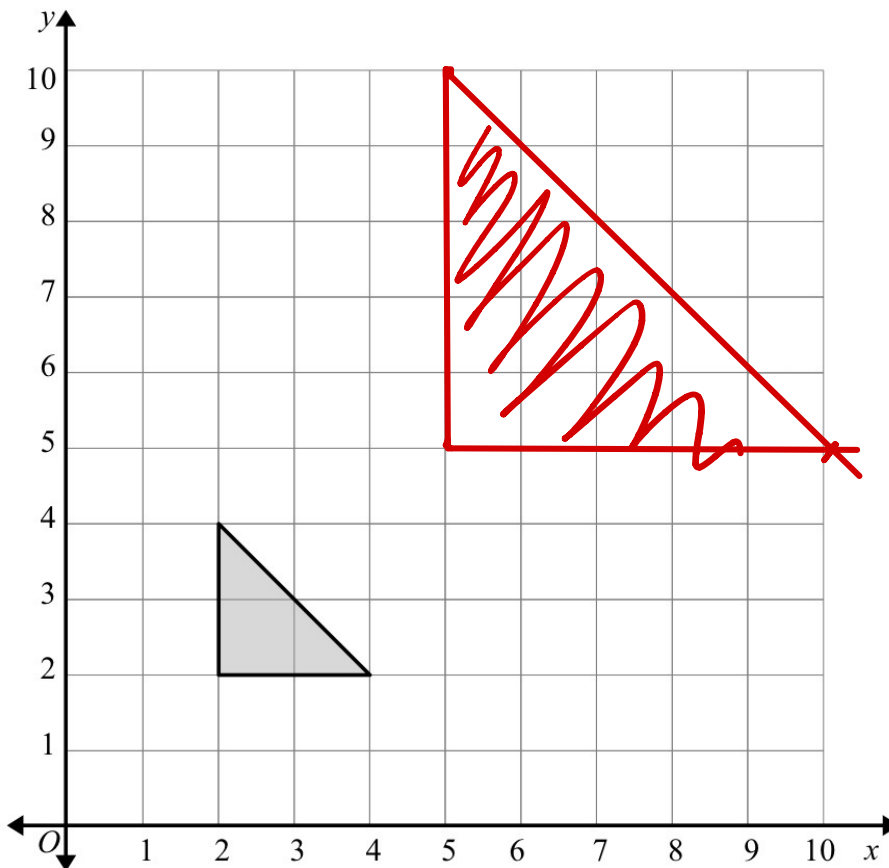
6



Enlarge the shaded triangle by scale factor 3, centre O

(Total for question 6 is 2 marks)

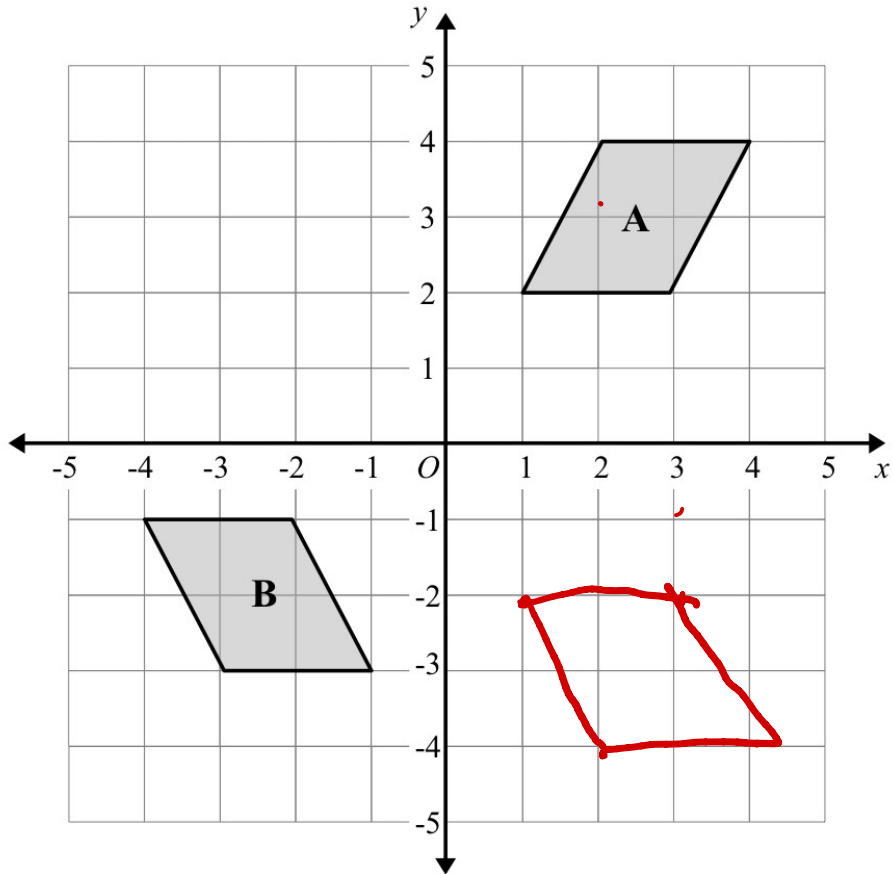
7



Enlarge the shaded triangle by scale factor 2.5, centre O .

(Total for question 7 is 2 marks)

8



Shape **A** is transformed to shape **B** by a reflection in the x axis followed by a translation $\begin{pmatrix} p \\ q \end{pmatrix}$

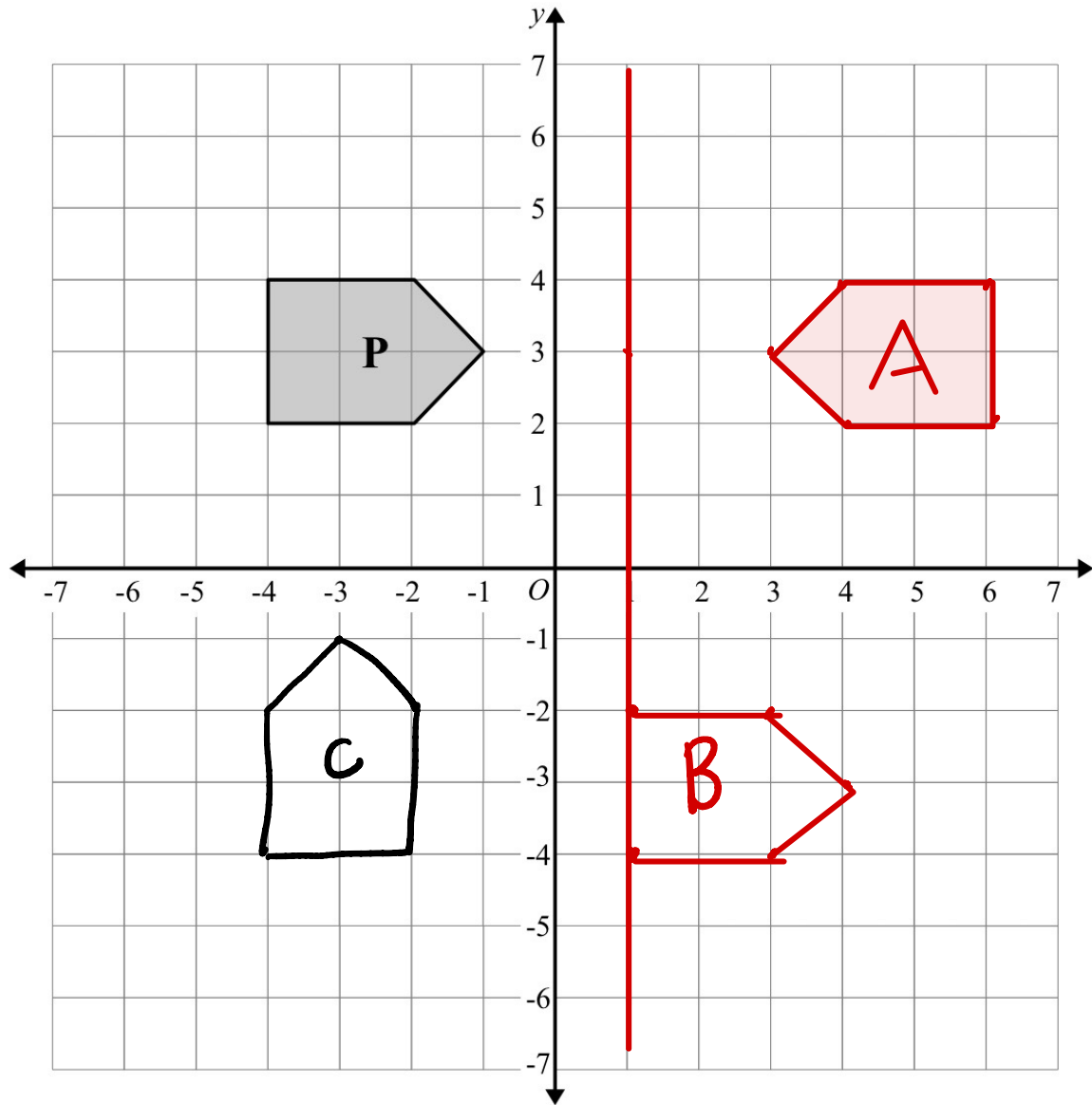
Find the value of p and the value of q .

$p = \dots -5 \dots$

$q = \dots 1 \dots$

(Total for question 8 is 3 marks)

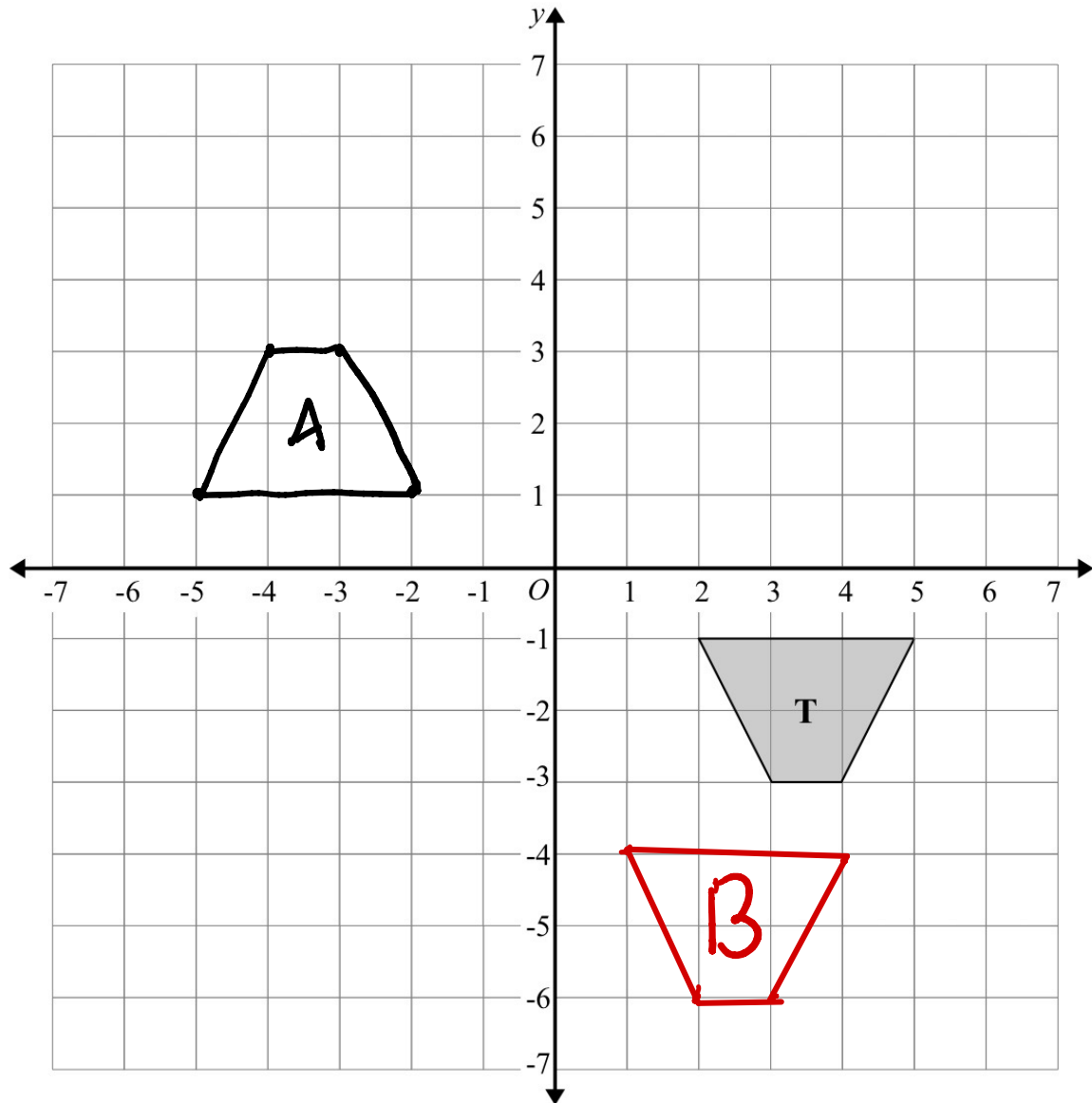
9



- (a) Reflect shape **P** in the line $x = 1$.
Label the new shape **A**.
- (b) Translate shape **P** by the vector $\begin{pmatrix} 5 \\ -6 \end{pmatrix}$
Label the new shape **B**.
- (c) Rotate shape **P** by 90° anticlockwise, centre O
Label the new shape **C**

(Total for question 9 is 3 marks)

10

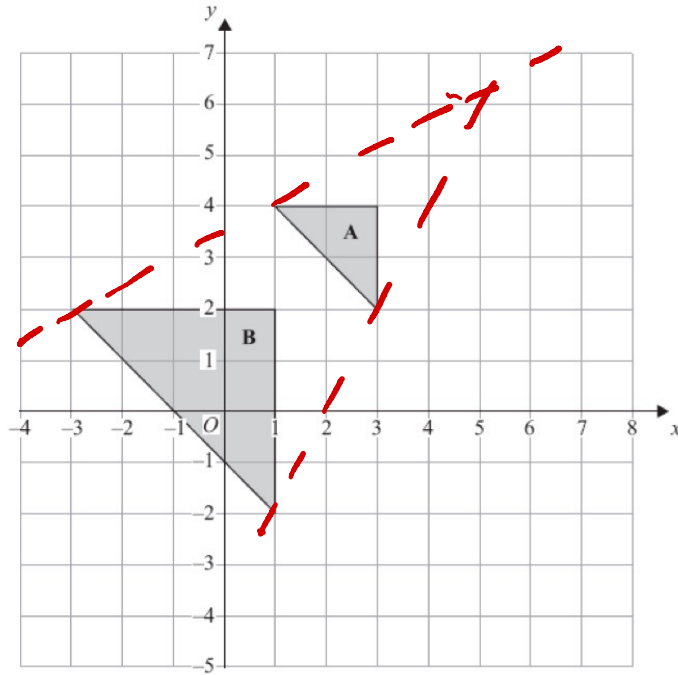


(a) Rotate trapezium **T** 180° about the origin.
Label the new trapezium **A**.

(b) Translate trapezium **T** by the vector $\begin{pmatrix} -1 \\ -3 \end{pmatrix}$
Label the new trapezium **B**.

(Total for question 10 is 2 marks)

1.

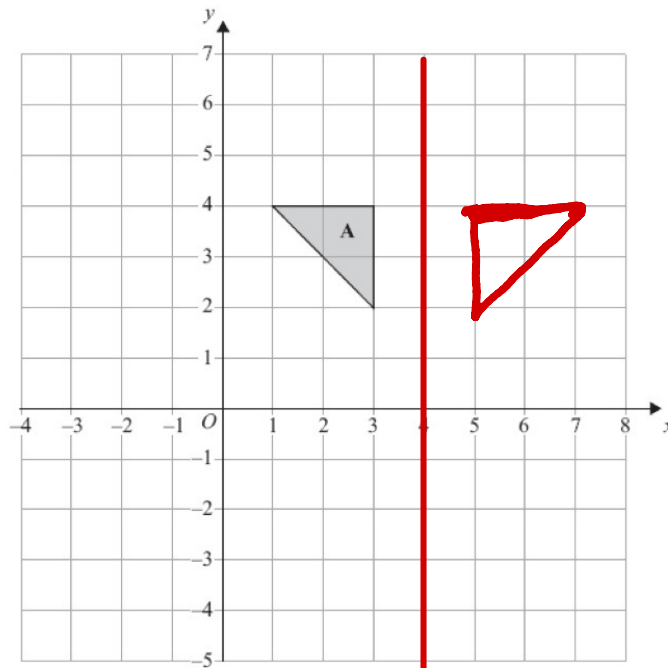


Triangle **A** and triangle **B** are drawn on the grid.

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

enlargement by scale factor 2, centre
of enlargement (5, 6)

(3)

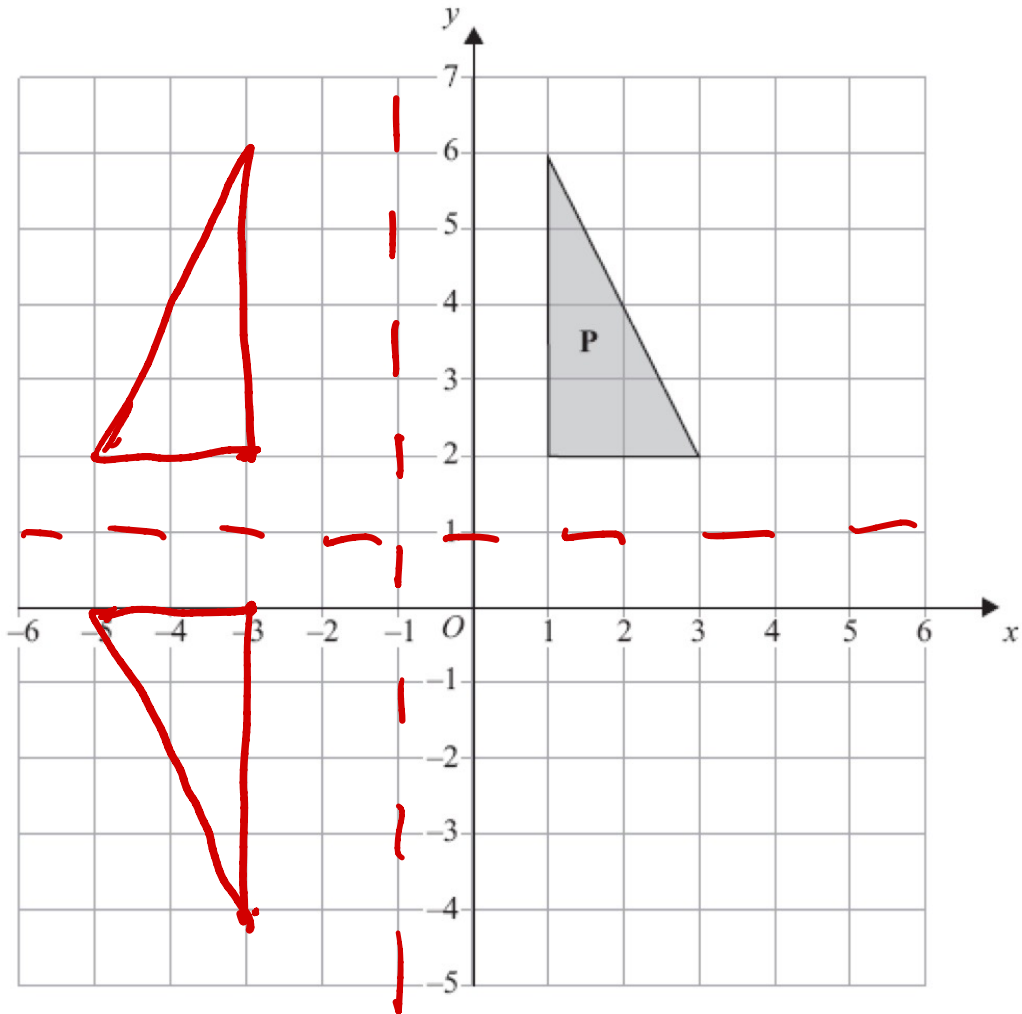


(b) Reflect triangle **A** in the line $x = 4$

(2)

(5 marks)

2.



Triangle **P** is drawn on a coordinate grid.

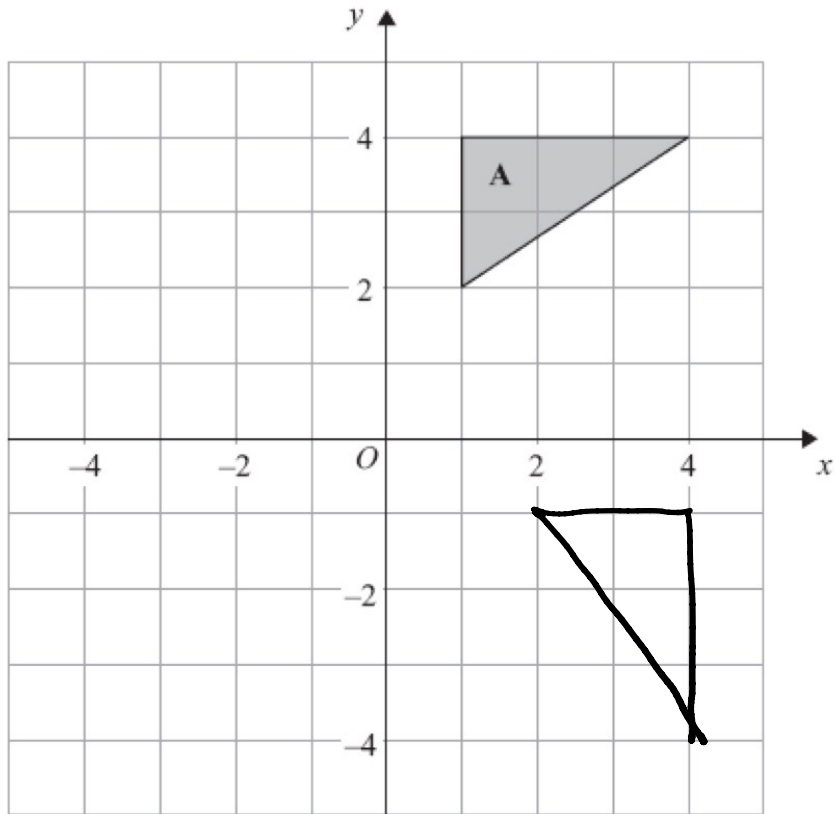
The triangle **P** is reflected in the line $x = -1$ and then reflected in the line $y = 1$ to give triangle **Q**.

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

rotation of 180° at $(-1, 1)$

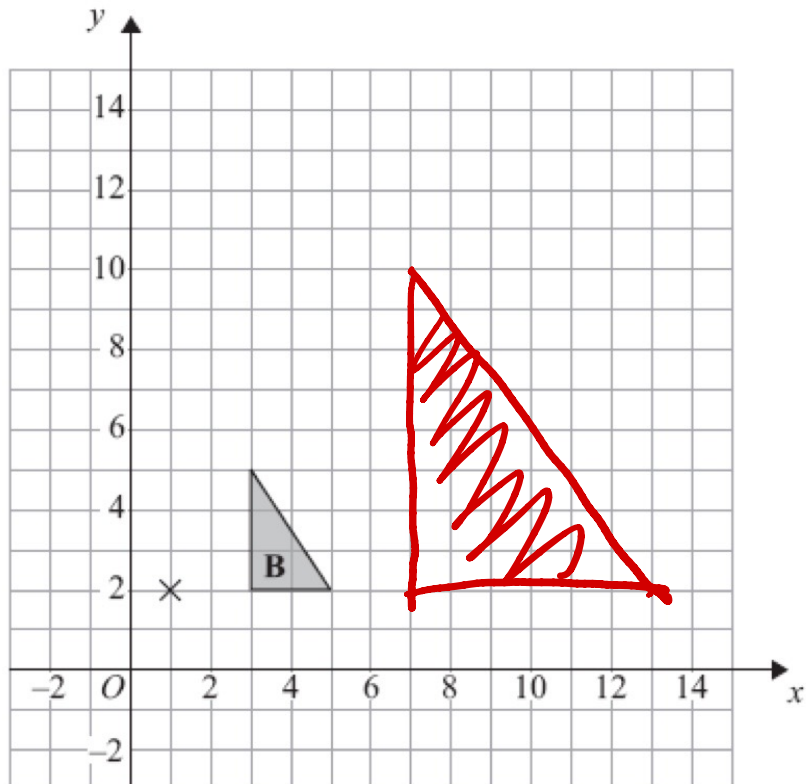
(3 marks)

3.



(a) Rotate triangle A 90° clockwise, centre O .

(2)

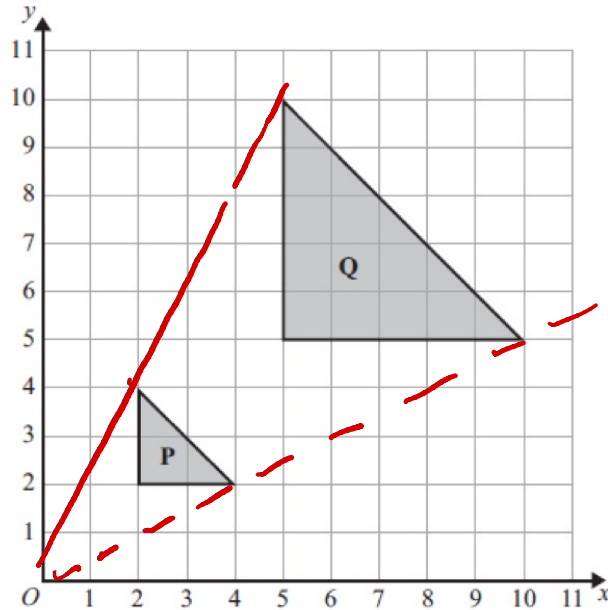


(b) Enlarge triangle B by scale factor 3, centre (1, 2).

(3)

(5 marks)

4.

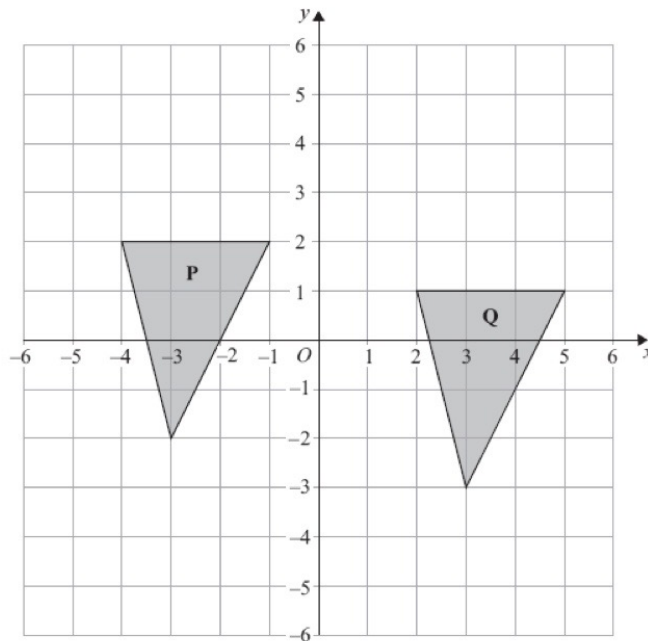


Describe fully the single transformation that maps shape **P** onto shape **Q**.

enlargement of scale factor 2.5,
centre of enlargement (0,0)

(3 marks)

5.

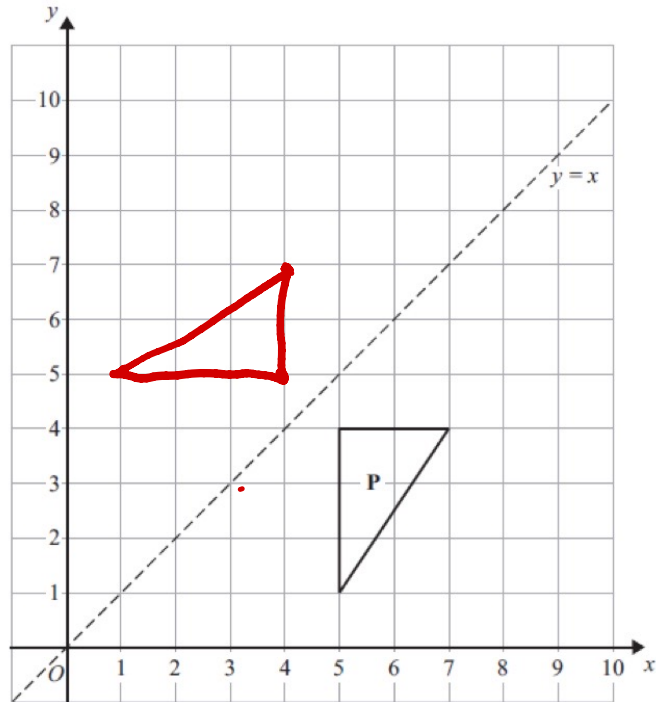


Describe fully the single transformation that maps triangle **P** onto triangle **Q**.

translation by vector $\begin{pmatrix} 6 \\ -1 \end{pmatrix}$

(3 marks)

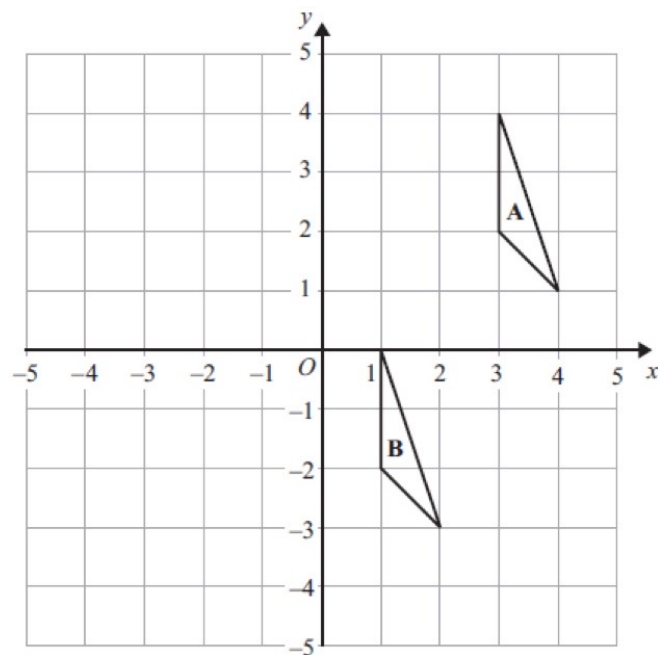
6. (a)



Reflect shape **P** in the line $y = x$

(2)

(b)



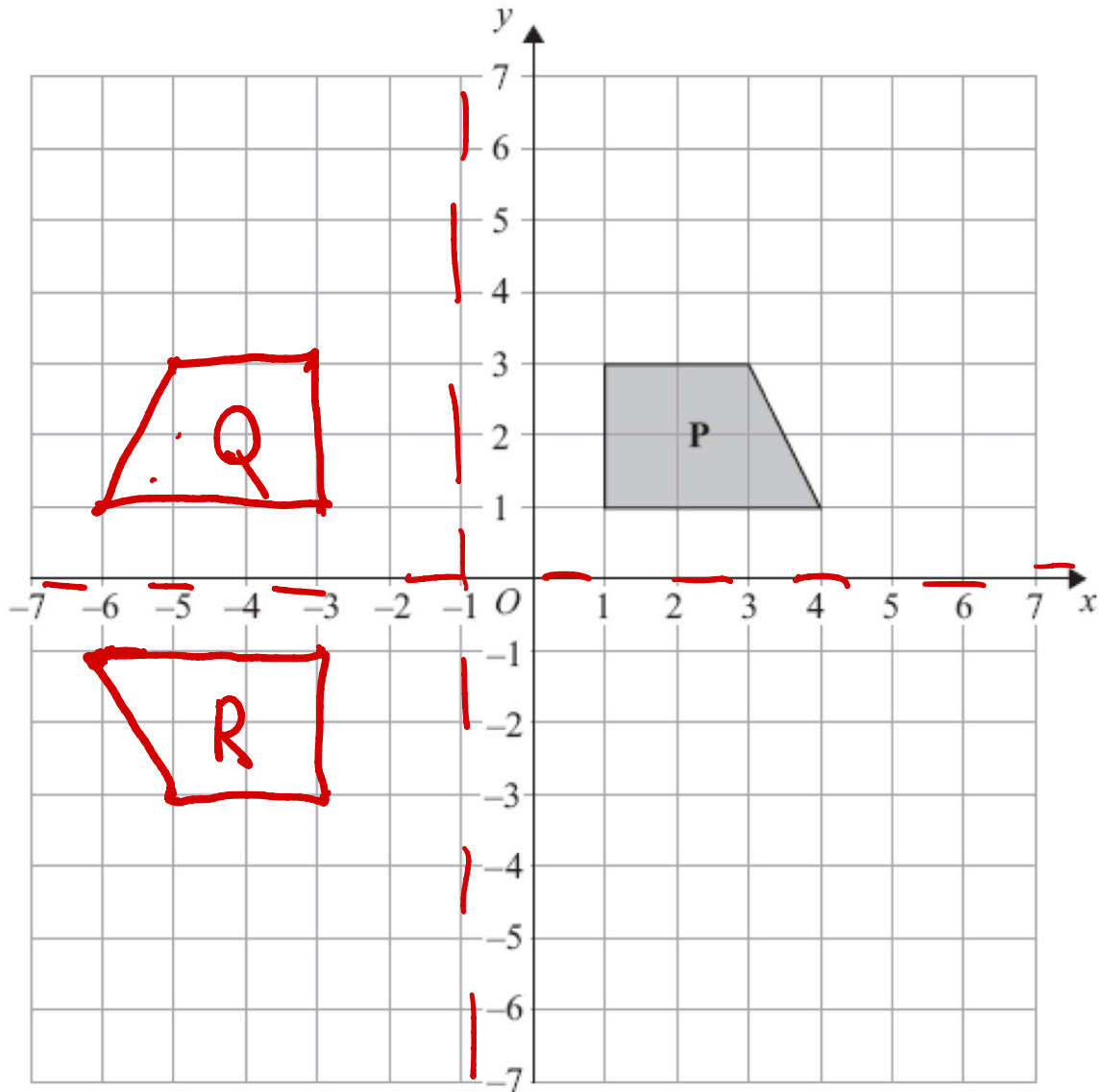
Describe fully the single transformation that maps triangle **A** onto triangle **B**.

translation by vector $\begin{pmatrix} -2 \\ -4 \end{pmatrix}$

(2)

(4 marks)

7.



Shape **P** is reflected in the line $x = -1$ to give shape **Q**.

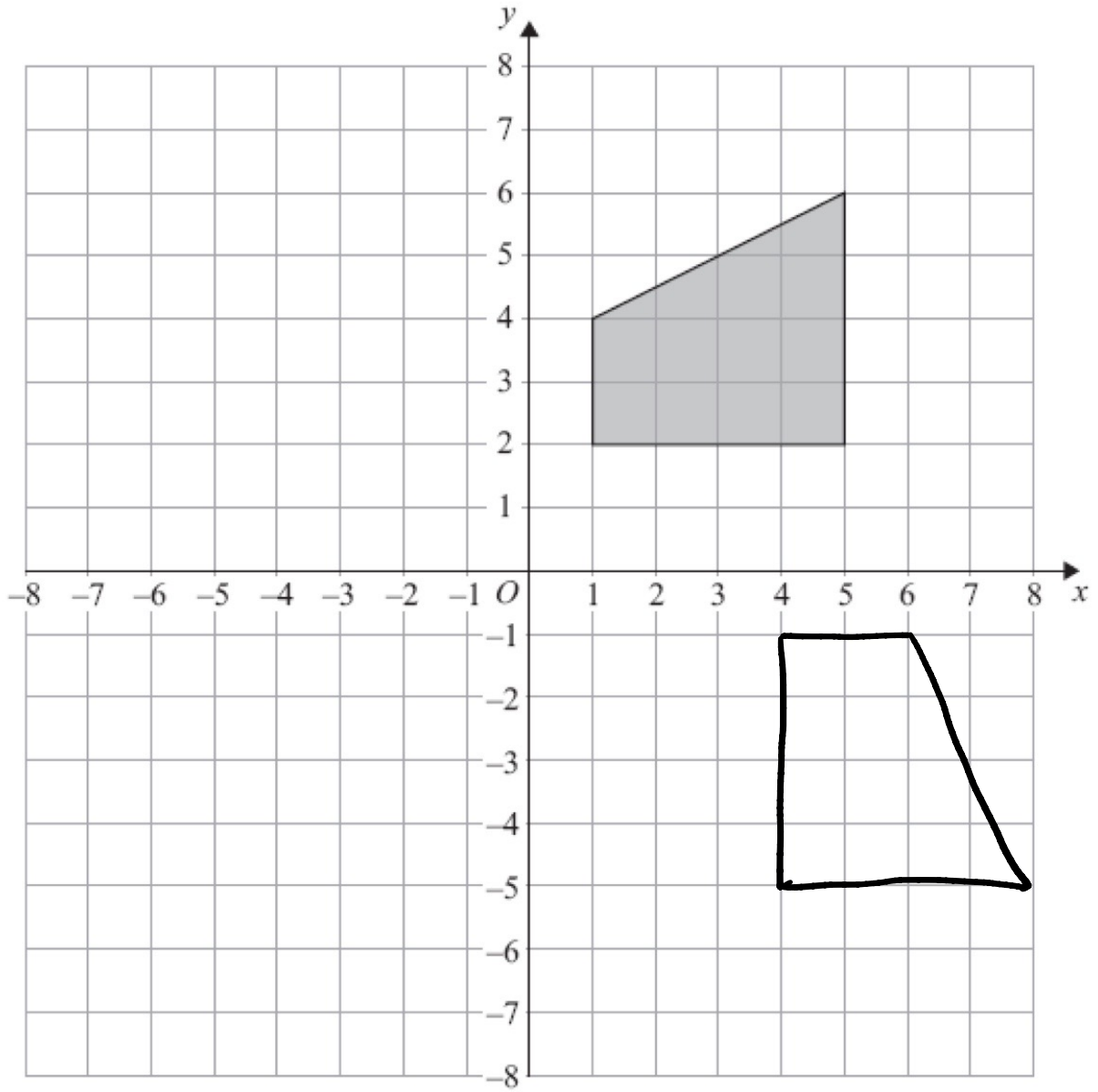
Shape **Q** is reflected in the line $y = 0$ to give shape **R**.

Describe fully the **single** transformation that maps shape **P** onto shape **R**.

rotation 180° at $(-1, 0)$

(3 marks)

8.



Rotate the shaded shape 90° clockwise about the point (1, -1).

(3 marks)