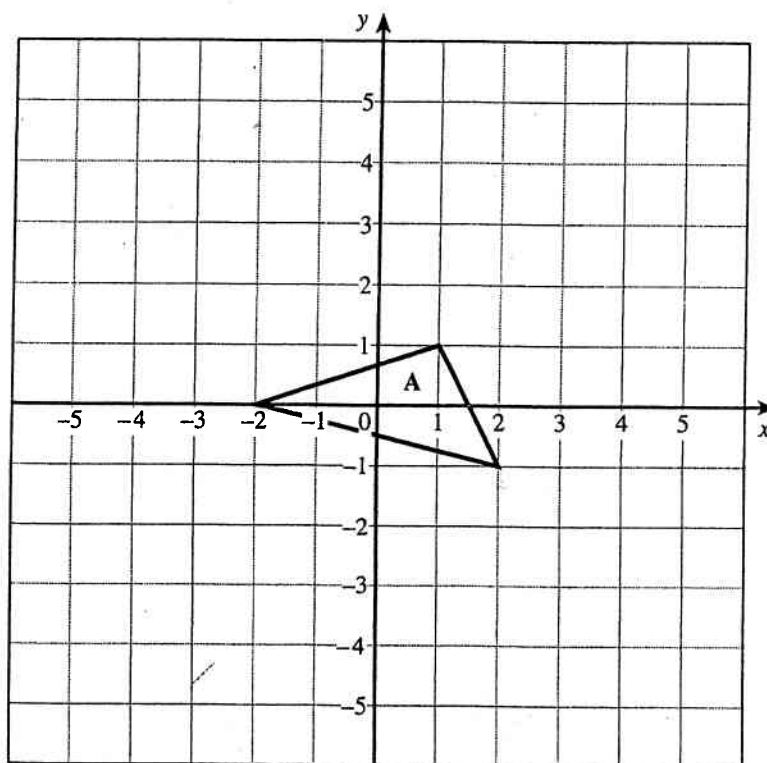


①

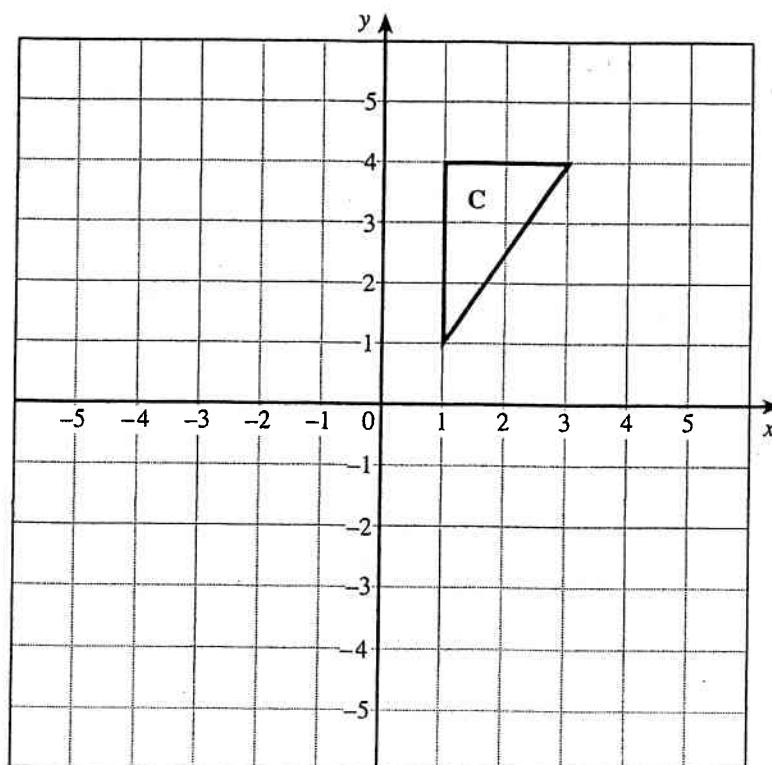
- (a) Draw the image of the triangle A after a translation of -3 units in the x -direction and 4 in the y -direction. Label the image B.

[2]



- (b) Rotate the triangle C through 90° clockwise about the point $(-2, 1)$. Label the image D.

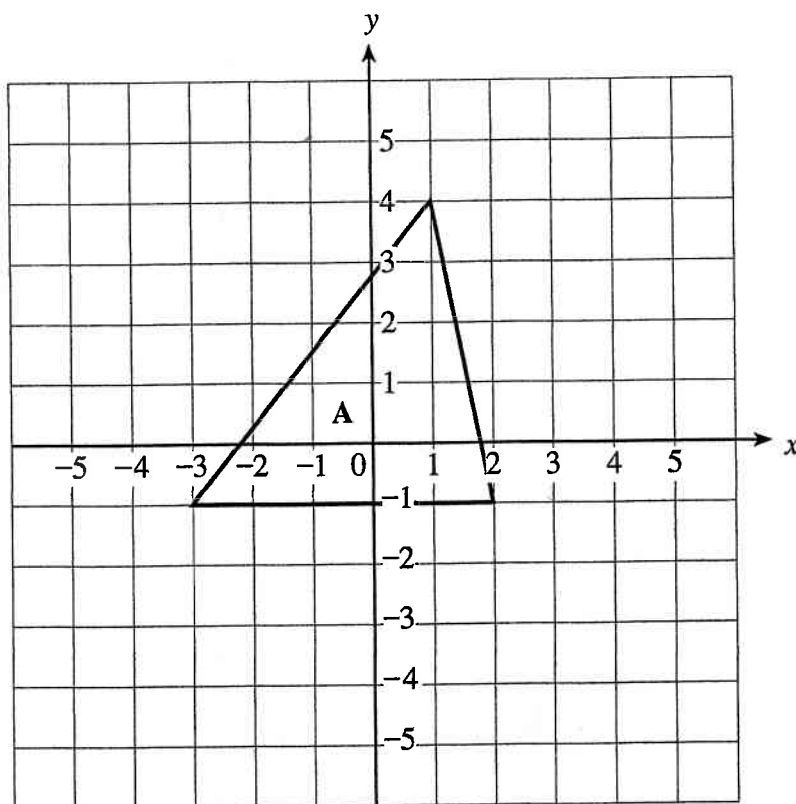
[2]



2

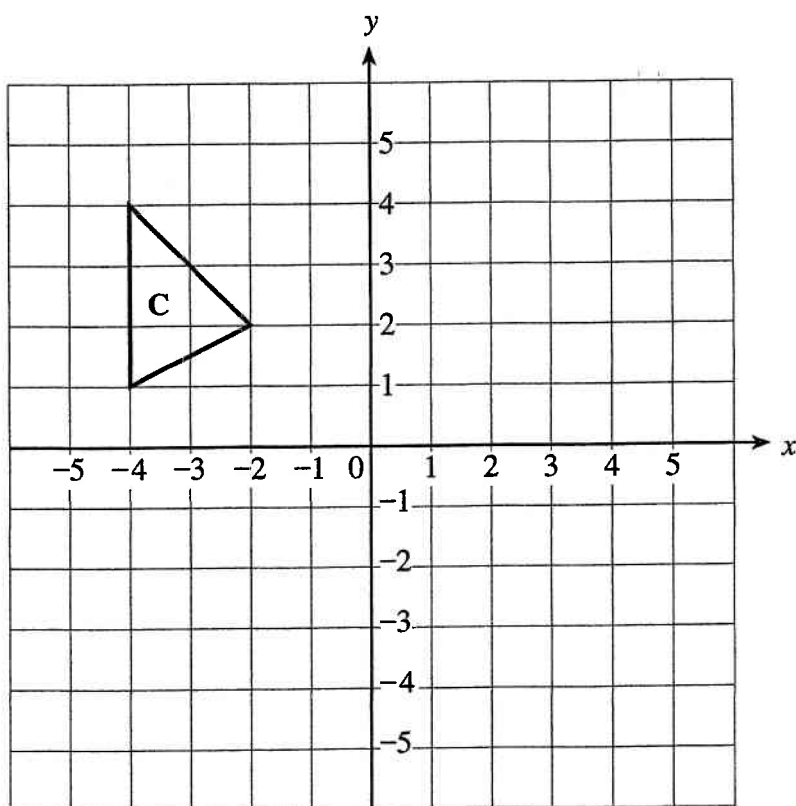
- (a) Draw the image of the triangle A after a reflection in the line $y = x$.
Label the image B.

[2]



- (b) Rotate the triangle C through 90° anticlockwise about the point (2,1).
Label the image D.

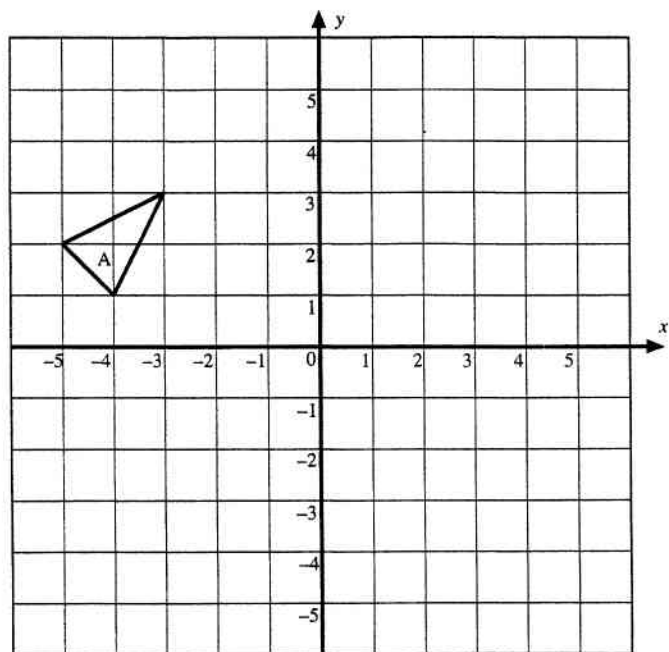
[2]



3

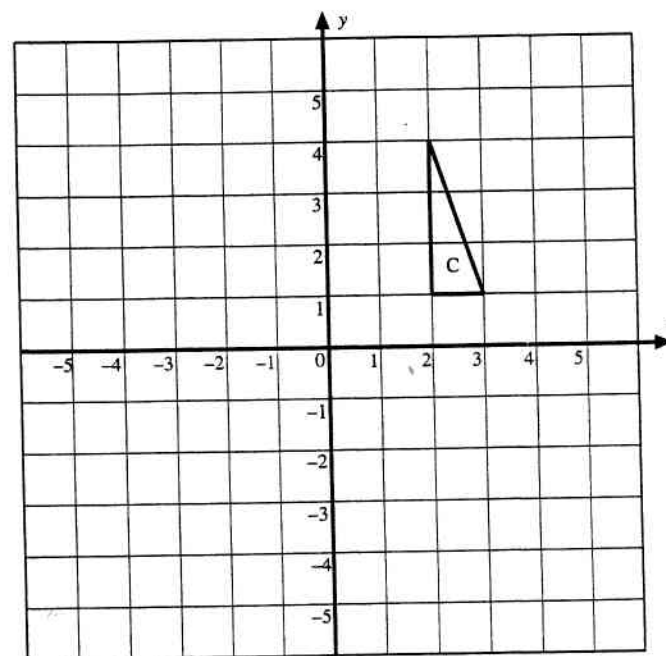
- (a) Reflect the shape A in the line $y = -x$. Label the image B.

[1]



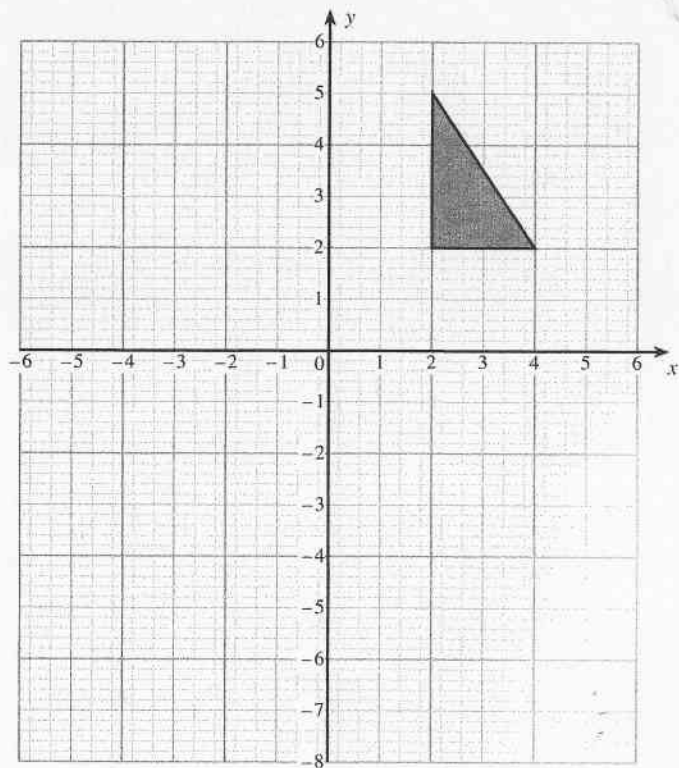
- (b) Rotate the shape C through 90° anti-clockwise about the point $(1, -2)$. Label the image D.

[2]



4

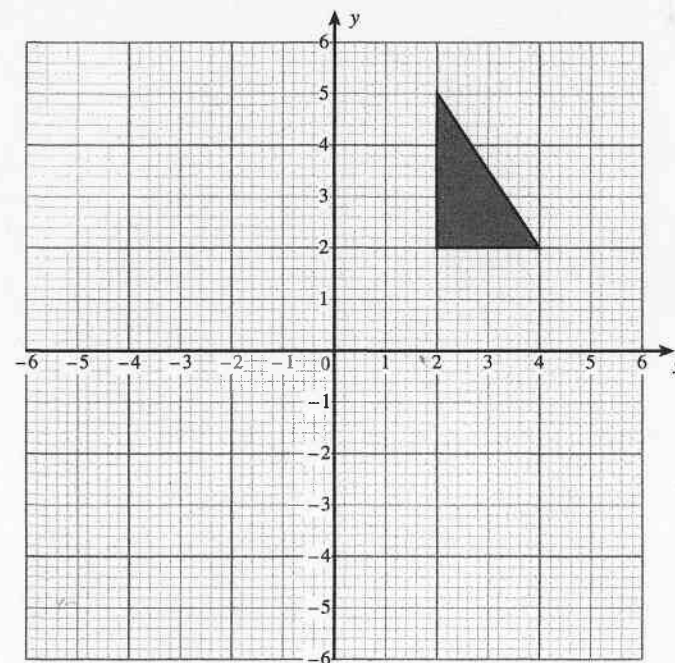
(a) Reflect the triangle shown in the line $y = -1$.



[2]

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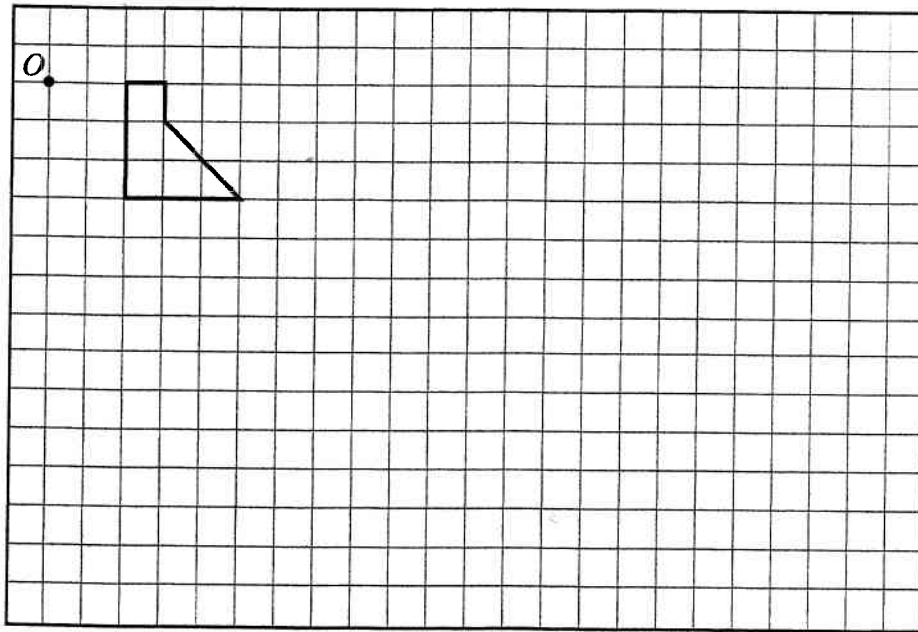
(b) Translate the triangle shown 4 to the left and 2 down.



[1]

Examiner
only
Arholwr
yn unig

- 5 On the grid below, draw the enlargement of the given shape using a scale factor of 3 and centre O . [3]



Clearly showing how you obtained your answer, ESTIMATE the value of

$$\frac{211 \times 59}{603}$$

[2]

Solve

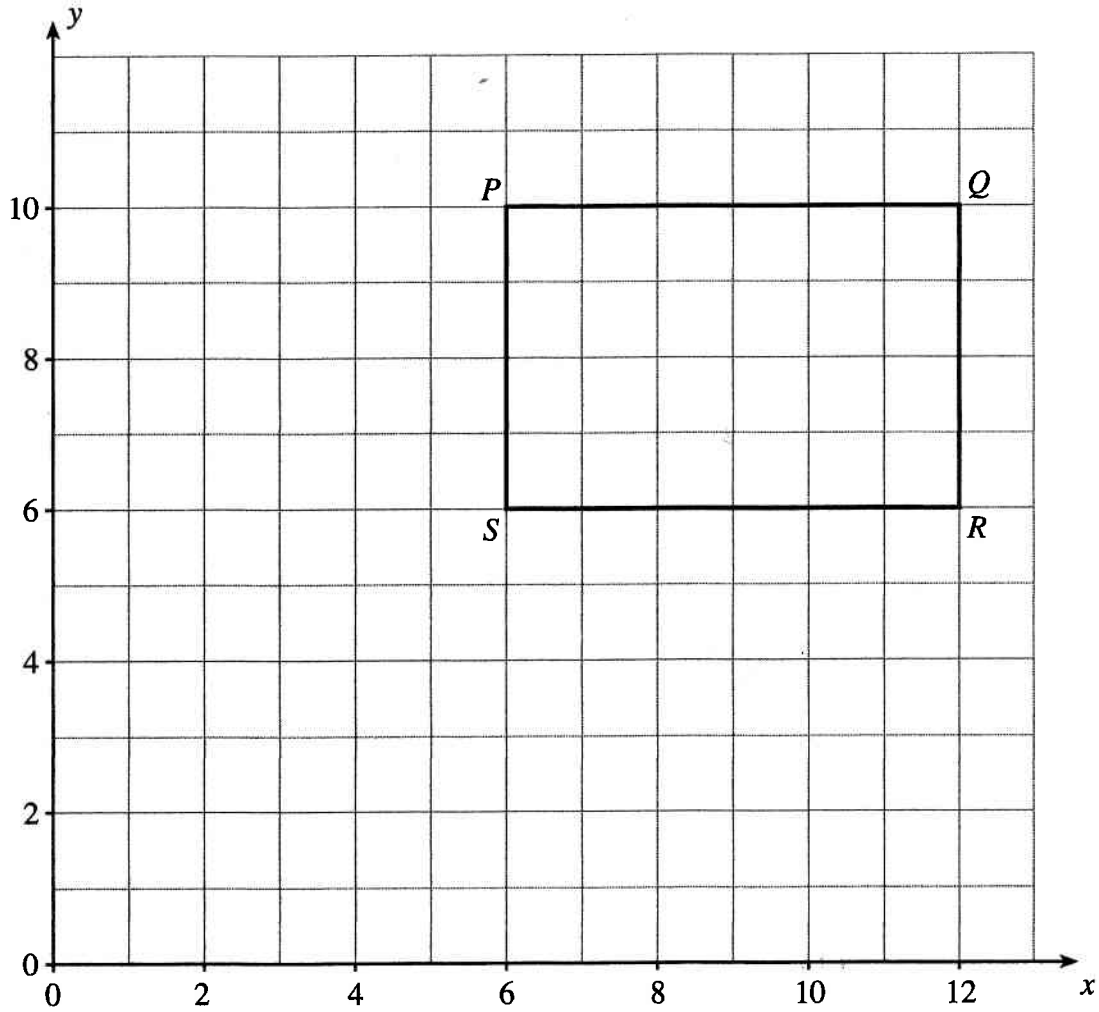
(a) $6x = 10 + 4x$,

[2]

(b) $4(x + 3) = 20$.

[3]

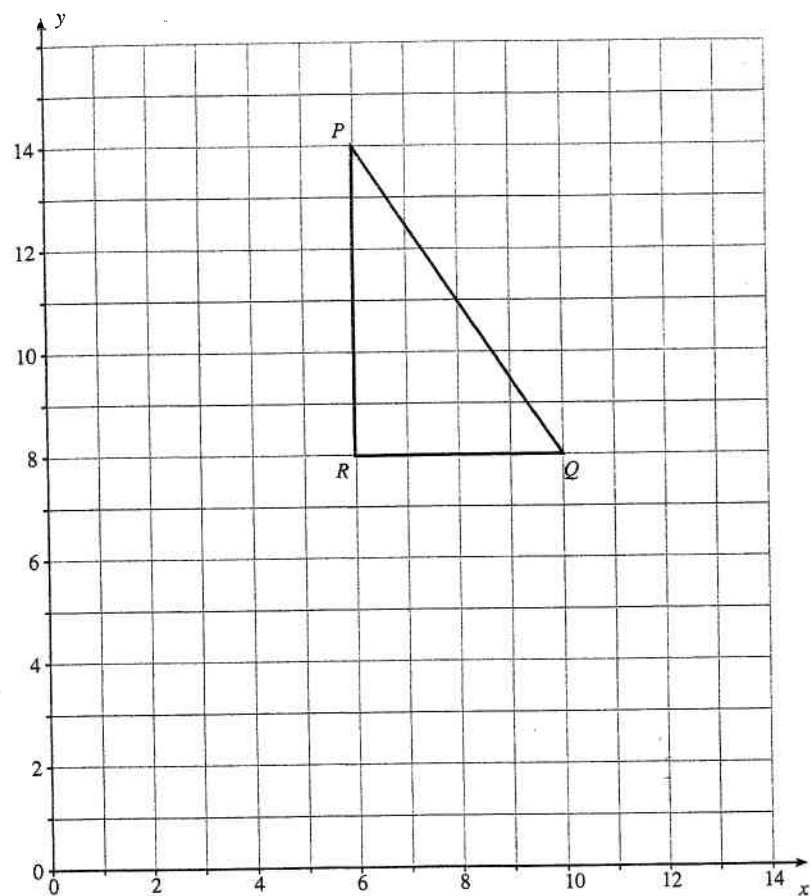
- 6 Enlarge the rectangle $PQRS$ by a scale factor $\frac{1}{2}$ using $(0, 0)$ as the centre of enlargement. [2]



7

- (a) Enlarge the triangle PQR using centre $(0, 0)$ by a scale factor of $\frac{1}{2}$.

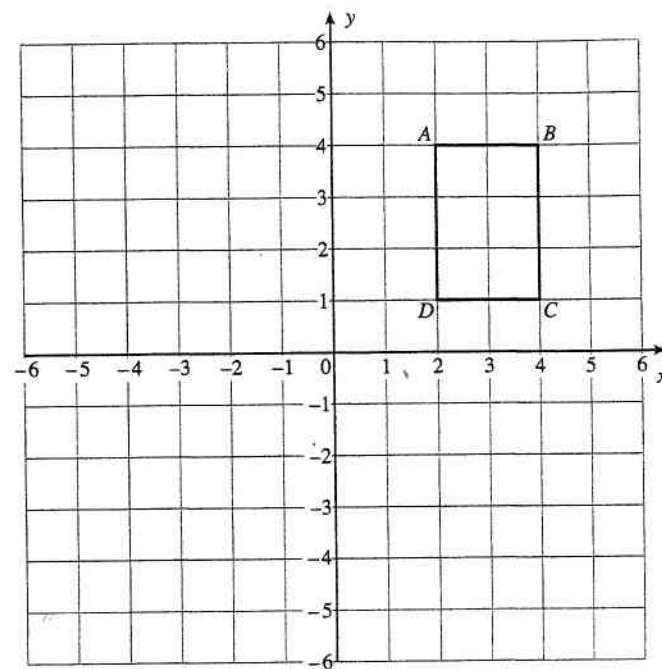
[2]



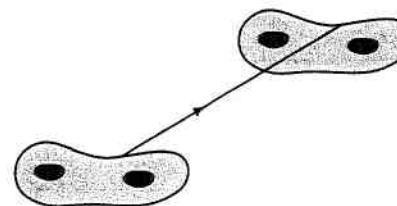
Examiner
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- (b) Rotate the rectangle $ABCD$ through 90° clockwise about the point $(2, 0)$.

[2]



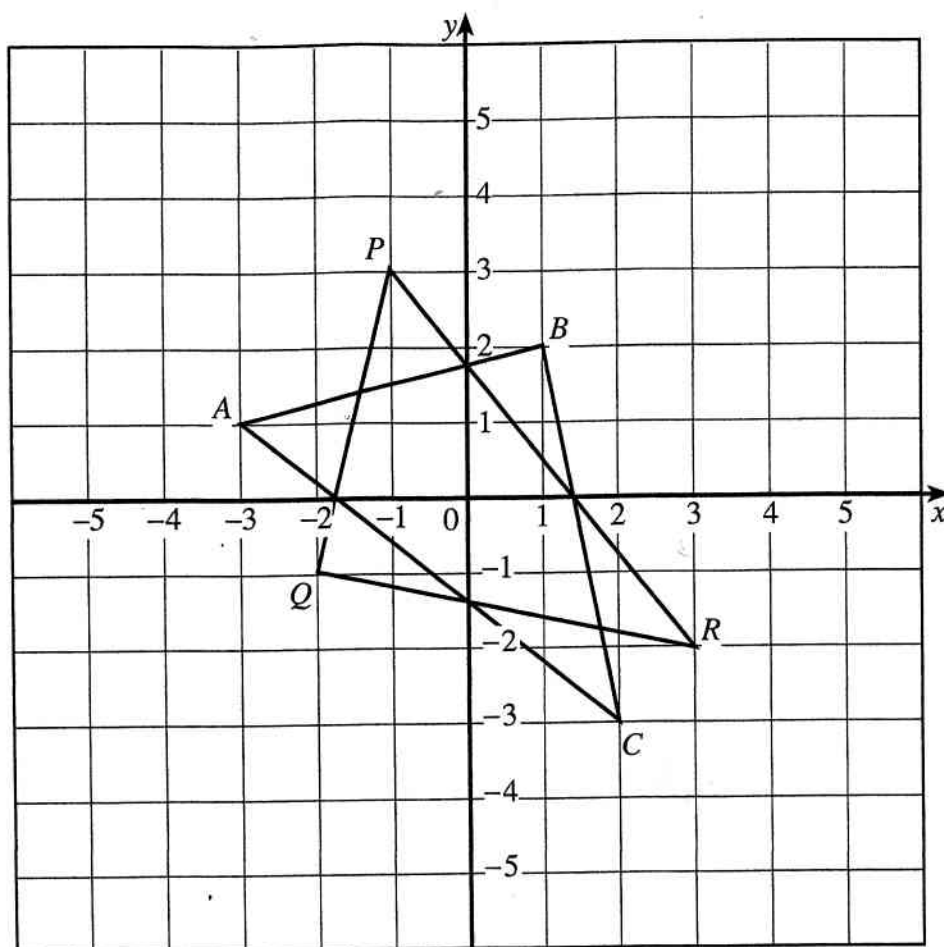
- (c) The diagram below shows a teacher's sketch of a transformation.



What is the name of this type of transformation?

[1]

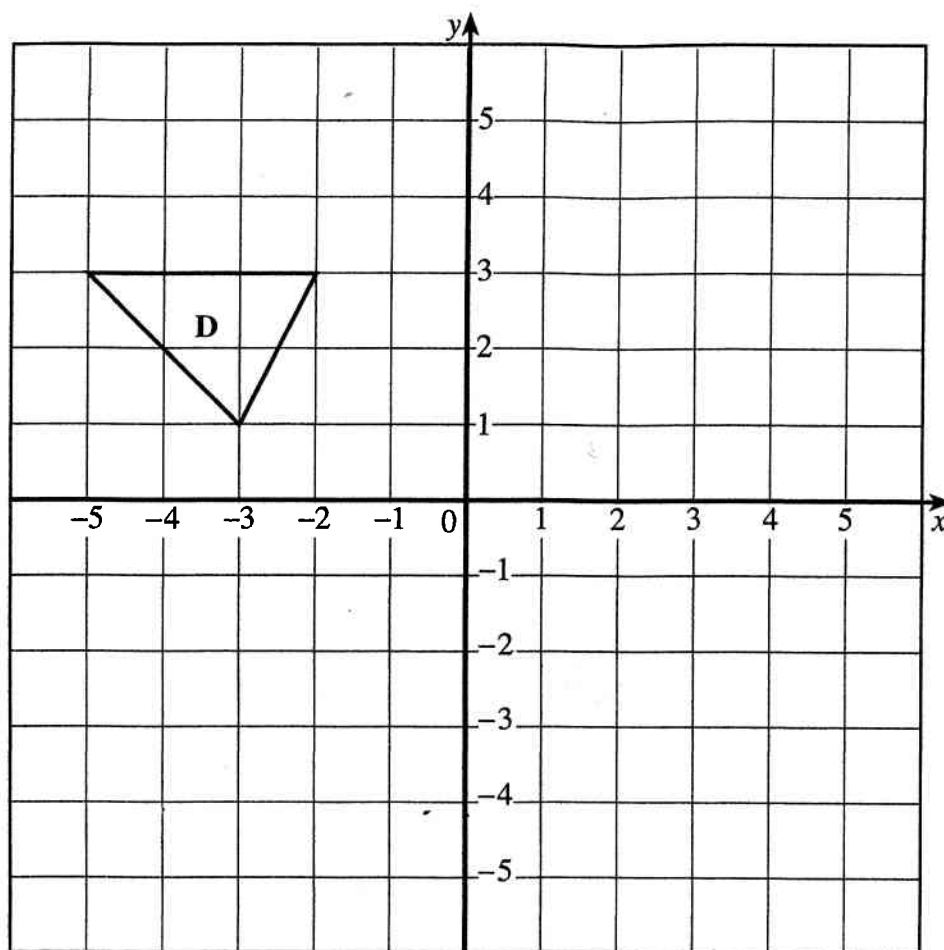
- 8 (a) Describe fully the transformation that transforms triangle ABC into triangle PQR .



[2]

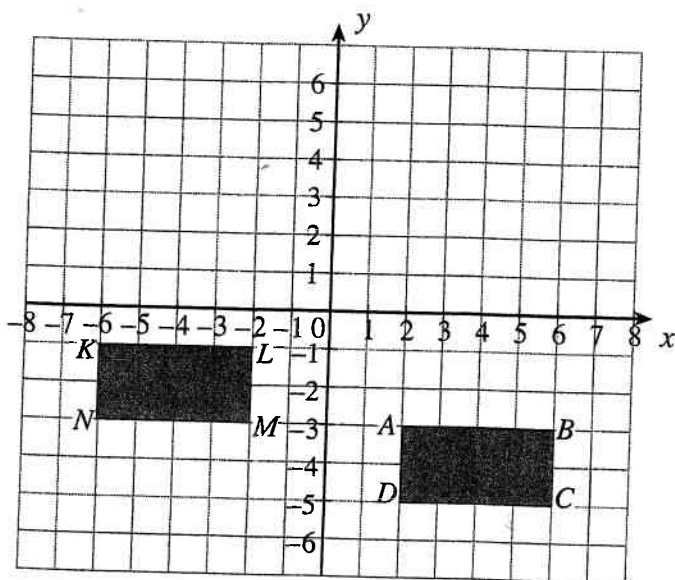
- (b) Rotate the triangle **D** through 90° anti-clockwise about the point $(-1, 1)$.
Label the image **E**.

[2]



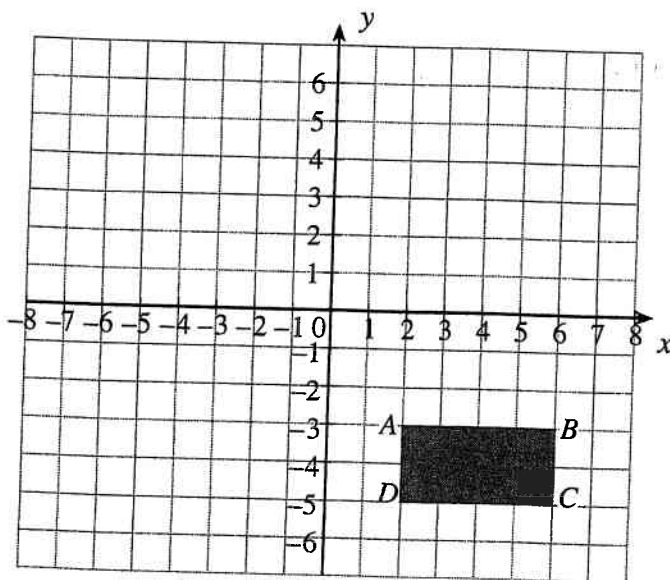
- 9 (a) Describe fully the transformation that transforms rectangle $ABCD$ into rectangle $KLMN$.

[2]



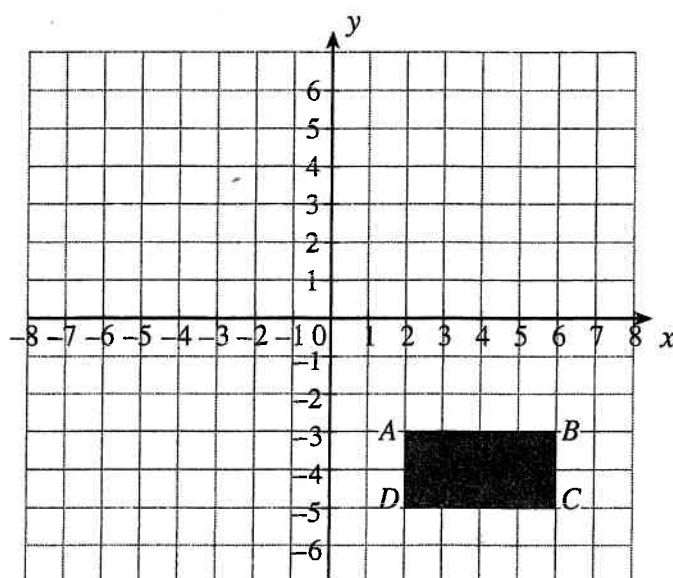
- (b) Rotate the rectangle $ABCD$ through 180° about the point $(1, -2)$.

[2]



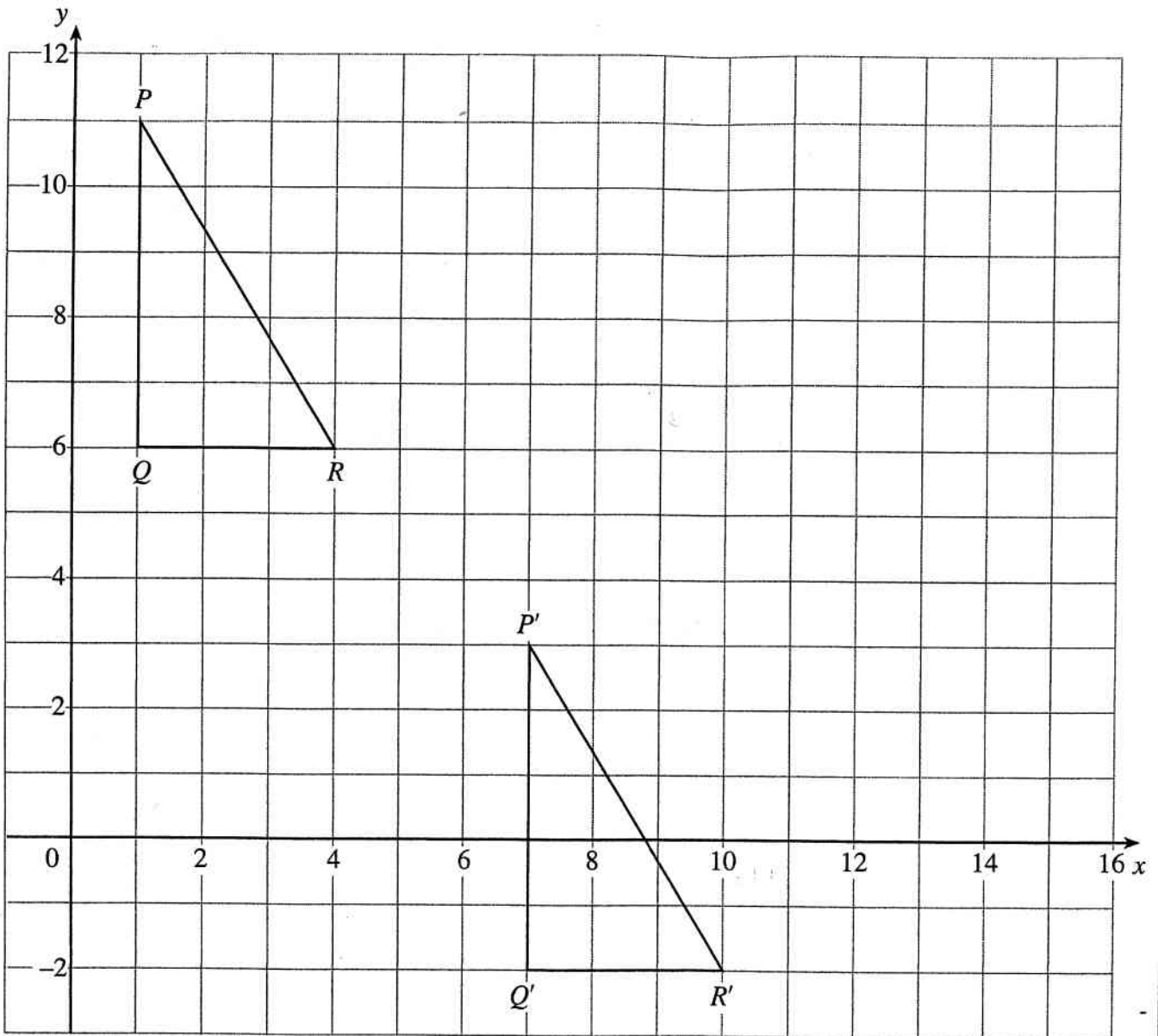
(c) Reflect the rectangle $ABCD$ in the line $y = x$.

[2]



10

The diagram on the grid below shows the translation of triangle PQR to triangle $P'Q'R'$.



Write down this translation of triangle PQR to triangle $P'Q'R'$ in **vector** form.

.....

.....

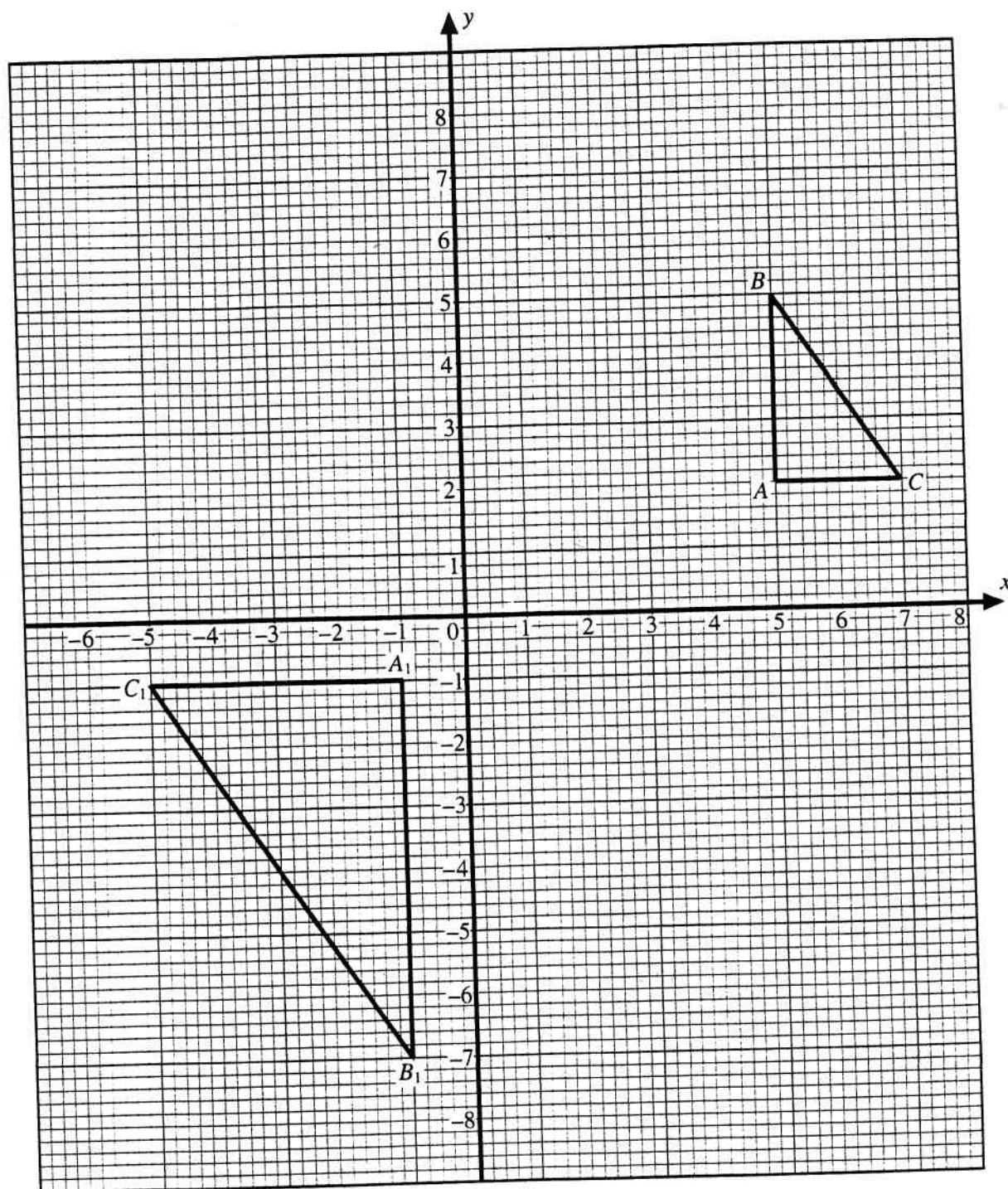
.....

.....

[2]

11

The diagram shows triangles ABC and $A_1B_1C_1$ drawn to scale.



Find the single transformation which takes triangle ABC to triangle $A_1B_1C_1$.

.....

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.....

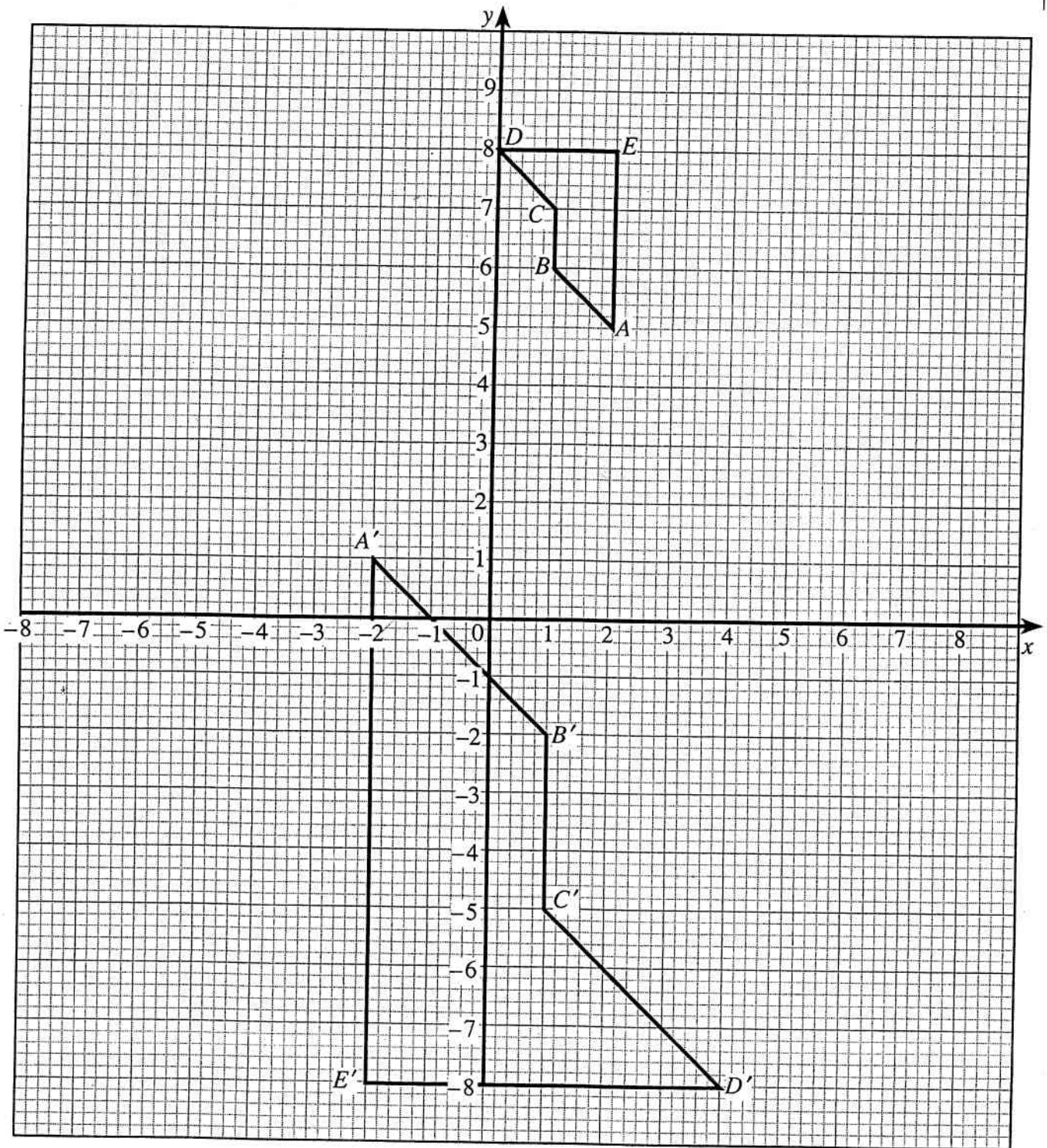
.....

.....

[3]

Turn over.

11. The diagram shows shapes $ABCDE$ and $A'B'C'D'E'$ drawn to scale.



Find the **single** transformation which takes shape $ABCDE$ to shape $A'B'C'D'E'$.

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