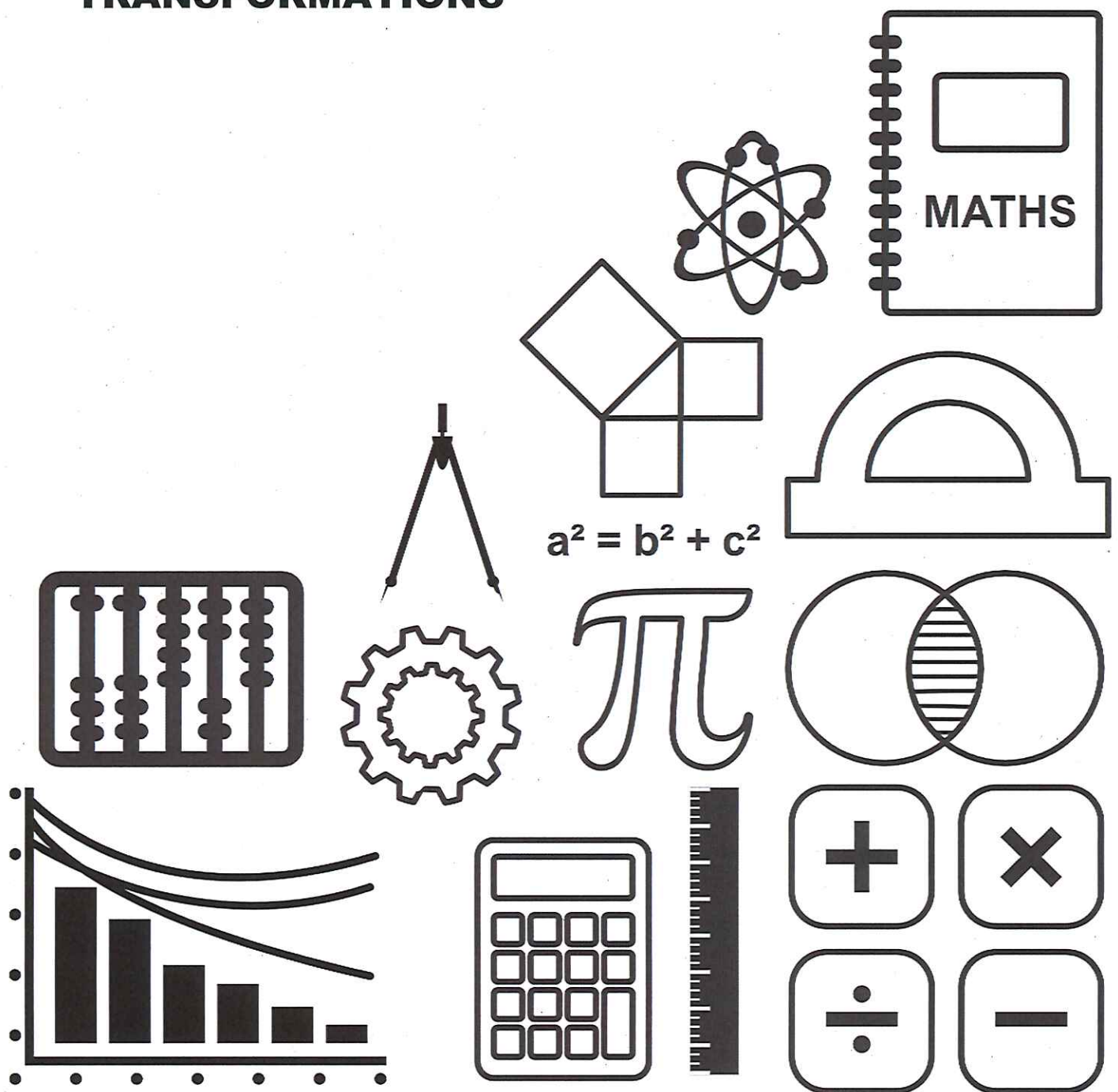
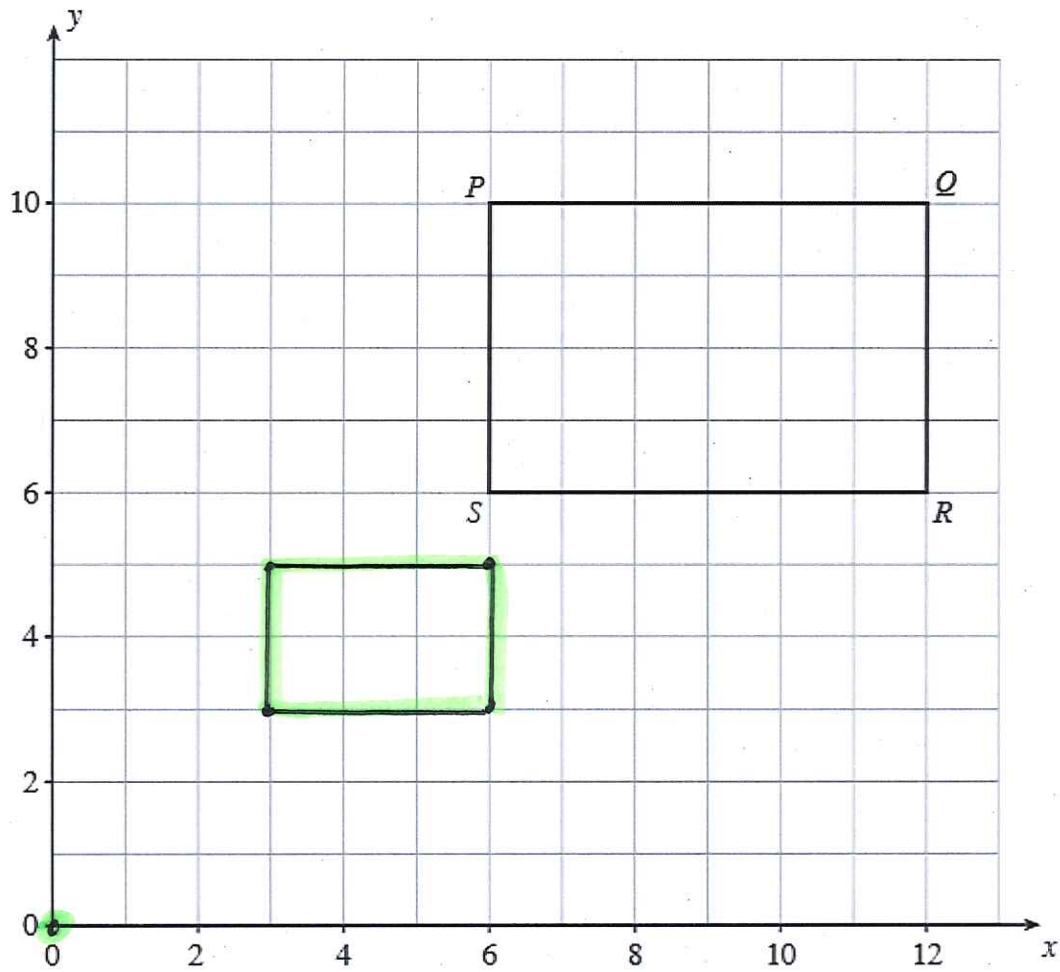


GCSE TOPIC BOOKLET TRANSFORMATIONS

SOLUTIONS

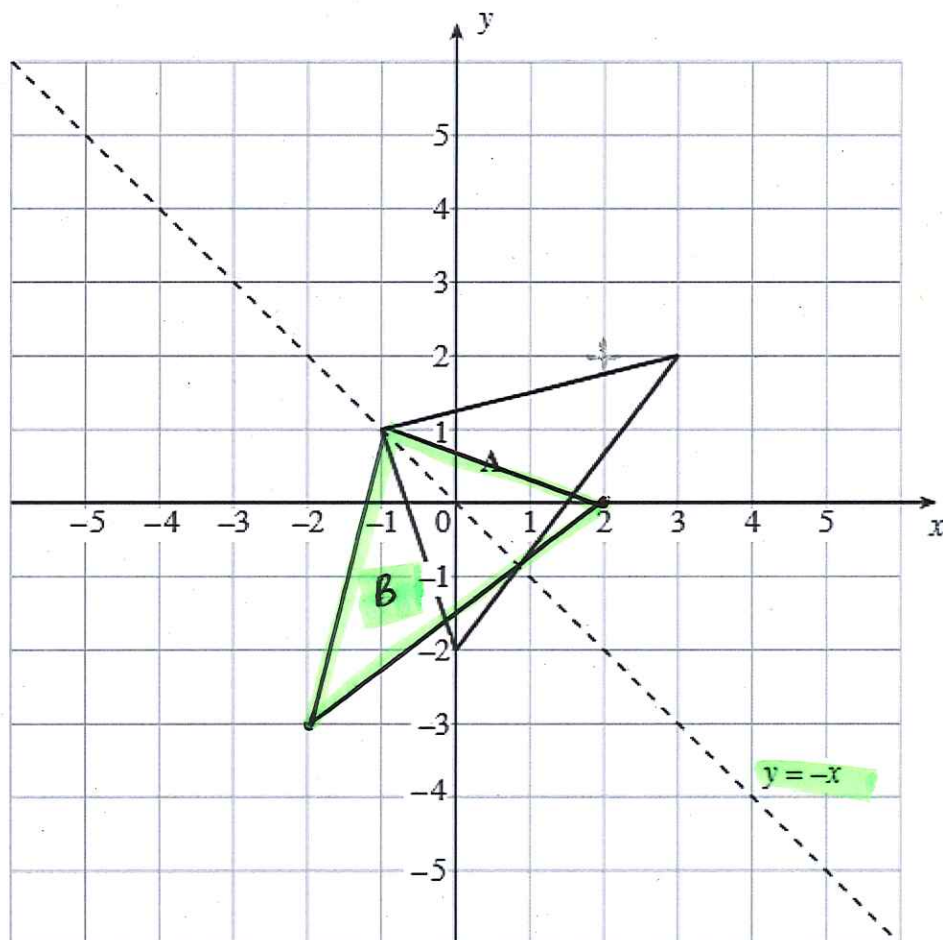


1. Enlarge the rectangle $PQRS$ by a scale factor $\frac{1}{2}$ using $(0, 0)$ as the centre of enlargement. [2]



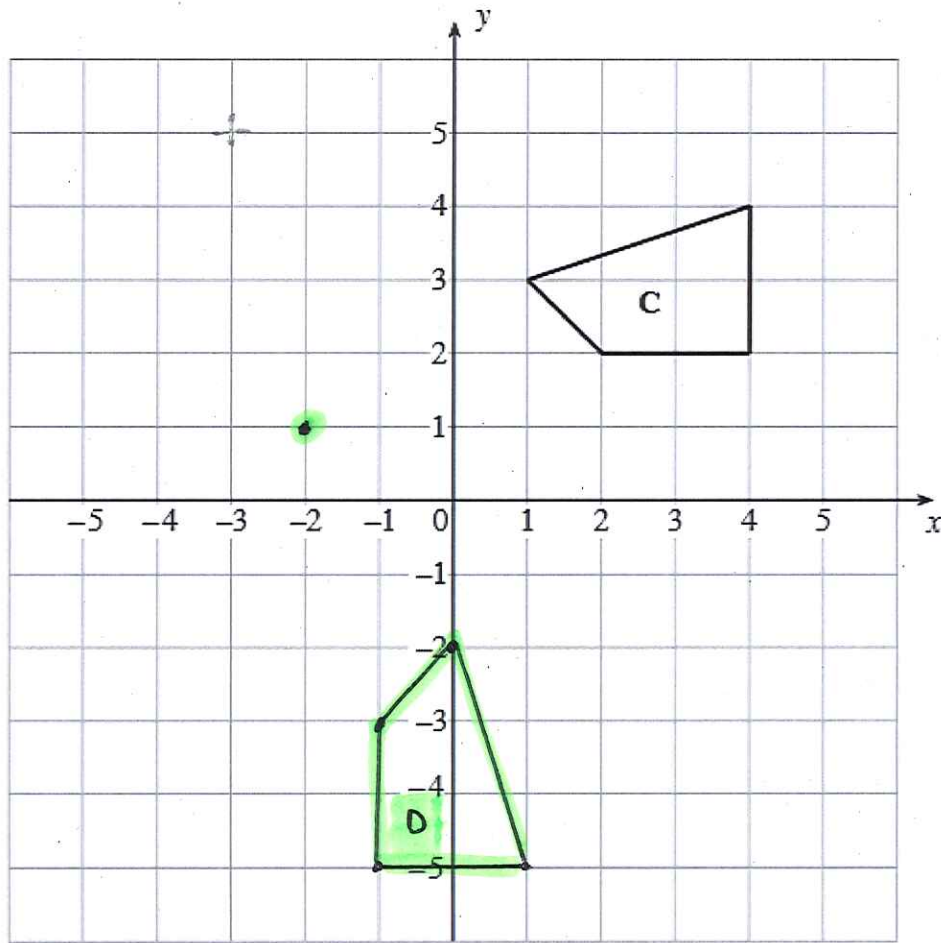
2.

- (a) Draw the image of the triangle A after reflection in the dotted line $y = -x$. Label the image B. [2]



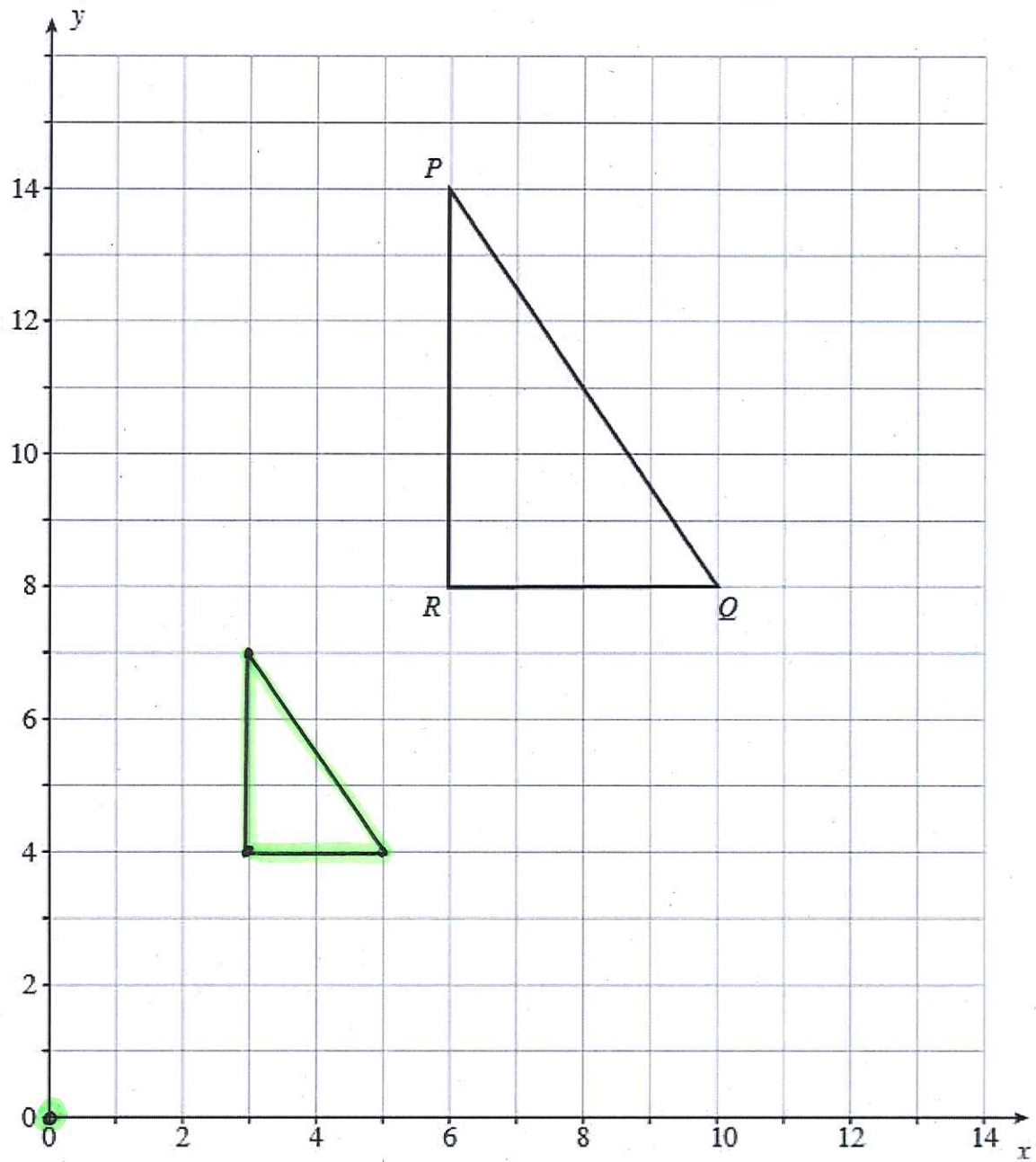
- (b) Rotate the shape C through 90° clockwise about the point $(-2, 1)$.
Label the image D.

[2]



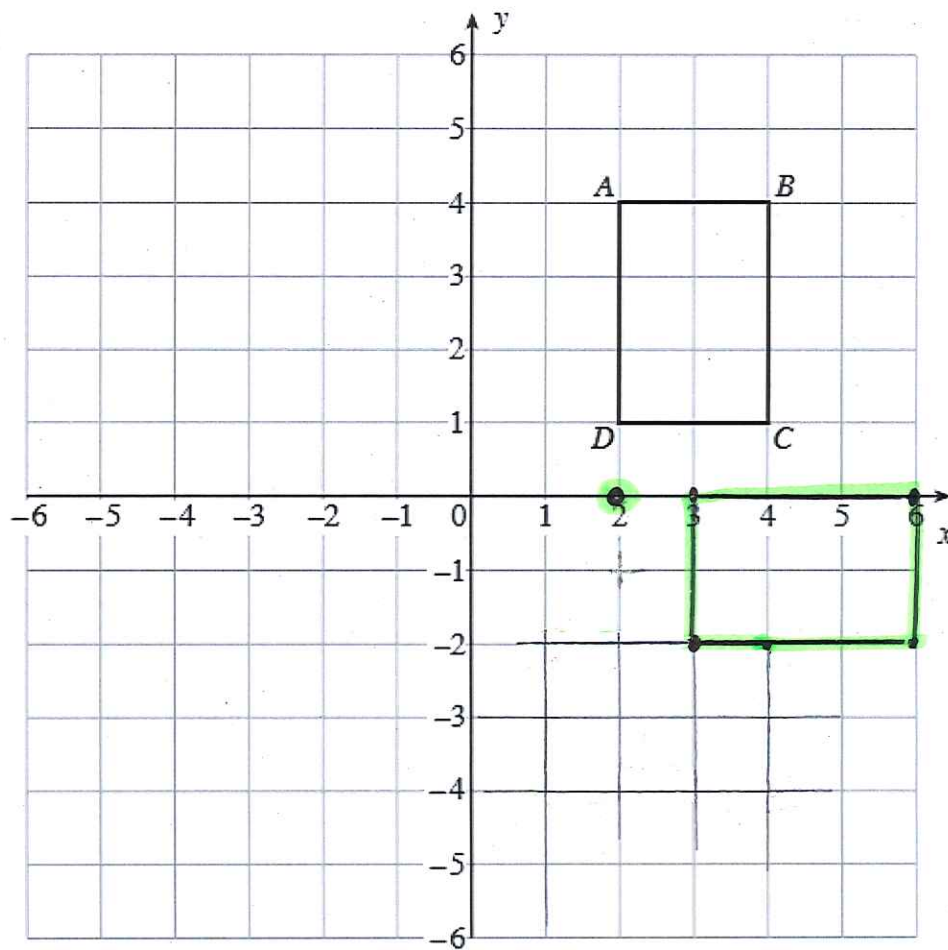
3. (a) Enlarge the triangle PQR using centre $(0, 0)$ by a scale factor of $\frac{1}{2}$.

[2]

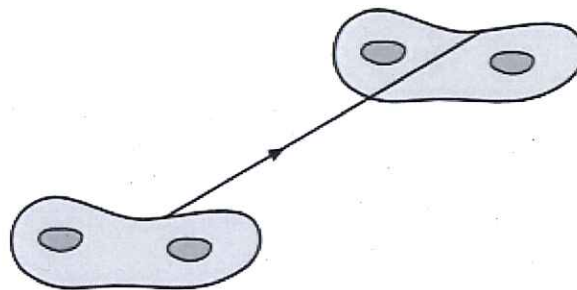


- (b) Rotate the rectangle $ABCD$ through 90° clockwise about the point $(2, 0)$.

[2]



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



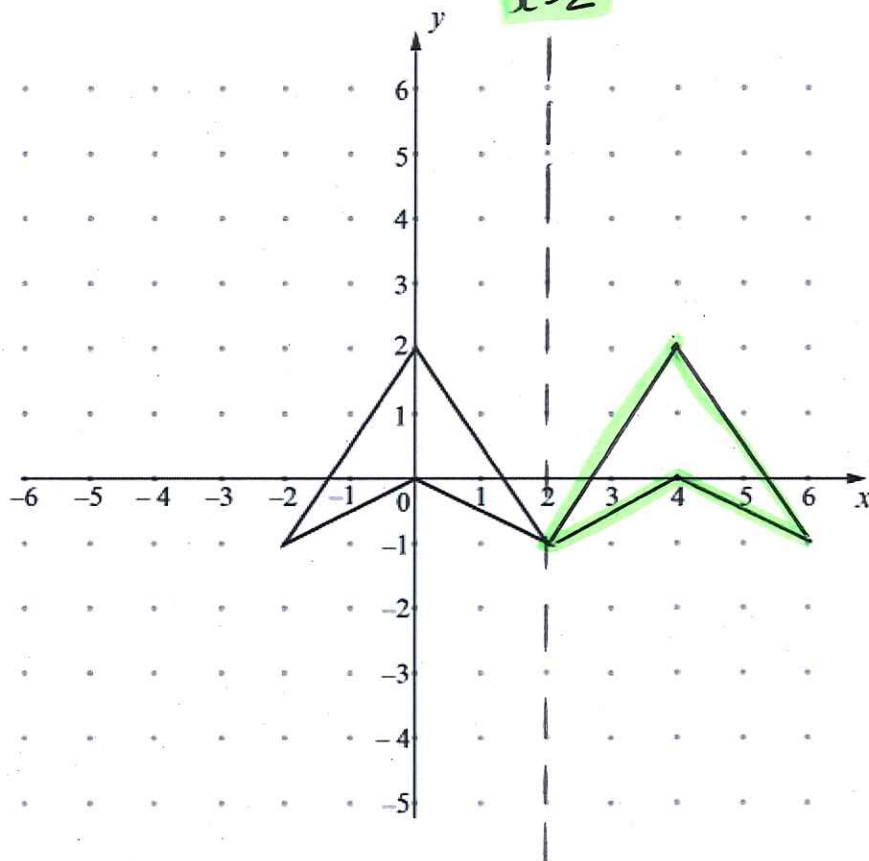
What is the name of this type of transformation?

Translation

[1]

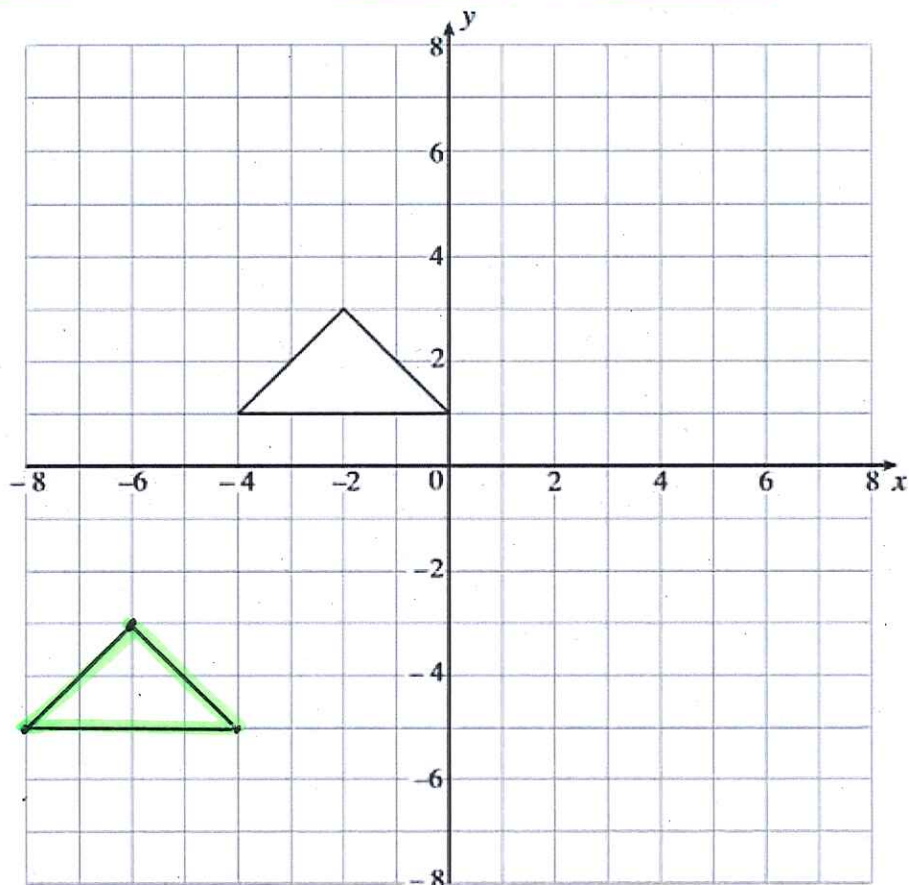
4. Reflect the shape in the line $x = 2$.

[2]

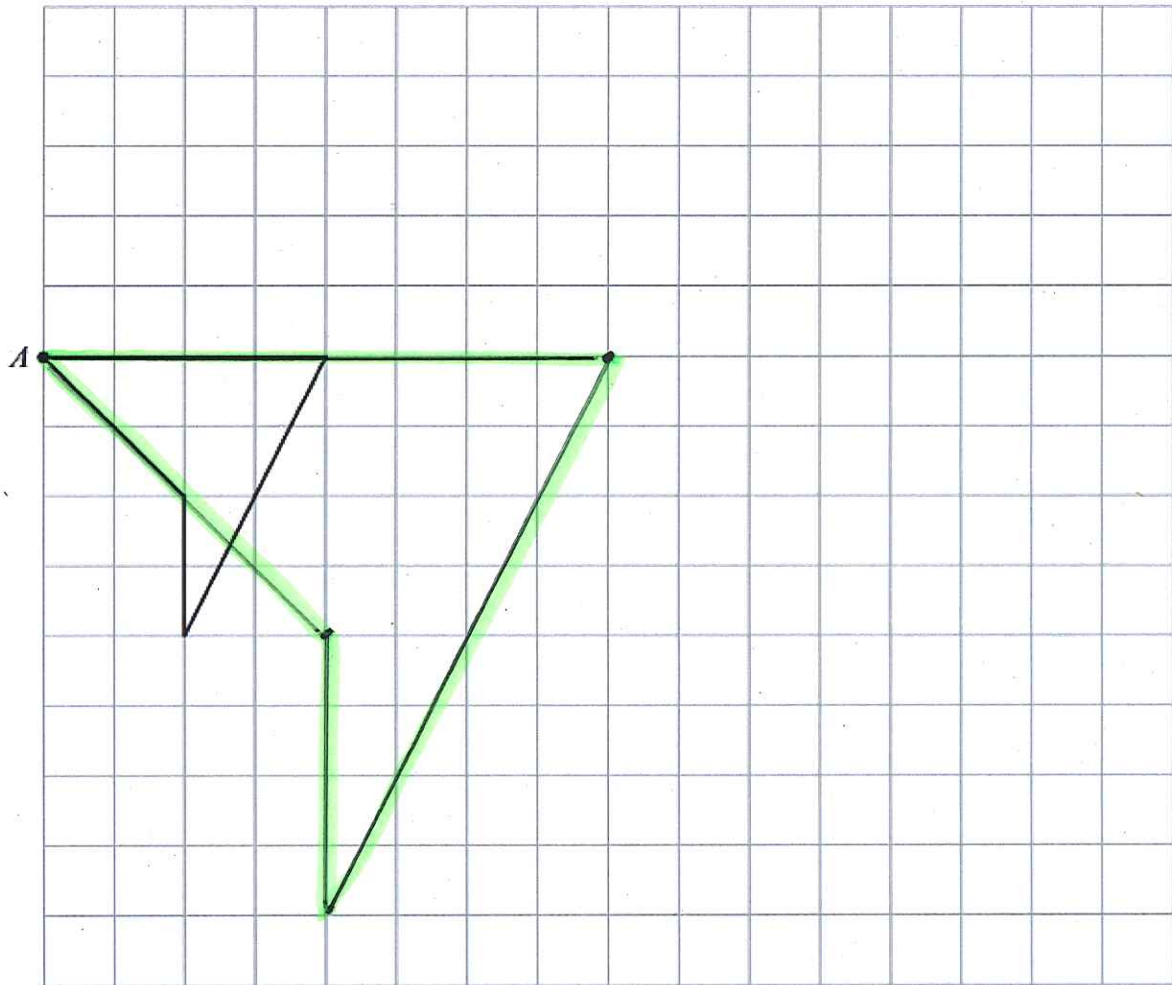


5. Translate the triangle shown 4 units to the left and 6 units down.

[2]

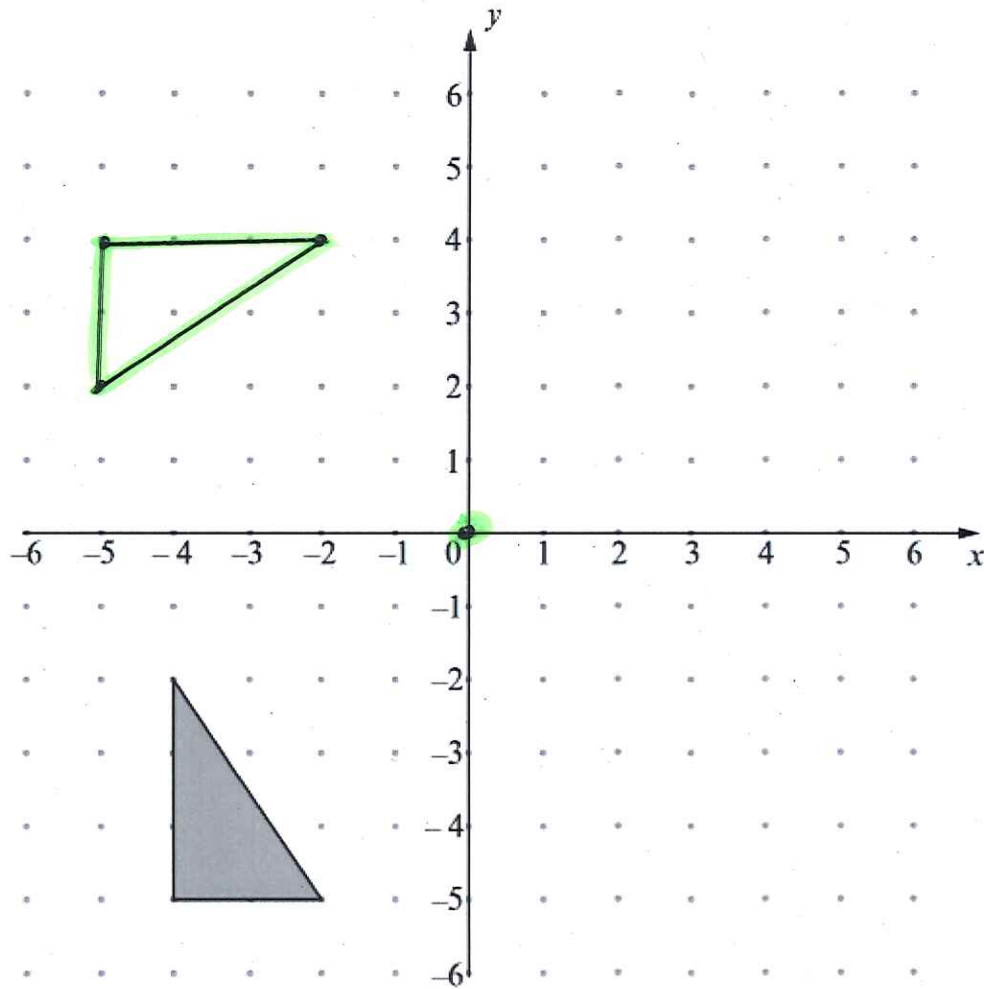


6. (a) Enlarge the shape shown on the grid by a scale factor of 2 using A as the centre of the enlargement.



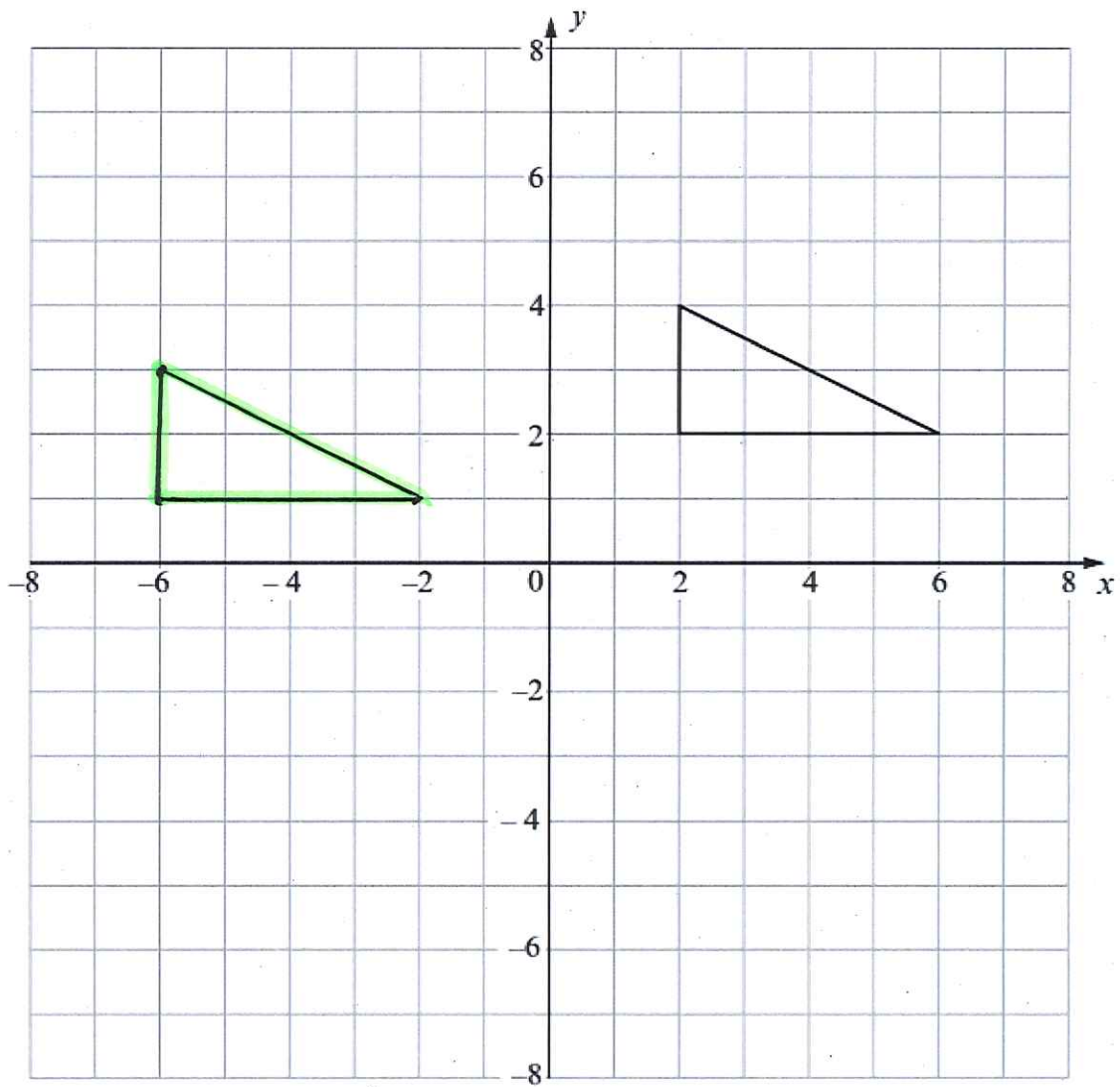
[3]

- (b) Rotate the triangle shown through 90° clockwise about the origin.



[2]

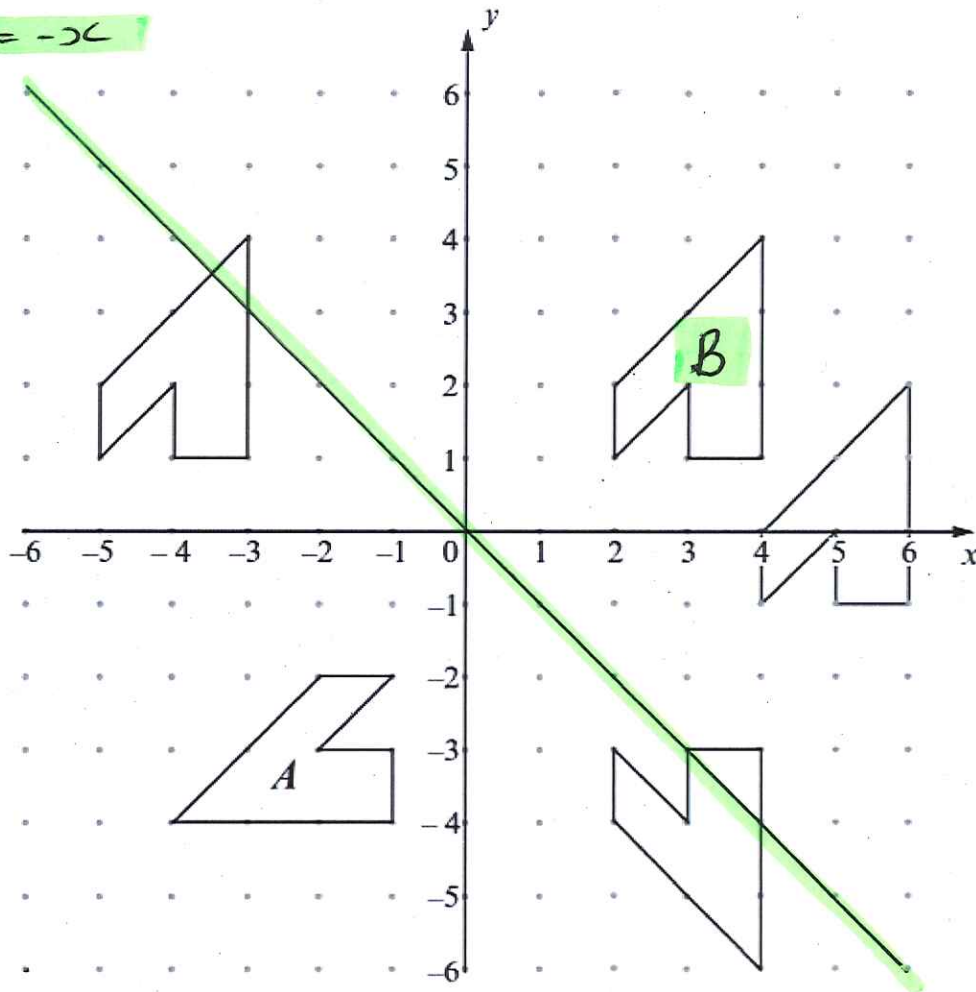
- (c) Translate the triangle shown by 8 units to the left and 1 unit down.



[1]

(d)

$$y = -x$$

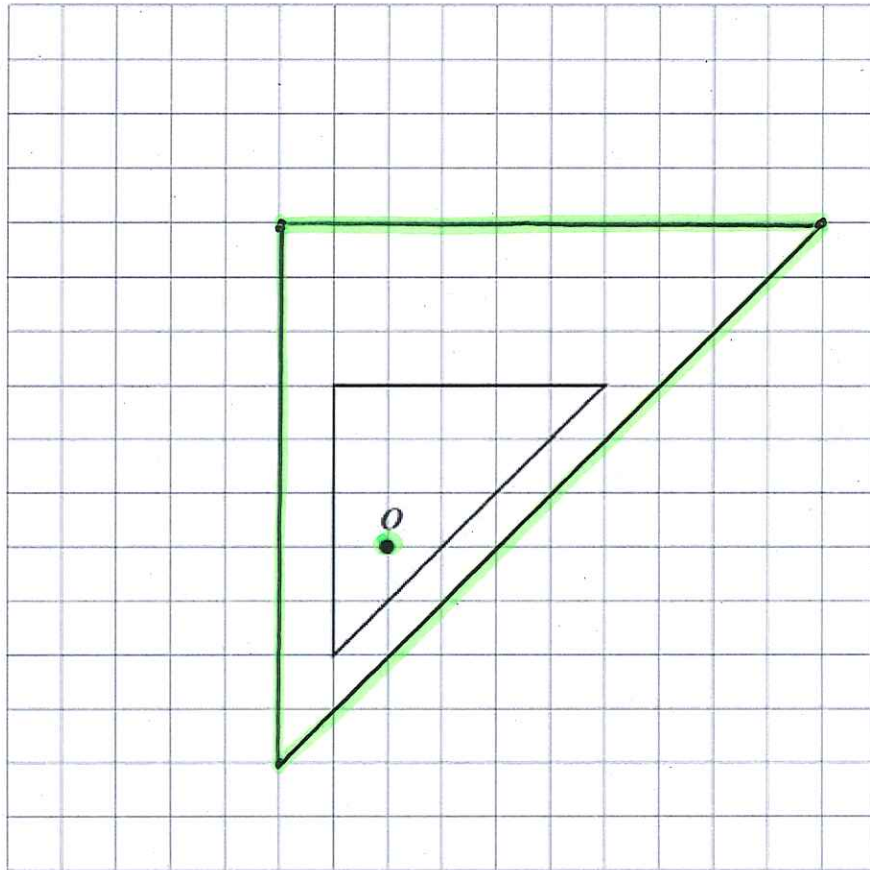


Indicate with the letter **B** on the diagram which one of the shapes shown may be obtained by reflecting shape **A** in the line $y = -x$.

[1]

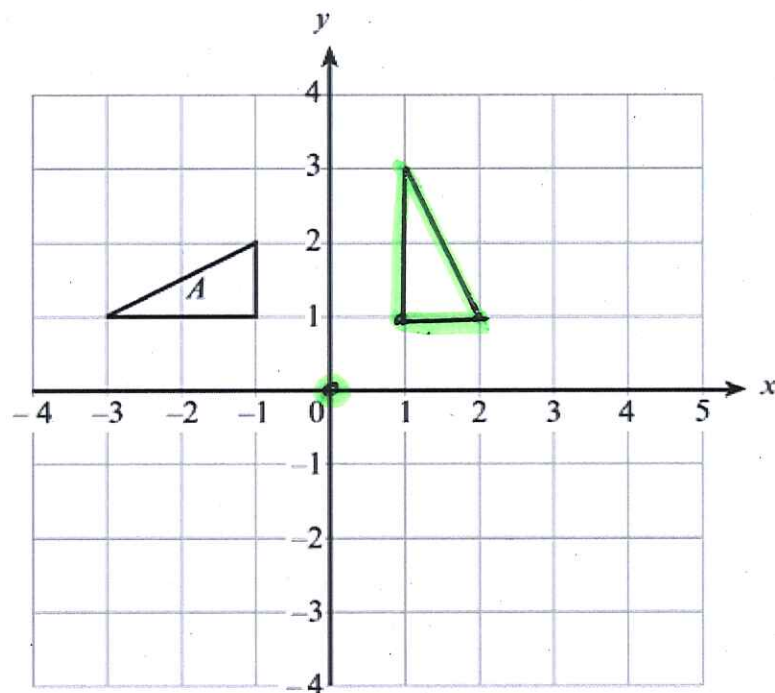
- 7.(a) On the grid below, draw an enlargement of the triangle using a scale factor of 2 and centre O .

[3]



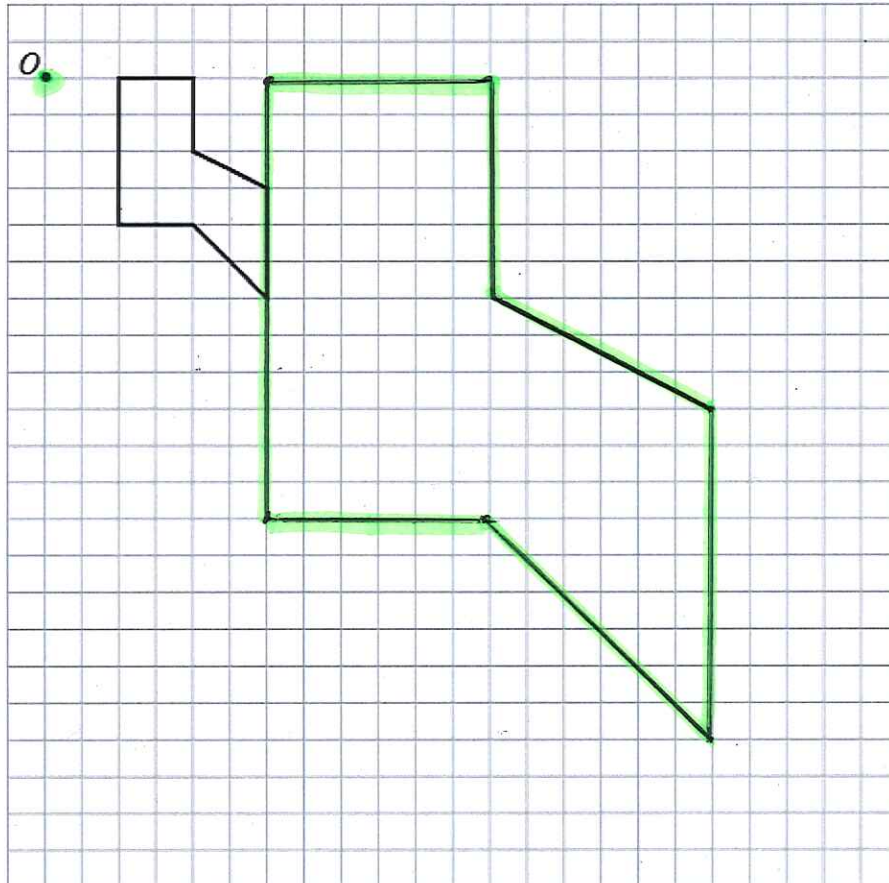
- (b) Rotate the triangle A through 90° clockwise about the origin.

[2]



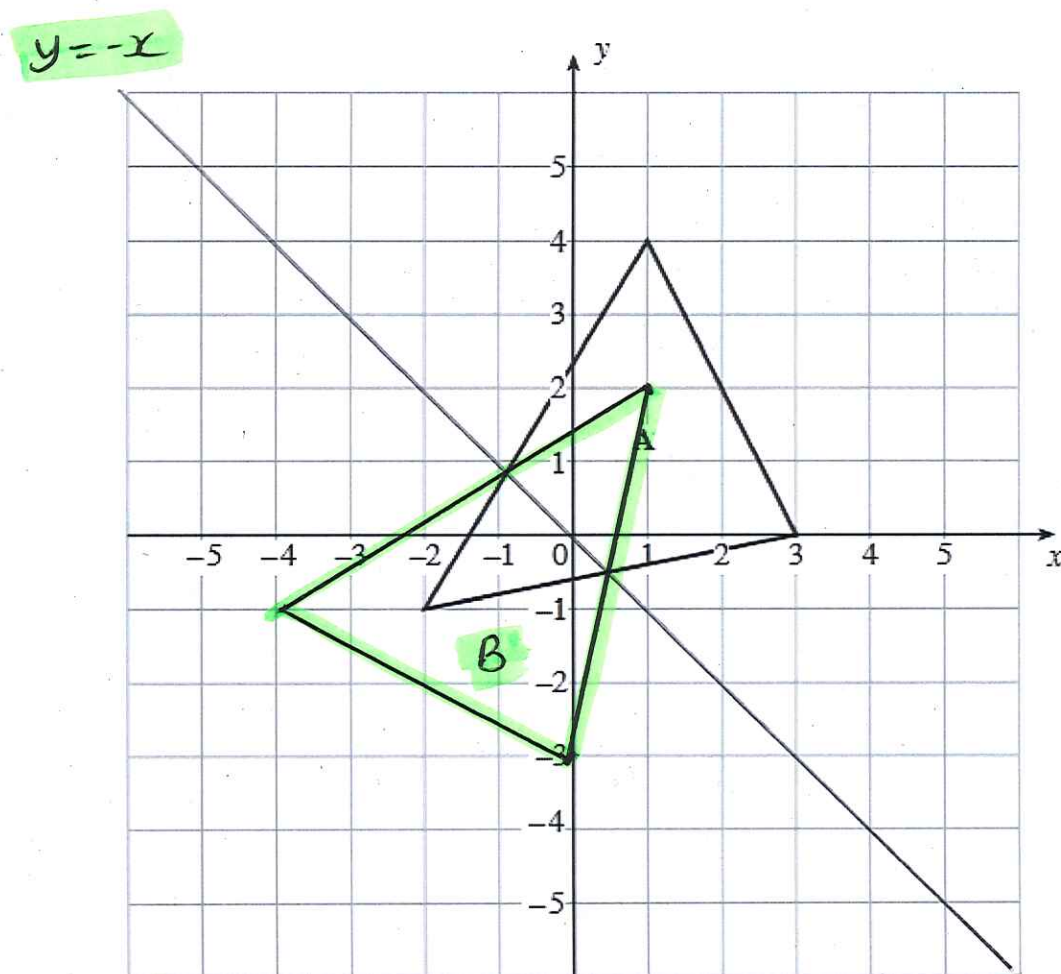
8. (a) On the grid below, draw the enlargement of the given shape using a scale factor of 3 and centre O .

[3]

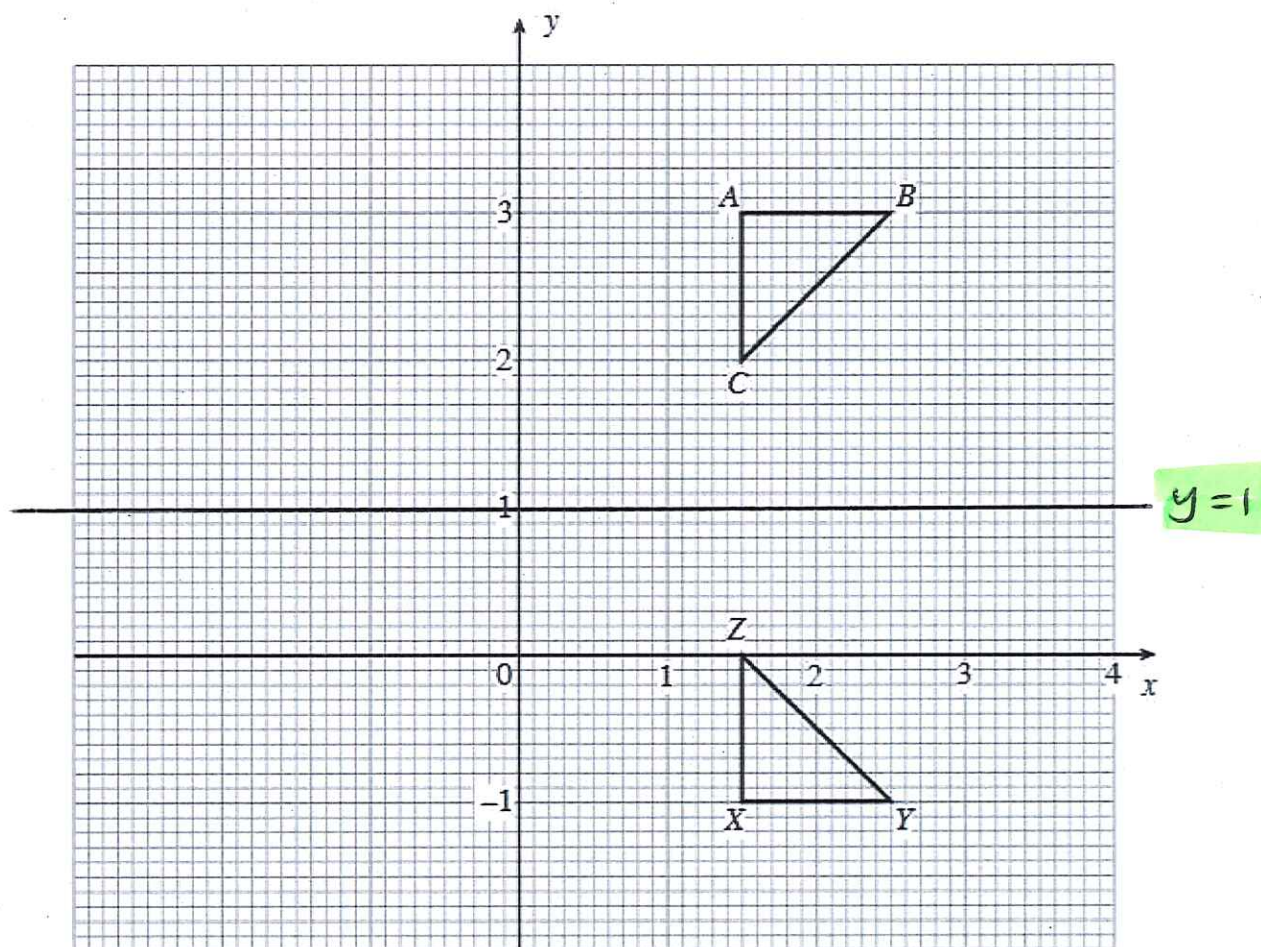


9. (a) Draw the image of the triangle A after a reflection in the line $y = -x$.
Label the image B.

[2]



(b) Describe fully the transformation that transforms triangle ABC into triangle XYZ .

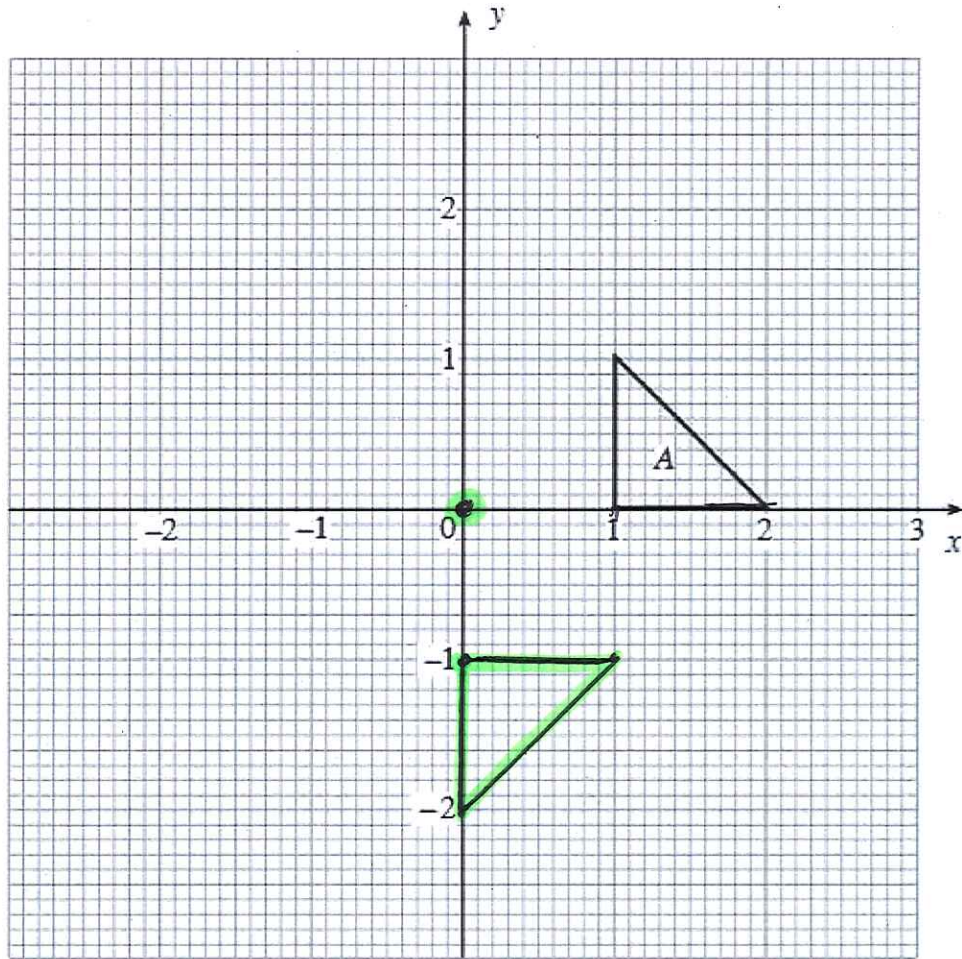


Reflection in the line $y = 1$

[2]

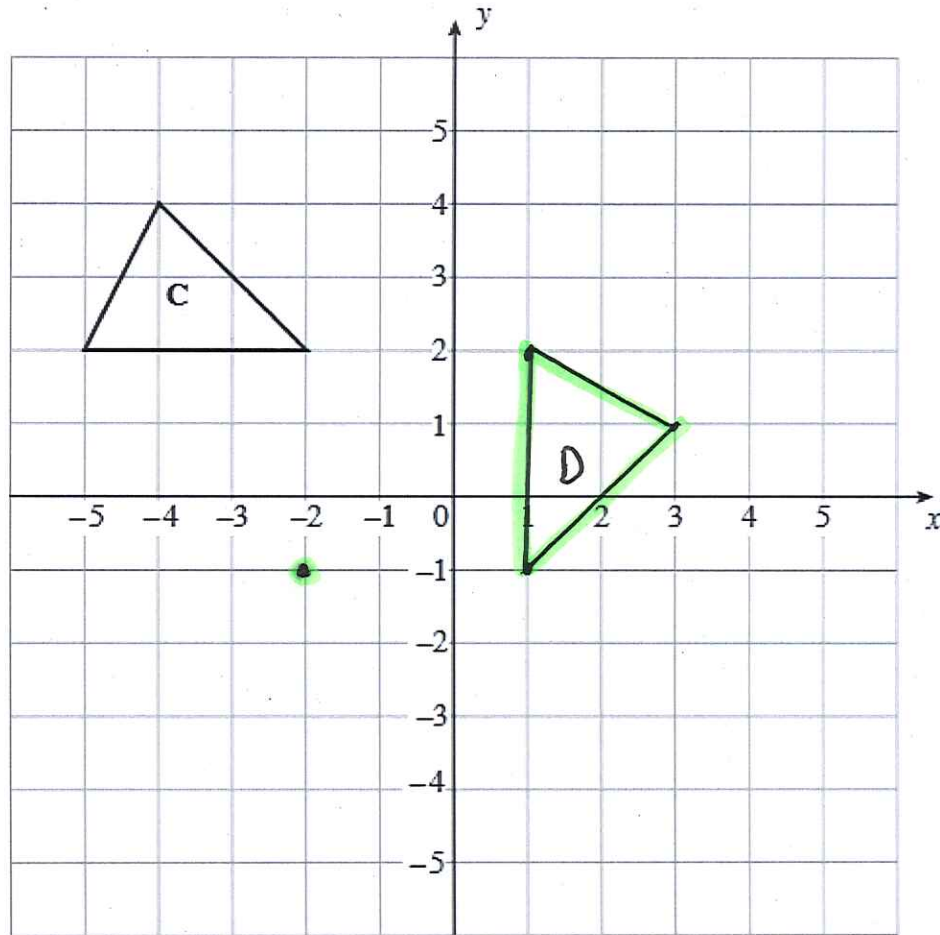
10. Rotate the triangle A through 90° clockwise about the origin.

[2]



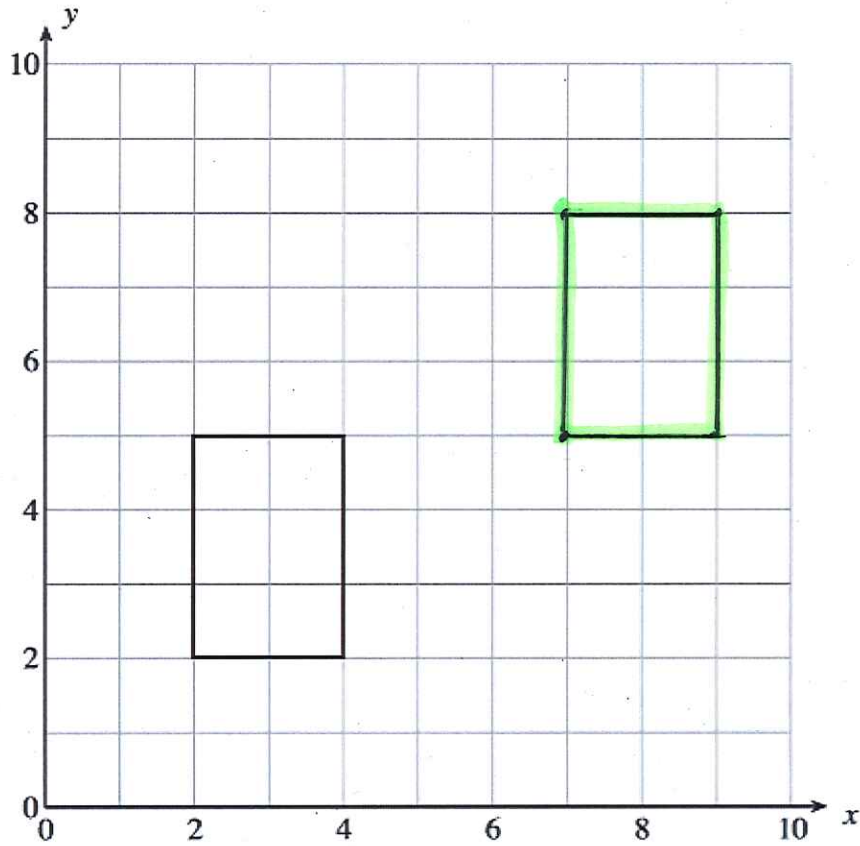
- (b) Rotate the triangle C through 90° clockwise about the point $(-2, -1)$.
Label the image D.

[2]



11. (a) Translate the rectangle shown 5 units to the right and 3 units up.

[1]



- (b) Draw the reflection of the triangle shown in the line $y = 5$.

[2]

