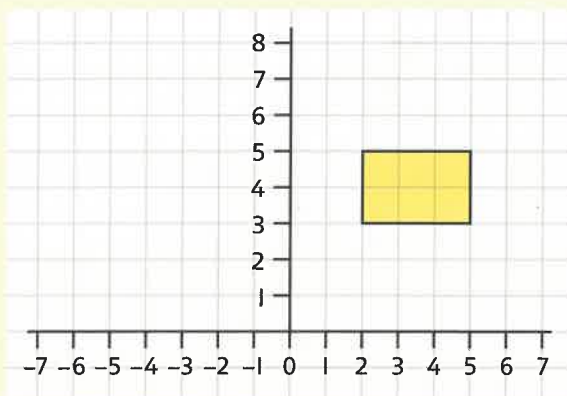
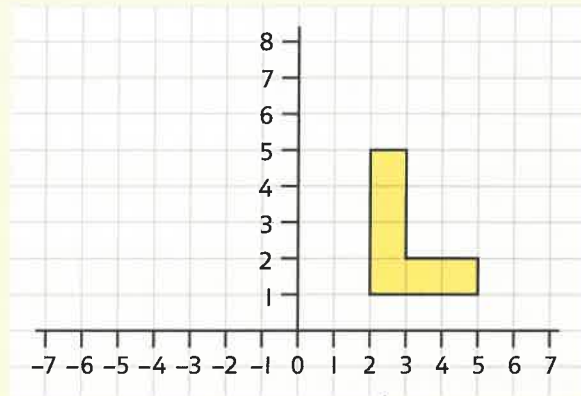


Copy these shapes onto squared paper. Reflect each shape in the  $y$ -axis. Write the new coordinates.

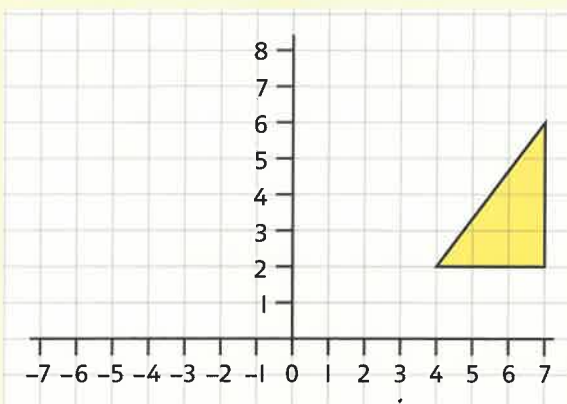
1



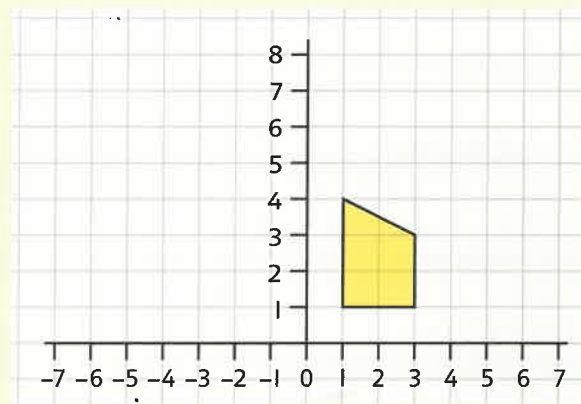
3



2



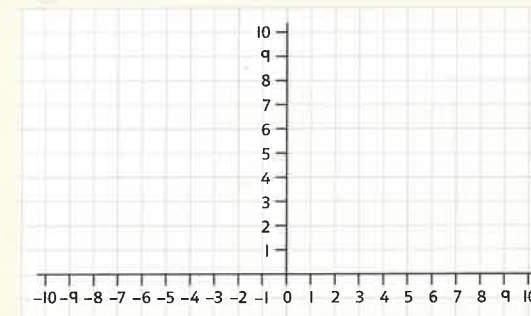
4



The coordinates of a square are  $(2,2)$ ,  $(2,1)$ ,  $(3,1)$  and  $(3,2)$ . Write the coordinates of the new square when it has been reflected in the  $y$ -axis.

Follow the instructions to help you draw and reflect a polygon.

- 1 Draw a two-quadrant graph like this one.
- 2 Mark the positive and negative numbers along the  $x$ -axis.
- 3 Mark the  $y$ -axis with positive numbers going up.
- 4 Draw a polygon to the right of the  $y$ -axis, in the positive quadrant.
- 5 Write the coordinates of your polygon in a list.
- 6 Write a new list of coordinates where the  $x$ -coordinate is the negative value of the  $x$ -coordinate in your first list.
- 7 Plot these coordinates and draw the shape to the left of the  $y$ -axis, in the negative quadrant.
- 8 Use a mirror to check that your new shape is a reflection of your first shape.



Now try this challenge activity.

- 9 Draw a new graph with just one quadrant. Plot these points:  $(1, 1)$ ,  $(4, 1)$ ,  $(4, 5)$  and join them to create a right-angled triangle.
- 10 Draw a vertical line parallel with the  $y$ -axis which runs through the point  $(5, 0)$ .
- 11 Reflect the shape in this line. Write the coordinates of the new shape.



Is there a relationship between the coordinates of the two shapes in the challenge activity?



I am confident with reflecting shapes.



I am confident with drawing and reflecting polygons.