

Curriculum Outcomes

(SS3) Demonstrate an understanding of similarity of polygons.

(SS4) Draw and interpret scale diagrams of 2-D shapes.

(SS5) Demonstrate an understanding of line and rotation symmetry.

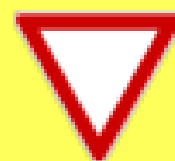
Student Friendly: Reflecting a shape across a line

Quiz Day





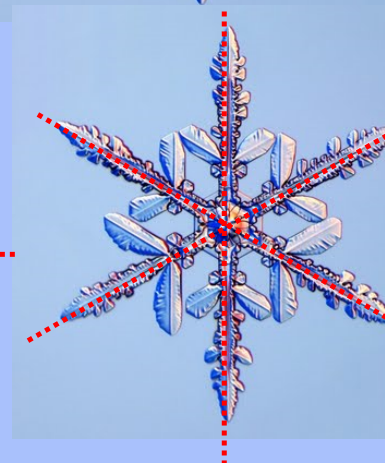
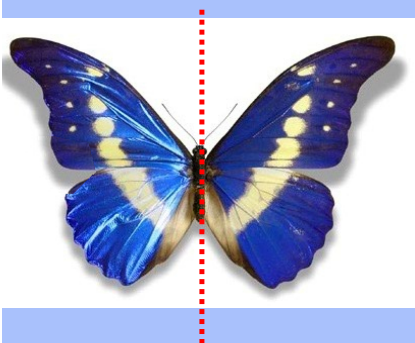
SECTION 7.5



REFLECTIONS AND LINE SYMMETRY



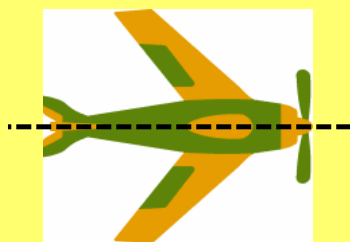
A figure has symmetry when it can be folded so two halves match, or are identical.



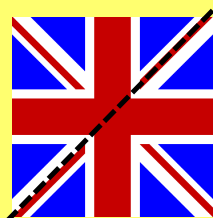
Shapes may show symmetry when folded:



vertically

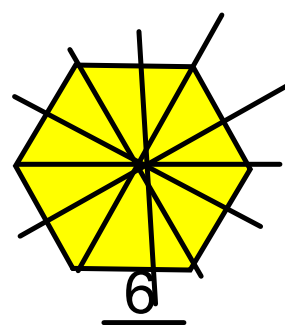
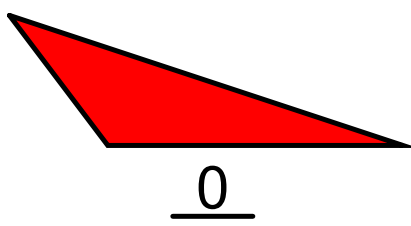
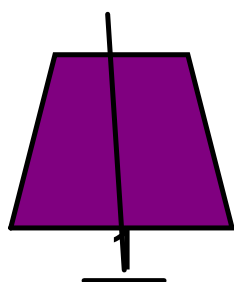
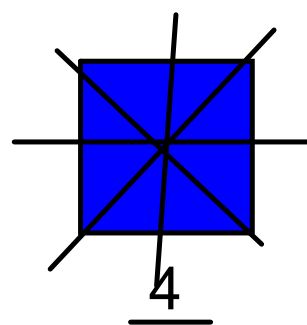
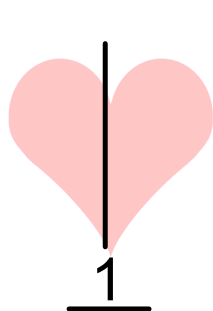


horizontally



diagonally

How many lines of symmetry are in the following figures?



Symmetry

Color the shapes that are symmetric.



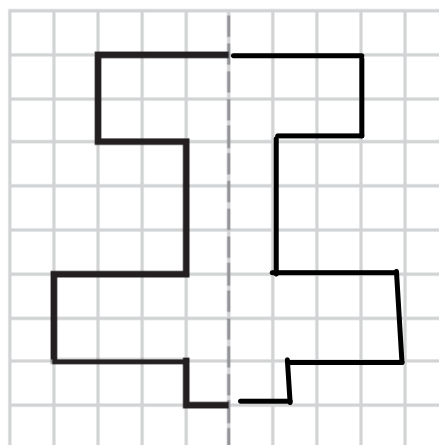
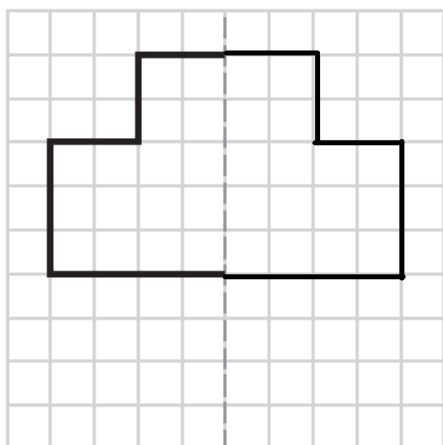
A collection of various shapes with handwritten purple lines and numbers indicating their lines of symmetry:

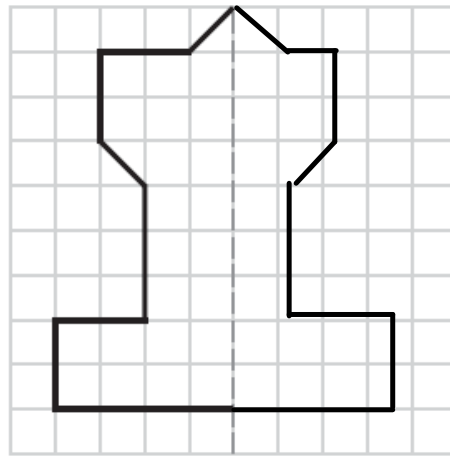
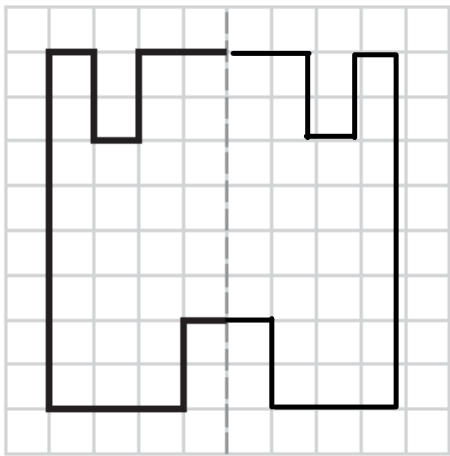
- A pentagon with 5 lines of symmetry.
- A five-pointed star with 5 lines of symmetry.
- A square with 4 lines of symmetry.
- A circle with 2 lines of symmetry.
- An octagon with 8 lines of symmetry.
- A triangle with 3 lines of symmetry.
- A crown-like shape with 0 lines of symmetry.
- A trapezoid with 0 lines of symmetry.
- A triangle with 1 line of symmetry.
- A crescent moon with 1 line of symmetry.
- A rectangle with 2 lines of symmetry.
- A scalene triangle with 0 lines of symmetry.
- A concave pentagon with 0 lines of symmetry.
- A shape resembling a leaf with 1 line of symmetry.
- A five-pointed star with 5 lines of symmetry.
- A trapezoid with 0 lines of symmetry.
- A triangle with 1 line of symmetry.

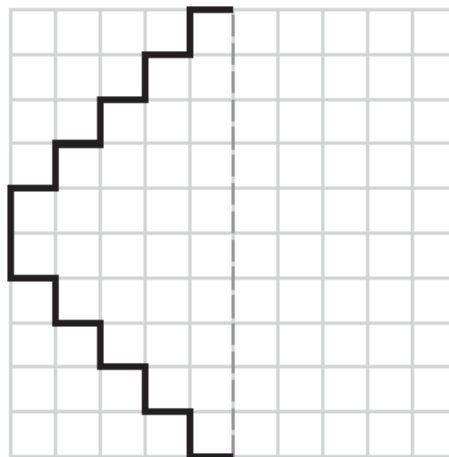
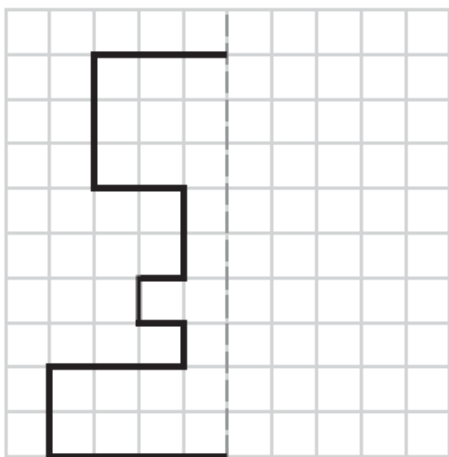
Creating Symmetry

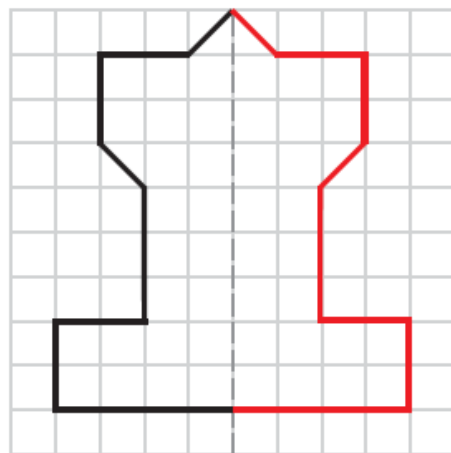
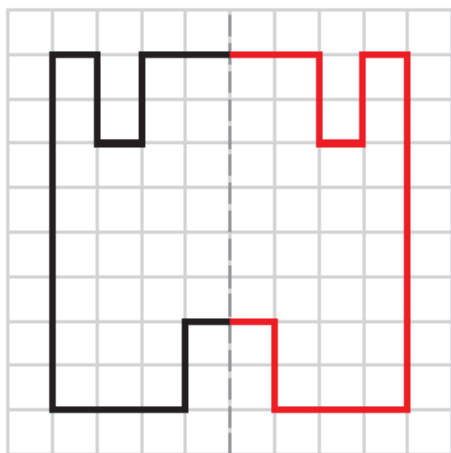
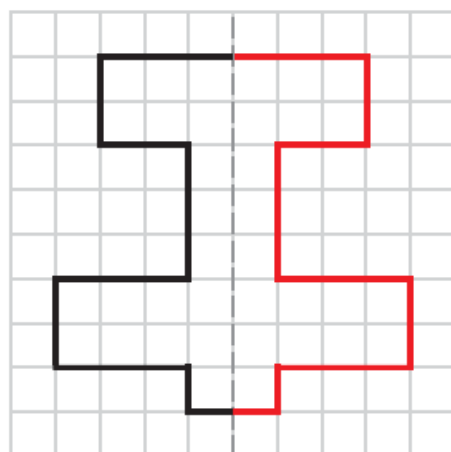
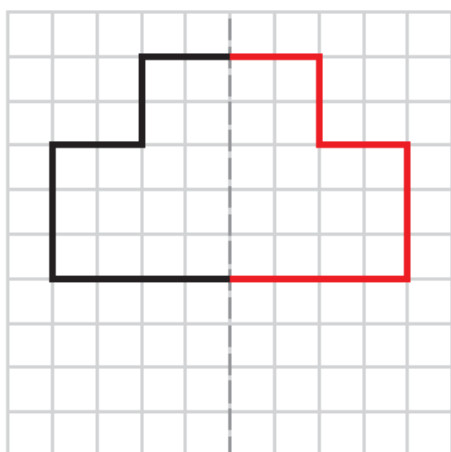
Name: _____ Class: _____

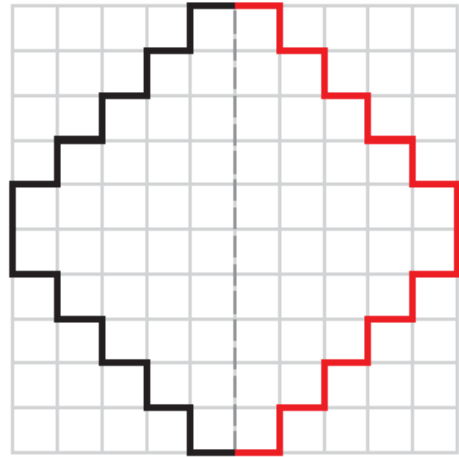
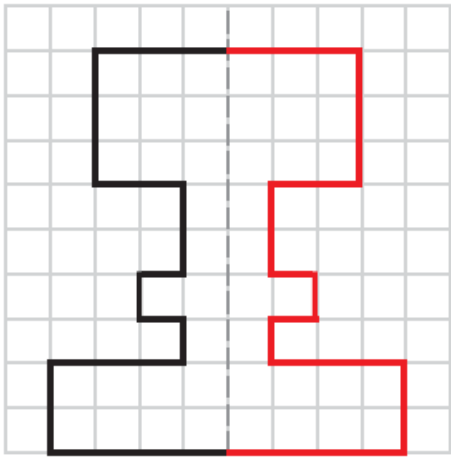
Each figure is half of a symmetric shape. Complete each figure by using the dotted line as the line of symmetry.



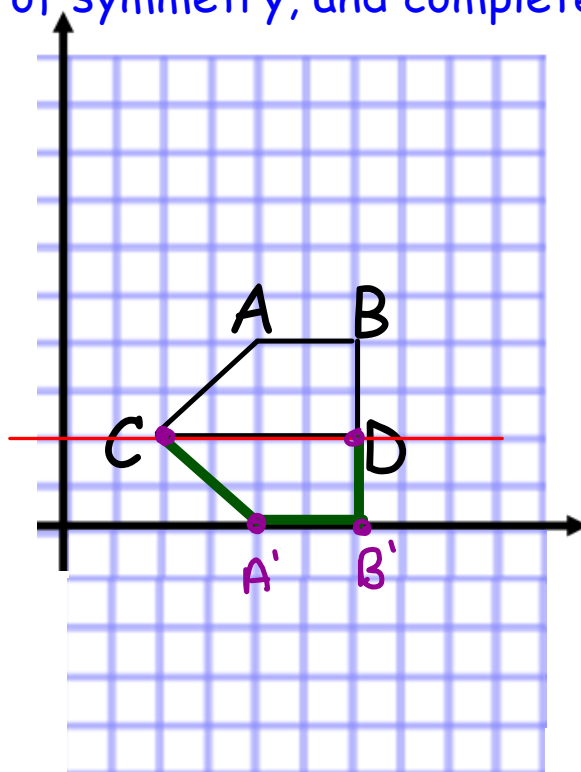








Copy the shape on graph paper. Use the red line as a line of symmetry, and complete the other half.



Coordinates:

A (4, 4)

B (6, 4)

C (2, 2)

D (6, 2)

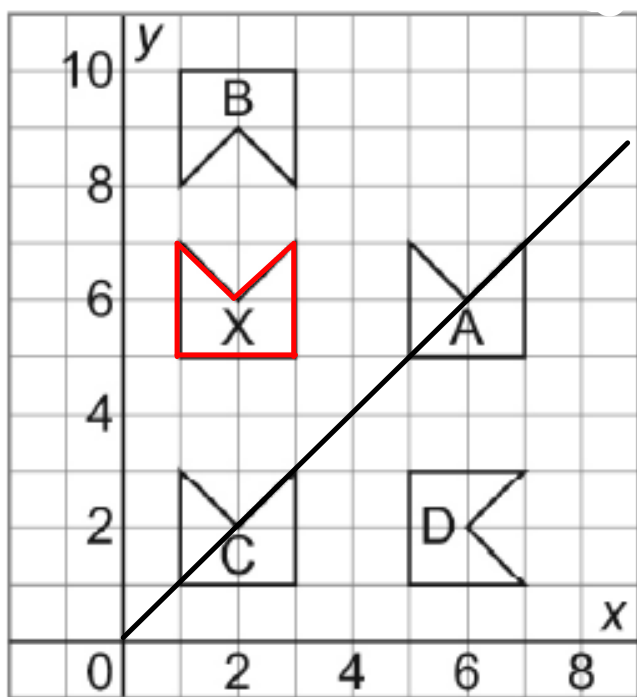
A' (4, 0)

B' (6, 0)

C' (2, 2)

D' (6, 2)

Identify the shapes that are related to the shape X by a line of reflection. Describe the symmetry in each case.



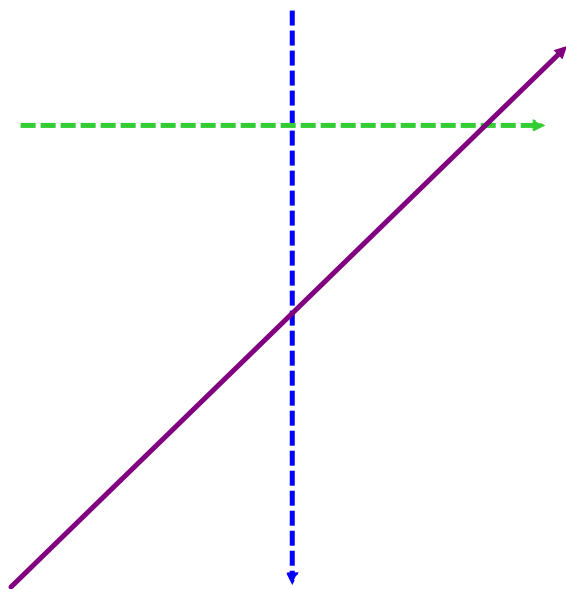
A: reflected in vertical line passing through 4 on the x-axis

B: reflected in horizontal line passing through 7.5 on the y-axis

C: not related to X by line symmetry

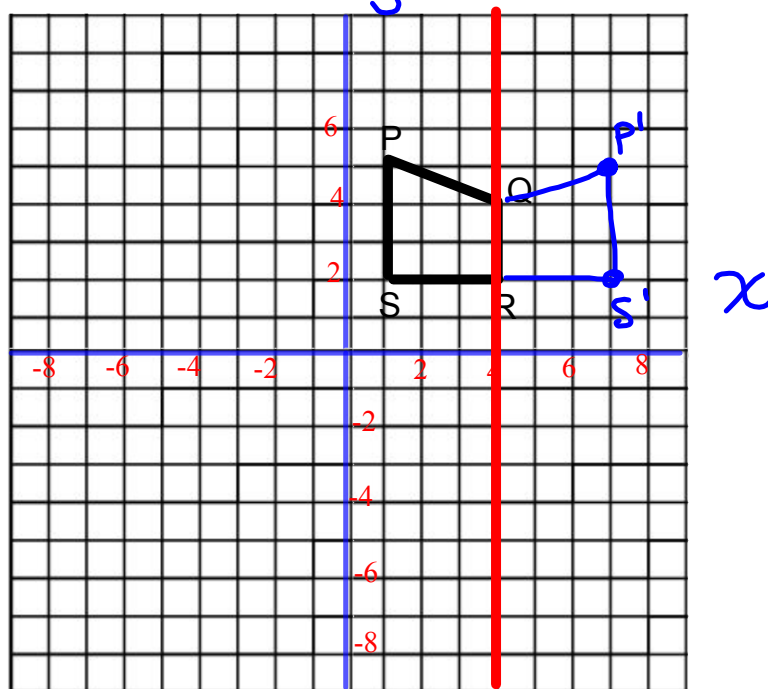
D: reflected in oblique line passing through (0, 0) and (8, 8)

Oblique just means a slanted line



Quadrilateral PQRS is part of a larger shape.

- a) Draw a reflection in the vertical line through 4 on the x-axis.



- b) Write the coordinates of the original shape

$$P(1, 5)$$

$$Q(4, 4)$$

$$R(4, 2)$$

$$S(1, 2)$$

Go to next page to see answers

- c) Write the coordinates of the reflected shape

$$P'(7, 5)$$

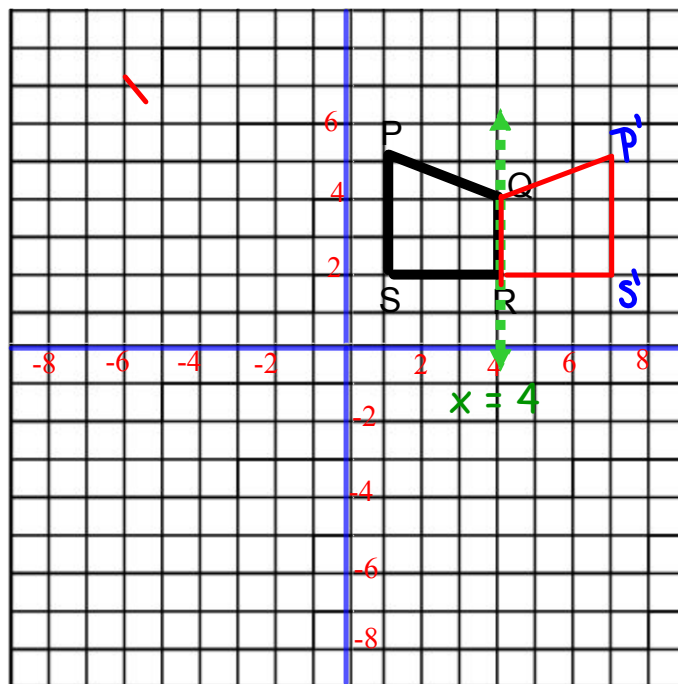
$$Q'(4, 4)$$

$$R'(4, 2)$$

$$S'(7, 2)$$

Quadrilateral PQRS is part of a larger shape.

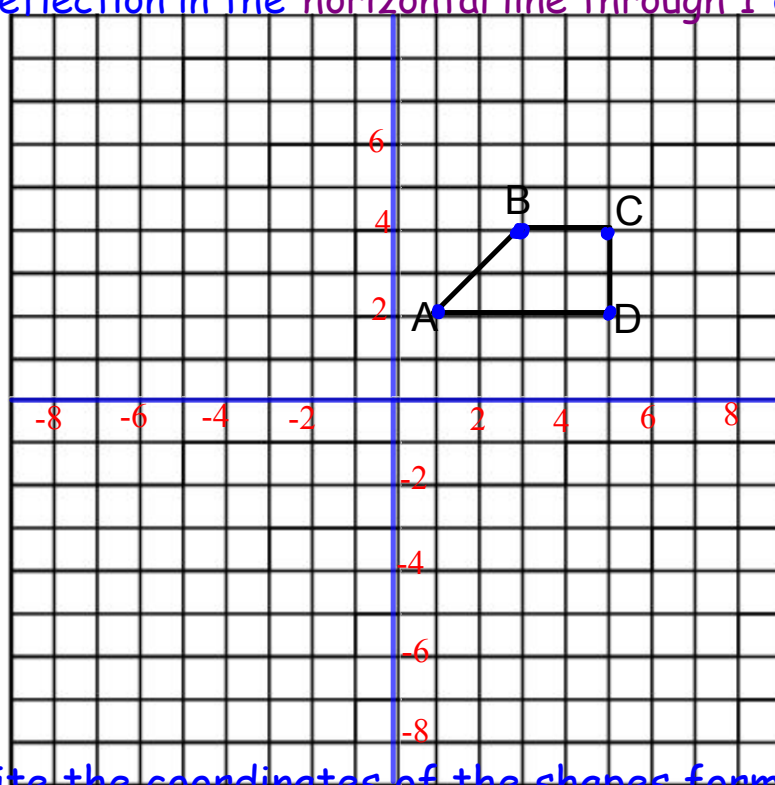
- a) Draw a reflection in the vertical line through 4 on the x-axis.



- b) Write the coordinates of the original shape
 $P(1, 5)$ $Q(4, 4)$ $S(1, 1)$

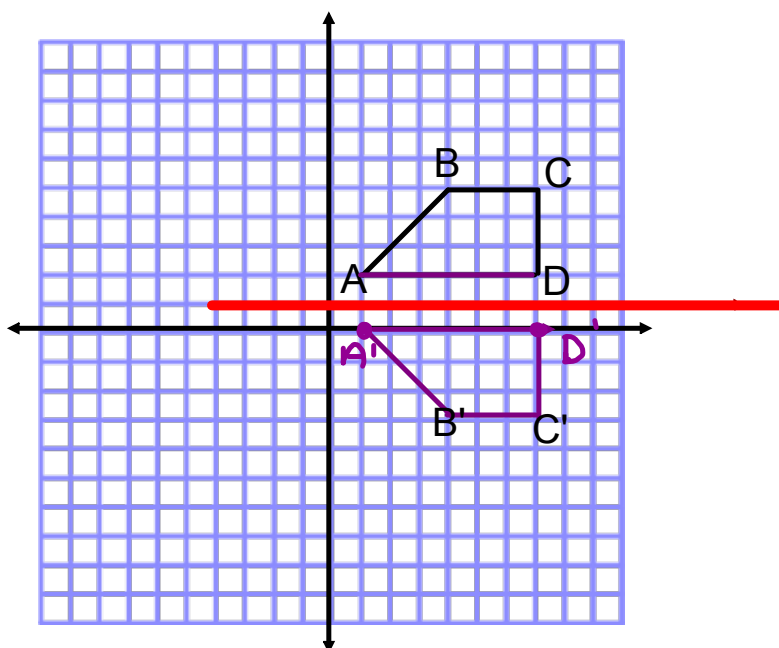
- c) Write the coordinates of the reflected shape
 $P'(7, 5)$ $S'(7, 1)$

Draw a reflection in the horizontal line through 1 on the y-axis.



- b) Write the coordinates of the shapes formed.
c) Describe the new shape and its symmetry.

Draw a reflection in the horizontal line through 1 on the y-axis.



b) Write the coordinates of the shape formed.

$A(1, 2)$ $B(4, 5)$ $C(7, 5)$ $D(7, 2)$

$A'(1, 0)$ $B'(4, -3)$ $C'(7, -3)$ $D'(7, 0)$

~~c) Describe the new shape and its symmetry.~~