

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



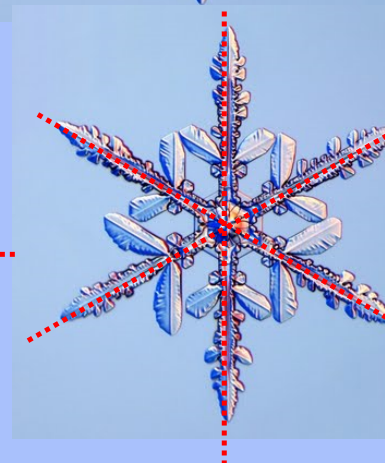
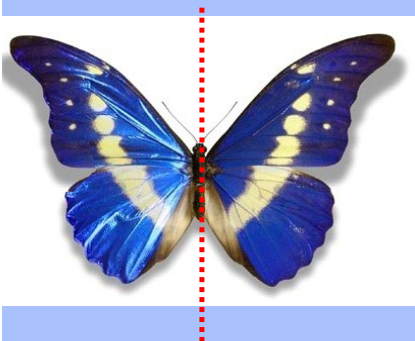
SECTION 7.5



REFLECTIONS AND LINE SYMMETRY



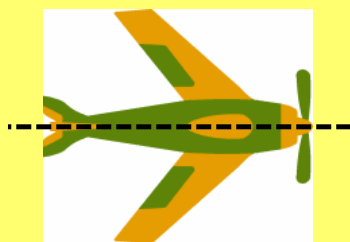
A figure has symmetry when it can be folded so two halves match, or are identical.



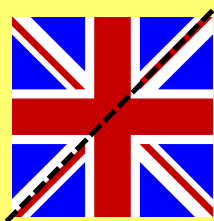
Shapes may show symmetry when folded:



vertically

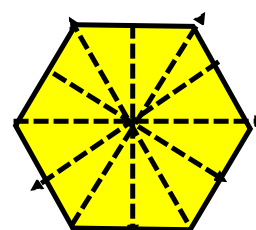
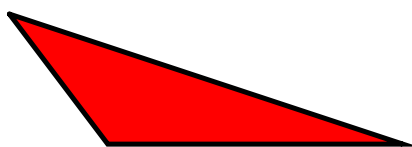
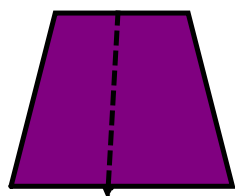
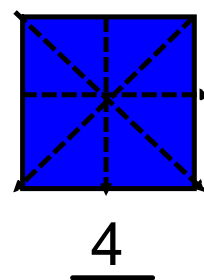
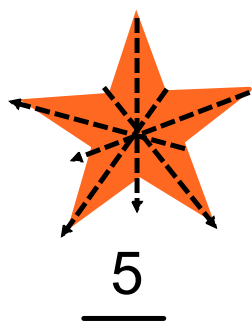
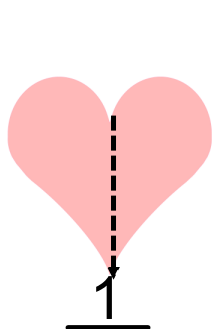


horizontally



diagonally

How many lines of symmetry are in the following figures?



Symmetry

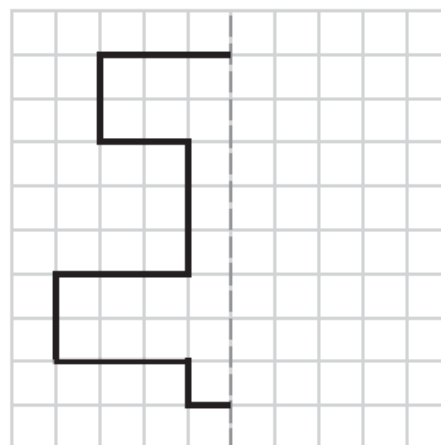
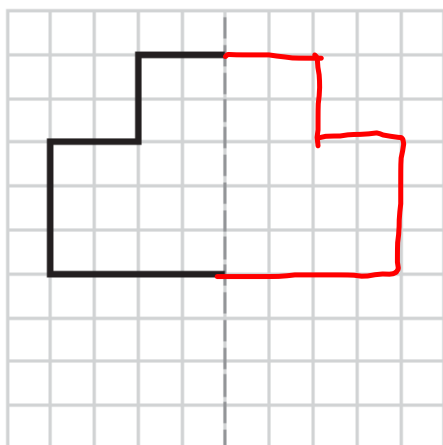
Color the shapes that are symmetric.

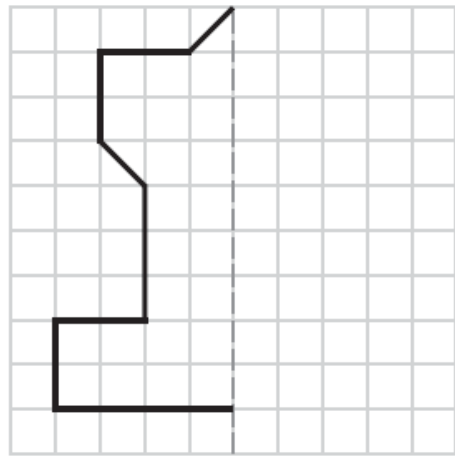
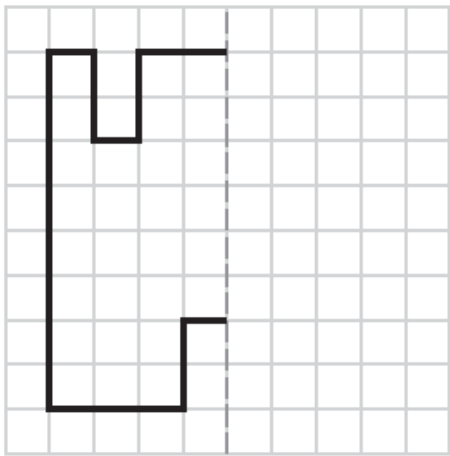


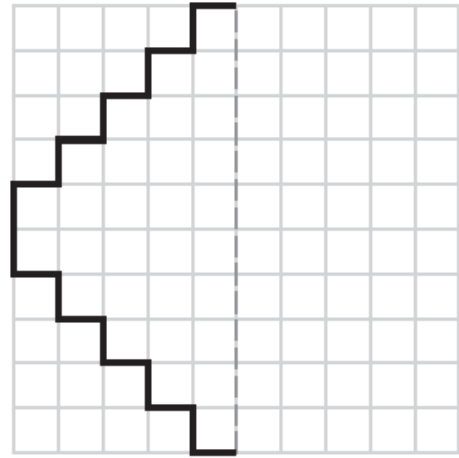
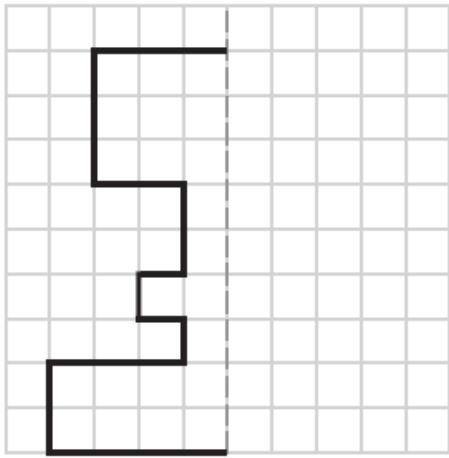
Creating Symmetry

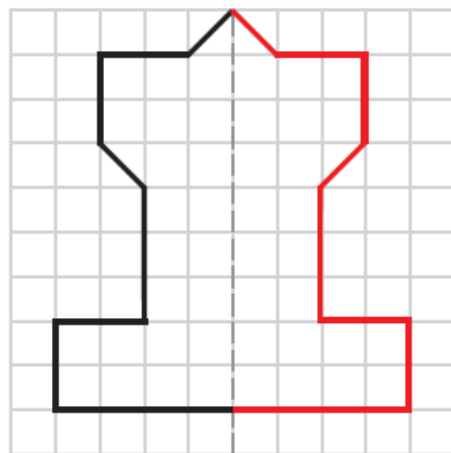
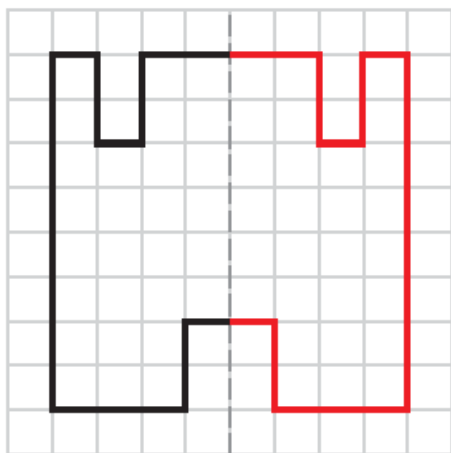
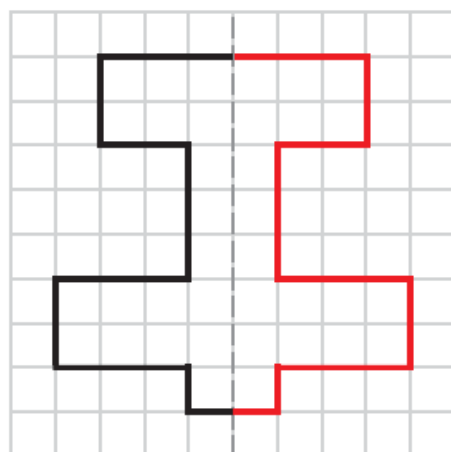
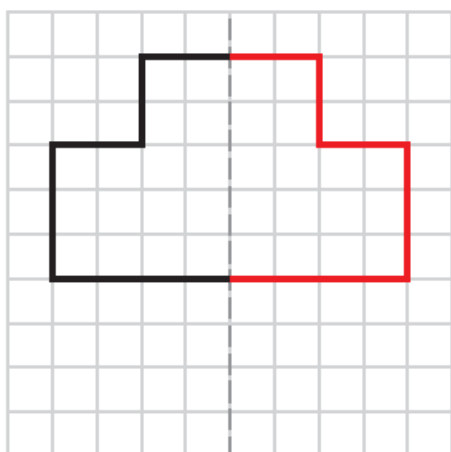
Name: _____ Class: _____

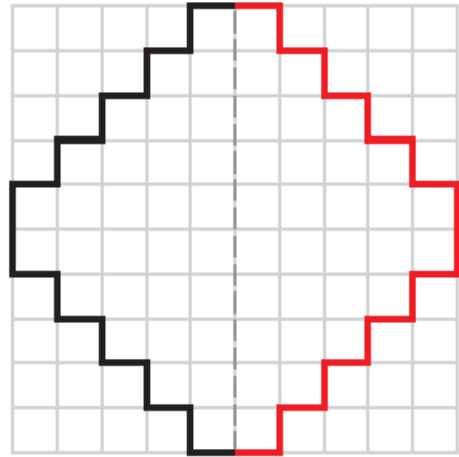
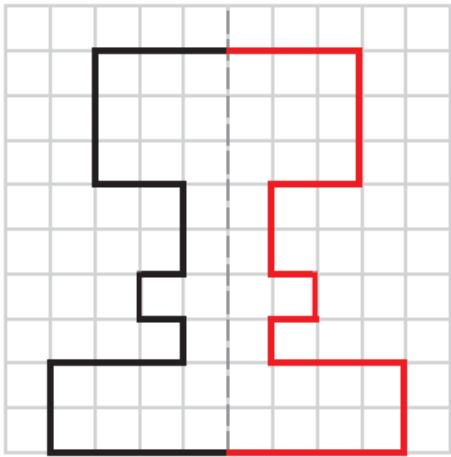
Each figure is half of a symmetric shape. Complete each figure by using the dotted line as the line of symmetry.



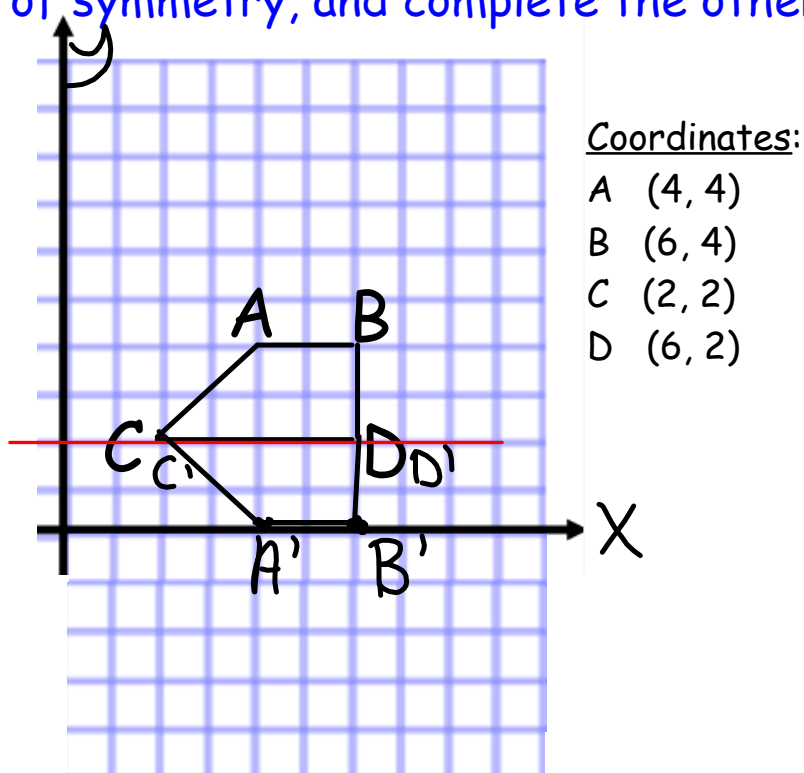




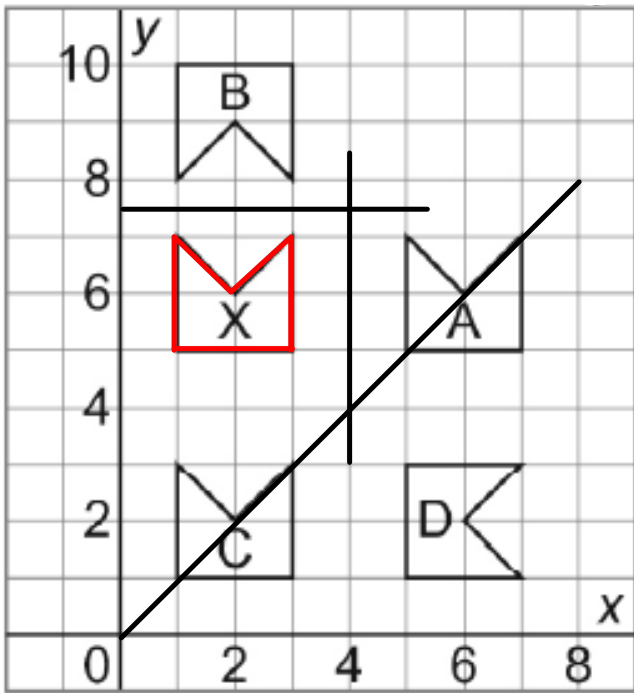




Copy the shape on graph paper. Use the red line as a line of symmetry, and complete the other half.

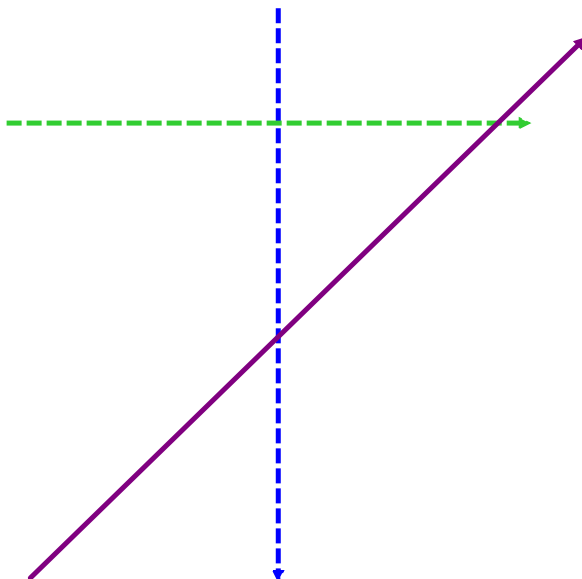


Identify the shapes that are related to the shape X by a line of reflection. Describe the symmetry in each case.



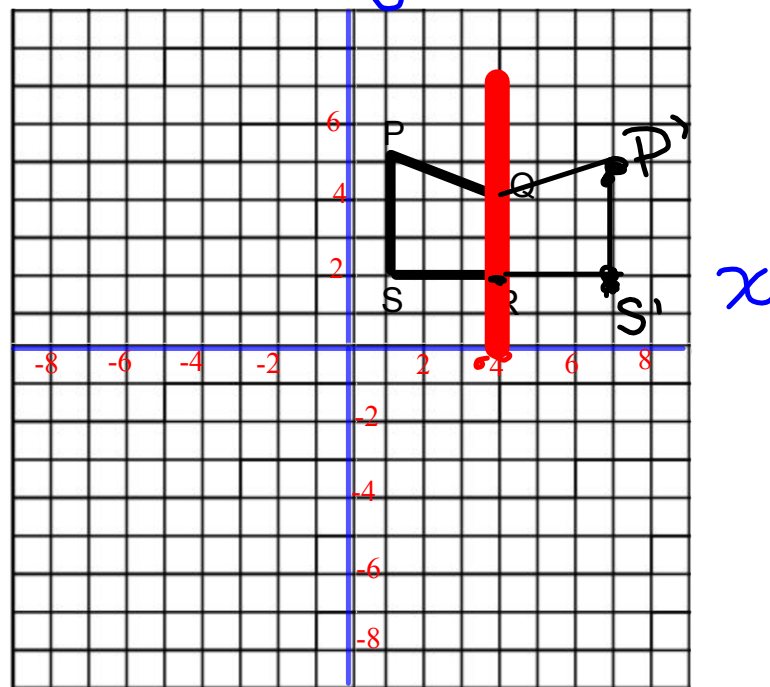
- A:** reflected in vertical line passing through 4 on the x-axis
- B:** reflected in horizontal line passing through 7.5 on the y-axis
- C:** not related to X by line symmetry
- D:** reflected in oblique line passing through (0, 0) and (8, 8)

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.



(x, y)
 \leftrightarrow
 \updownarrow

b) Write the coordinates of the original shape

$P(1, 5)$ $R(4, 2)$

$Q(4, 4)$ $S(1, 2)$

Go to next page to see answers

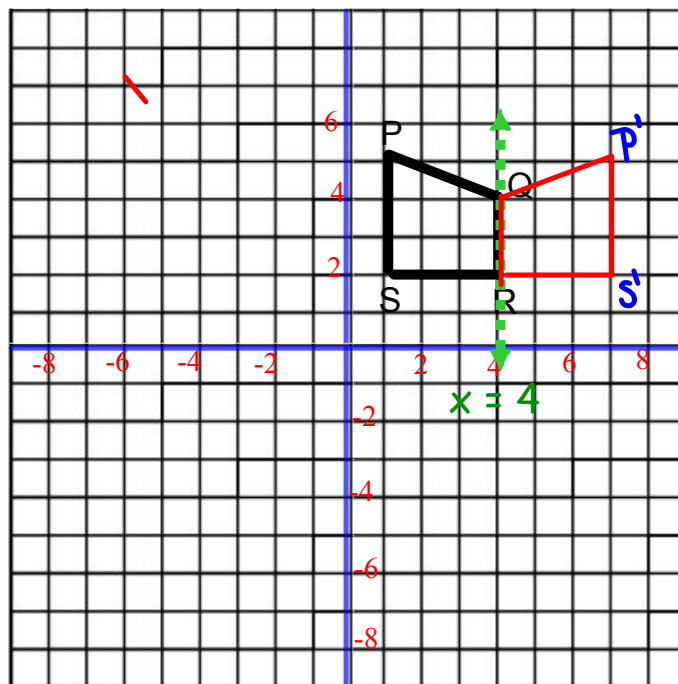
c) Write the coordinates of the reflected shape

$P'(7, 5)$ $R'(4, 2)$

$Q'(4, 4)$ $S'(7, 2)$

Quadrilateral PQRS is part of a larger shape.

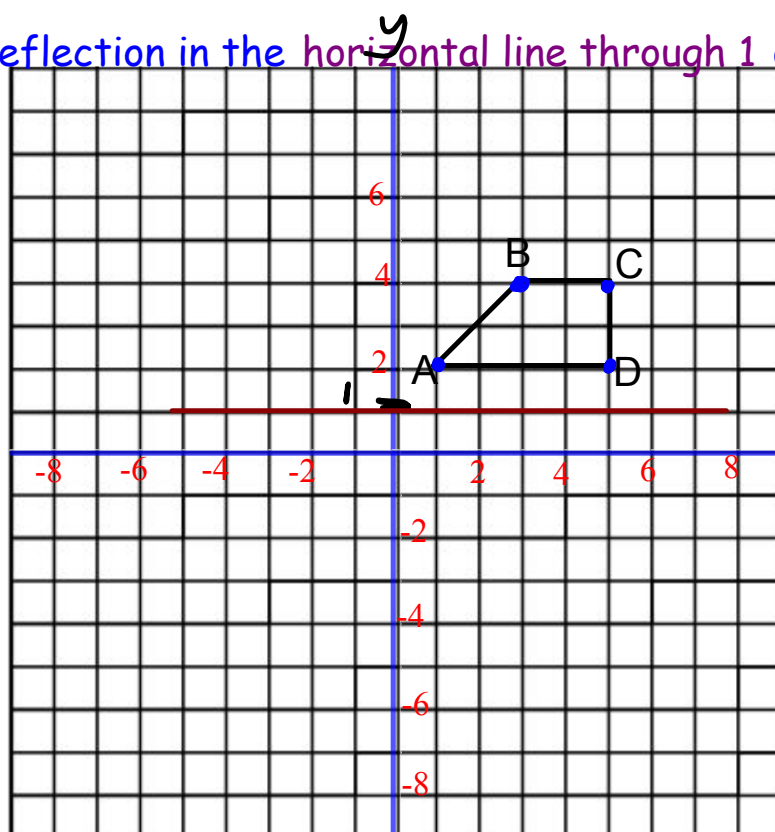
- a) Draw a reflection in the vertical line through 4 on the x-axis.



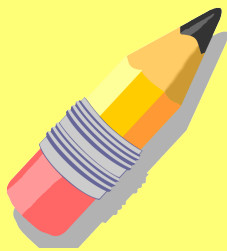
- b) Write the coordinates of the original shape
 $P(1, 5)$ $Q(4, 4)$ $S(1, 1)$

- 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.

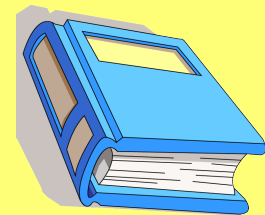


- Write the coordinates of the shapes formed.
- Describe the new shape and its symmetry.



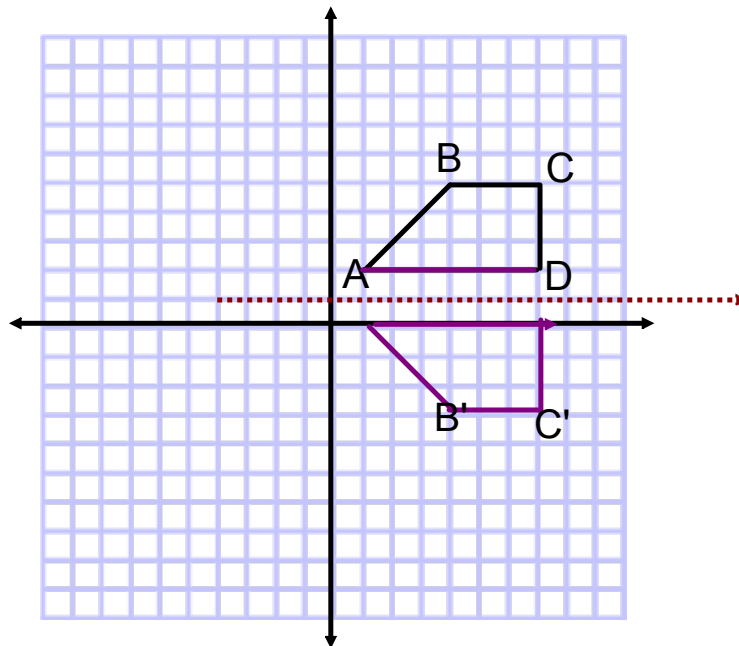
Homework:

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Questions: 3, 5, 8, 9, 10

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.