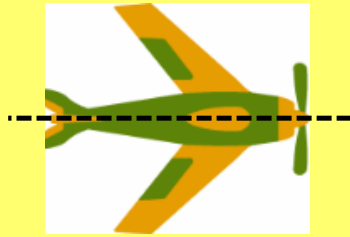# SECTION 7.5

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

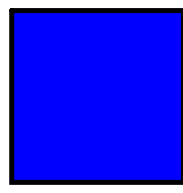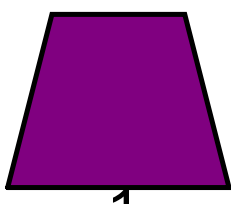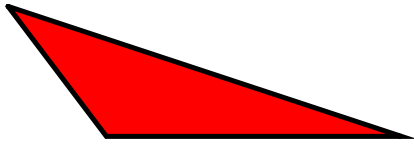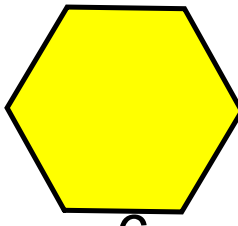How many lines of symmetry are in the following figures?
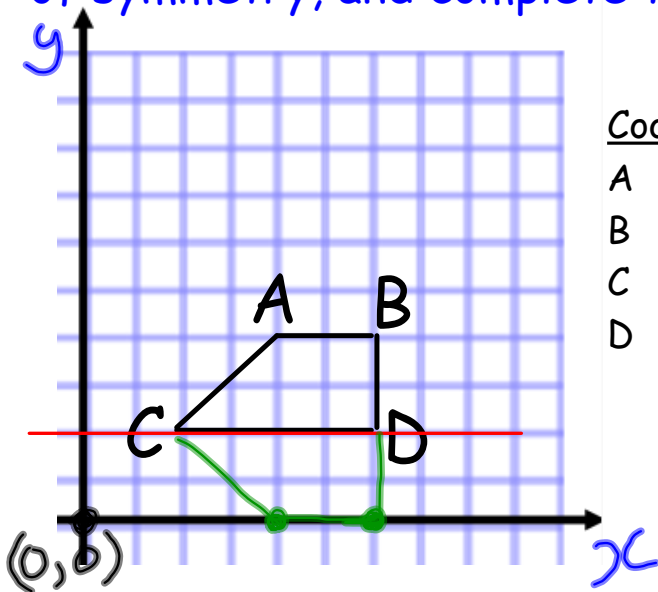
1

5

1

4

1

0

6

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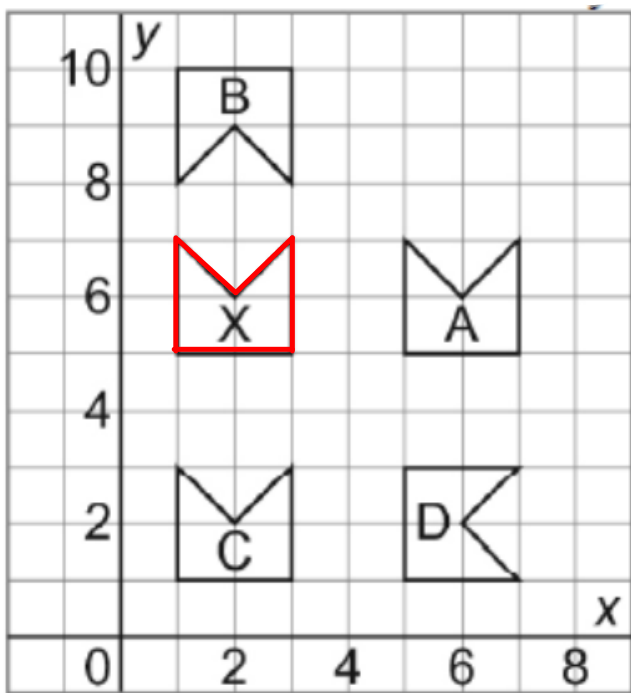

Coordinates:
A (4, 4)
B (6, 4)
C (2, 2)
D (6, 2)

Identify the shapes that are related to the shape X by a line of **reflection**. Describe the symmetry in each case.
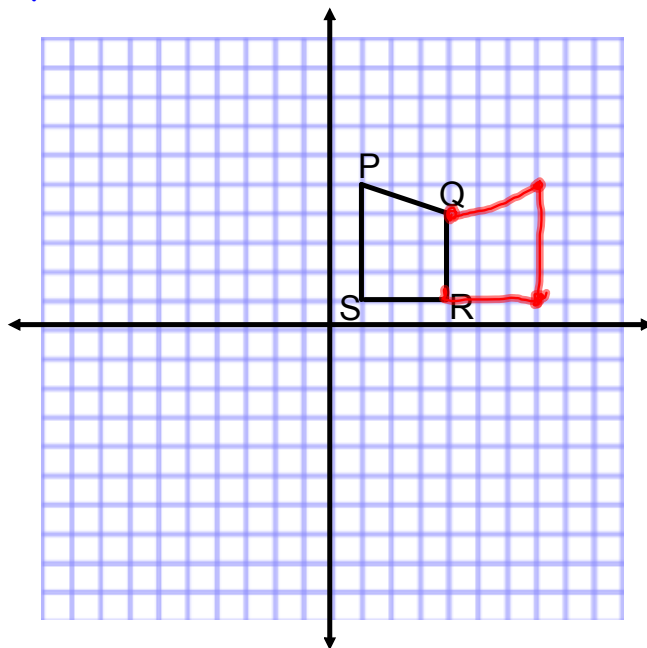
A: reflected in vertical line passing through 4 on the x-axis

B: reflected in horizontal line passir 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)

Quadrilateral PQRS is part of a larger shape.

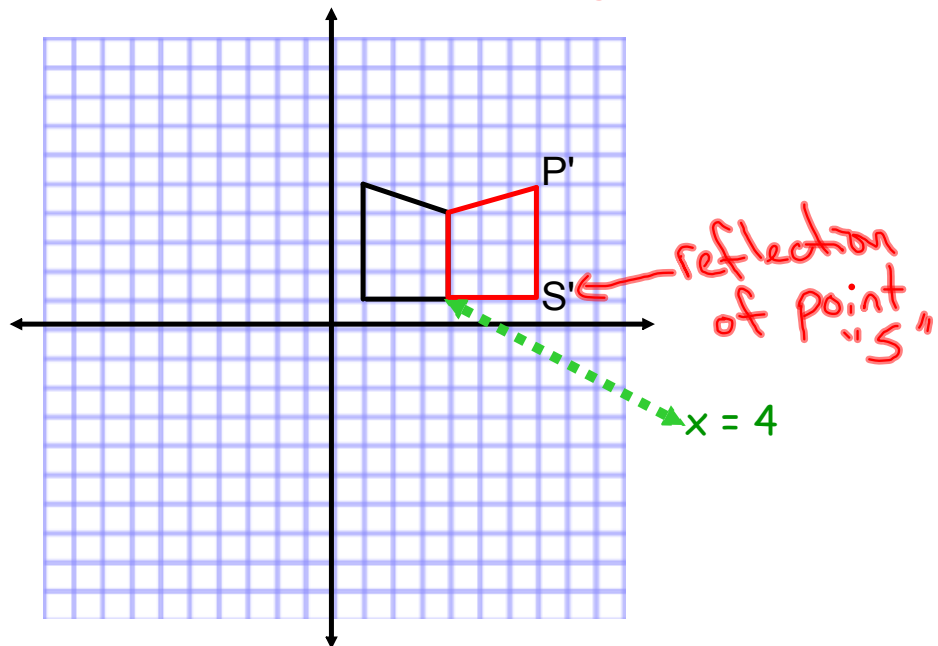a) Draw a reflection in the vertical line through 4 on the x-axis.
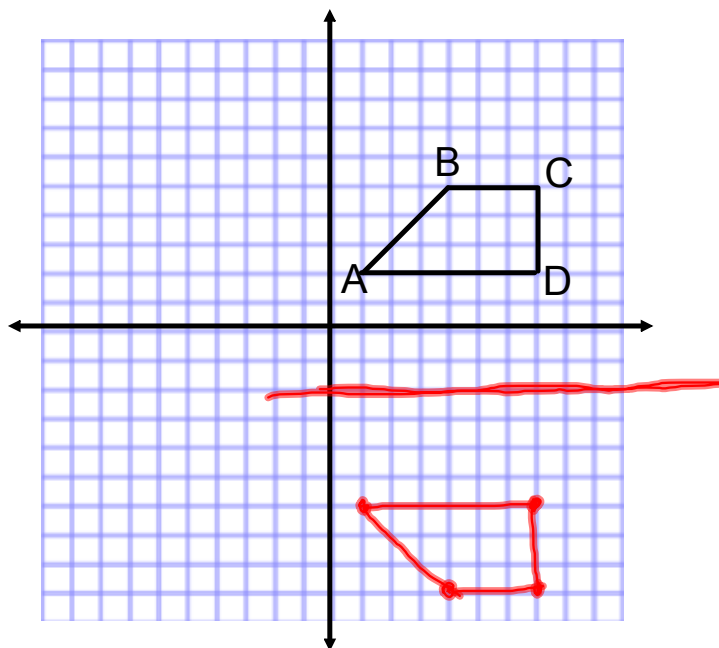

b) Write the coordinates of the larger shape formed.

c) Describe the larger shape and its symmetry.

Quadrilateral PQRS is part of a larger shape.

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

reflection of point "S"

x = 4

b) Write the coordinates of the larger shape formed.

P(1, 5) Q(4, 4)   S(1,1)
P'(7, 5) S'(7, 1)
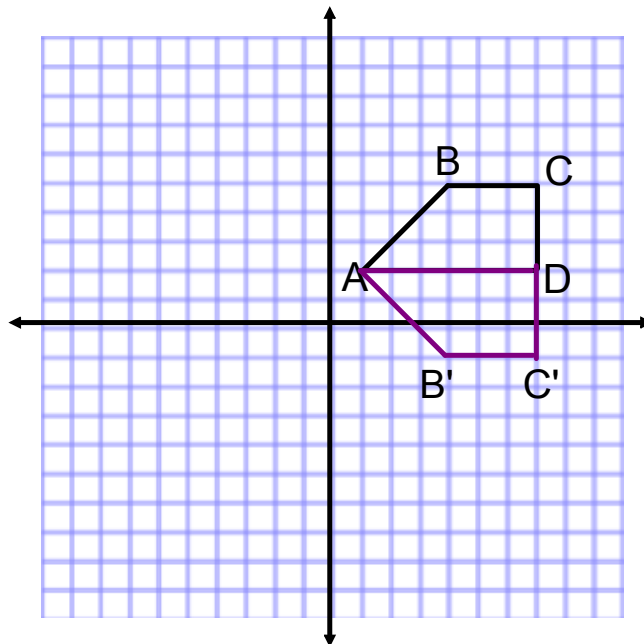
c) Describe the larger shape and its symmetry.

It is a pentagon with a line of symmetry through QR.

Draw a reflection in the horizontal line through 2 on the y-axis.

b) Write the coordinates of the larger shape formed.
c) Describe the larger shape and its symmetry.

Draw a reflection in the horizontal line through 2 on the y-axis.

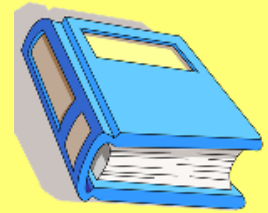b) Write the coordinates of the larger shape formed.

A(1, 1) B(4, 5) C(7,5)

B'(4,-1) C'(7,-1)

c) Describe the larger shape and its symmetry.

It is a pentagon with a line of symmetry through AD.

Homework:

p. 357 – 359
#s 3, 5, 6, 8, 9