Unit 7: Similarity and Transformations   Name: _____
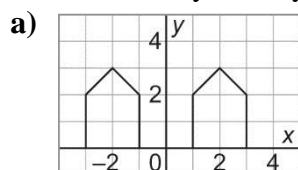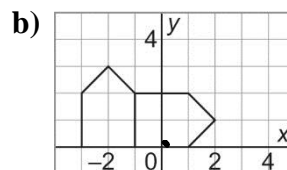
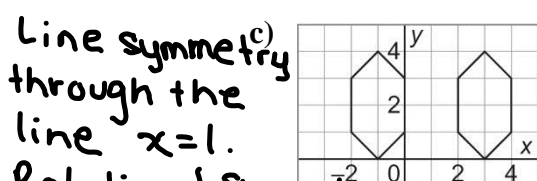### 7.7 Identifying Types of Symmetry on the Cartesian Plan – Worksheet

1. For each pair of shapes, determine whether they are related by line symmetry,
   by rotational symmetry, by both line and rotational symmetry, or by neither.
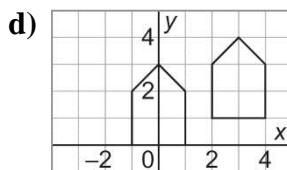   Describe the symmetry, if any.

   a)

   Line Symmetry through the y-axis.

   b)

   Rotational Symmetry about the point (-1,0) with a 90° clockwise rotation.

   c)

   Line symmetry through the line x=1.
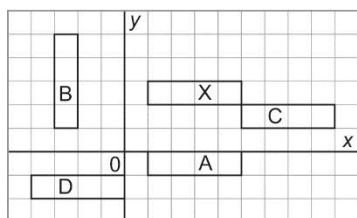   *Rotational Symmetry 180° about point (1,2)*

   d)

   No Symmetry.

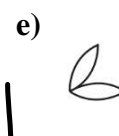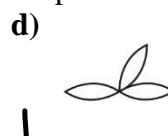2. Which of the rectangles A, B, C, D is related to rectangle X:
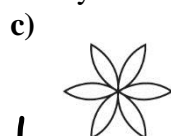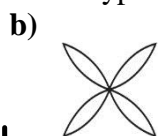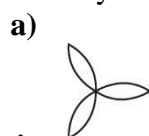   a) by rotational symmetry about the origin? *B*

   b) by rotational symmetry about one of the vertices of rectangle X? *C*

   c) by line symmetry? *A*

3. Identify and describe the types of symmetry in the petal shapes.

	a)	b)	c)	d)	e)
Line Symmetry	3	4	6	No Line Symmetry	1
Order of rotational Symmetry	3	4	6	No Rotational Symmetry	2

4. Draw the image of quadrilateral WXYZ after each transformation.
Write the coordinates of each shape formed by quadrilateral WXYZ
and its image. Describe the symmetry in each of these shapes.

a) reflection in the *x*-axis

x and y axes are lines of symmetry

b) rotation 90° clockwise about the origin *rotational sym order 2.*

x and y axes lines of symmetry. Rotational sym. order 4.

c) rotation 90° clockwise about the point (1, 0)

Line symmetry through (1,0) and (-1,2). No rotational sym.

d) translation 1 square right and 1 square down

No line symmetry. Rotational sym. of order 2 about point (0.5;-0.5)