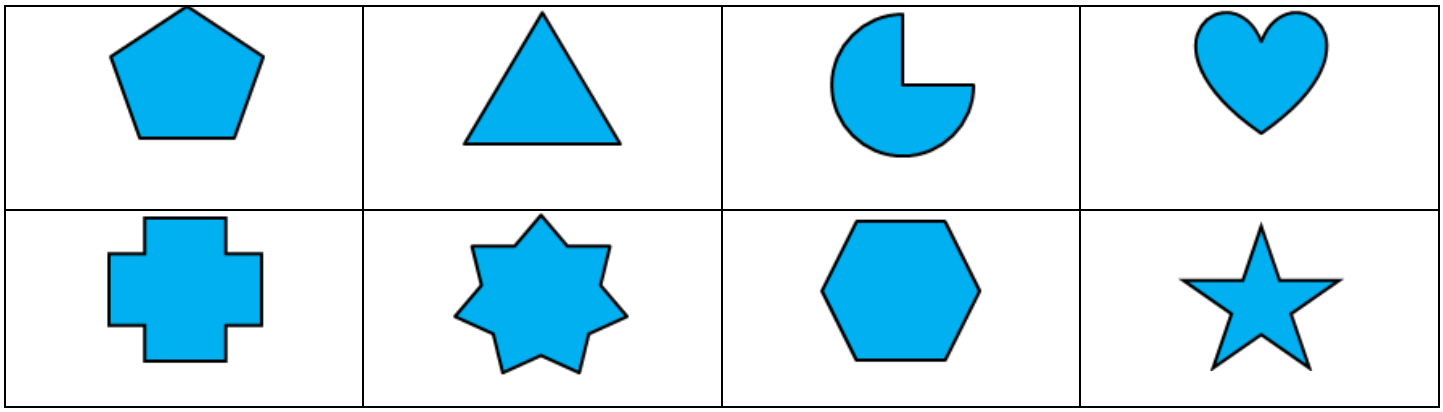
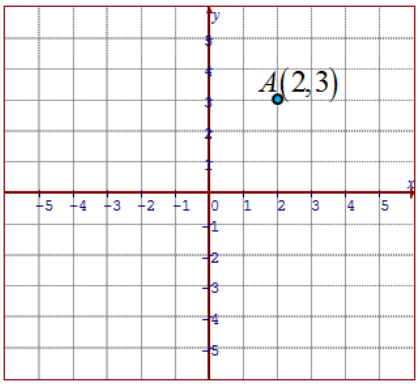
Name:_____ Date:_____

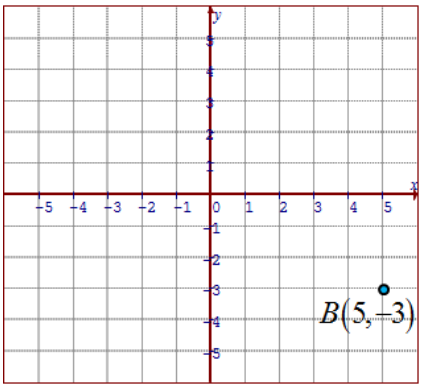
Math 9 HW Section 7.6 Rotational Symmetry

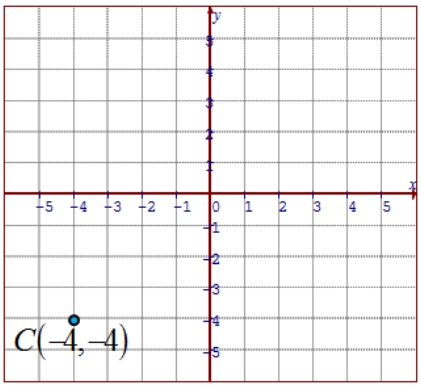
1. Indicate the order of rotation for each of the following shapes and indicate the angle of rotational symmetry:



2. Given each diagram, rotate the image about the origin by $90°$, $180°$, and $270°$





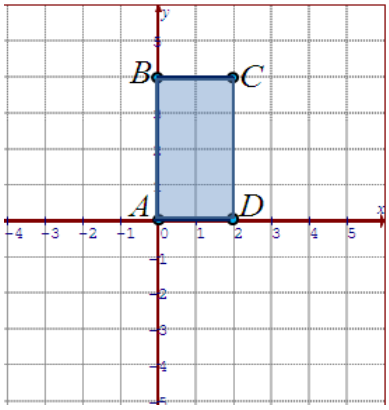


3. A 270 degree CW rotation is the same as what rotation in a CCW direction?

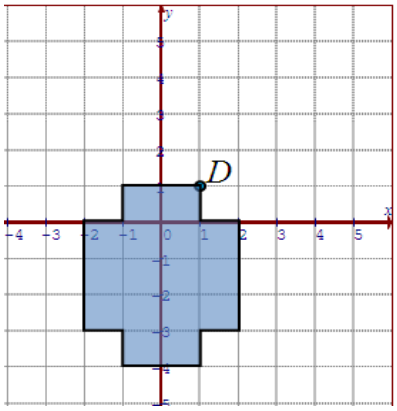
4. Which letters in the alphabet have rotational symmetry?

5. Given each diagram, draw the image after the rotation:

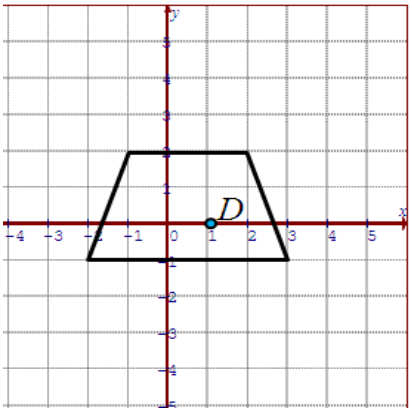
90° CCW about Point D



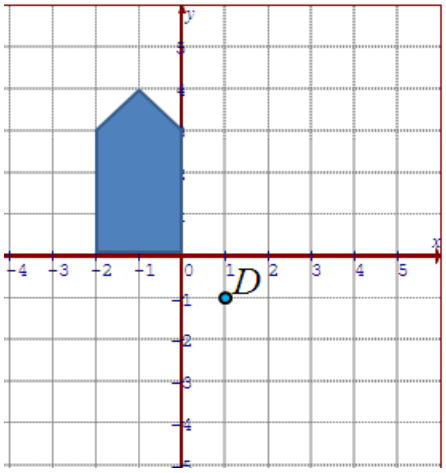
270° CW about Point D



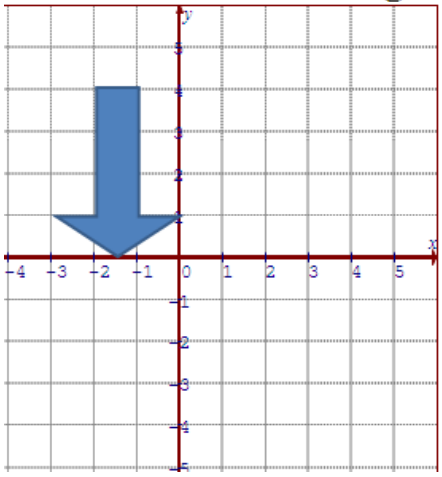
180° CW about Point D



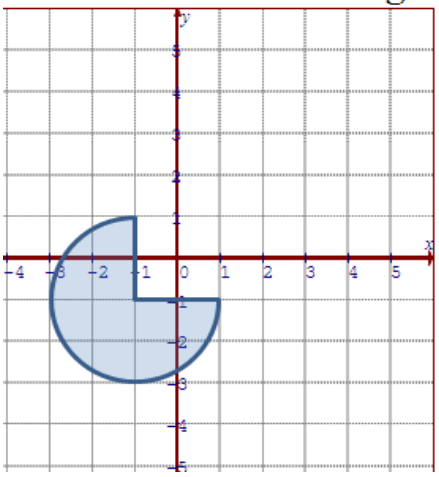
90° *CCW about Point D*



180° *CW about the Origin*



90° *CCW about the Origin*



6. The point P(3,5) is rotated 90 degrees CW about the origin. What is the coordinates of the new point?

7. How many order of rotations does the letter "O" have?

8. The point P(a,b) have been rotated 90degrees CCW about the origin and resulted with the coordinates P'(6,9). What were the original coordinates of point "P"?

9. The point P(c,d) have been rotated 90 degrees CW about the point (1,1) and resulted with the coordinates (4,8). What were the original coordinates of point P?

10. The point P(3,5) is rotated 180 degrees CW about the point A(3,2) and then rotated 90degrees CCW about point B(1,1). What is the coordinate of P after the rotations?