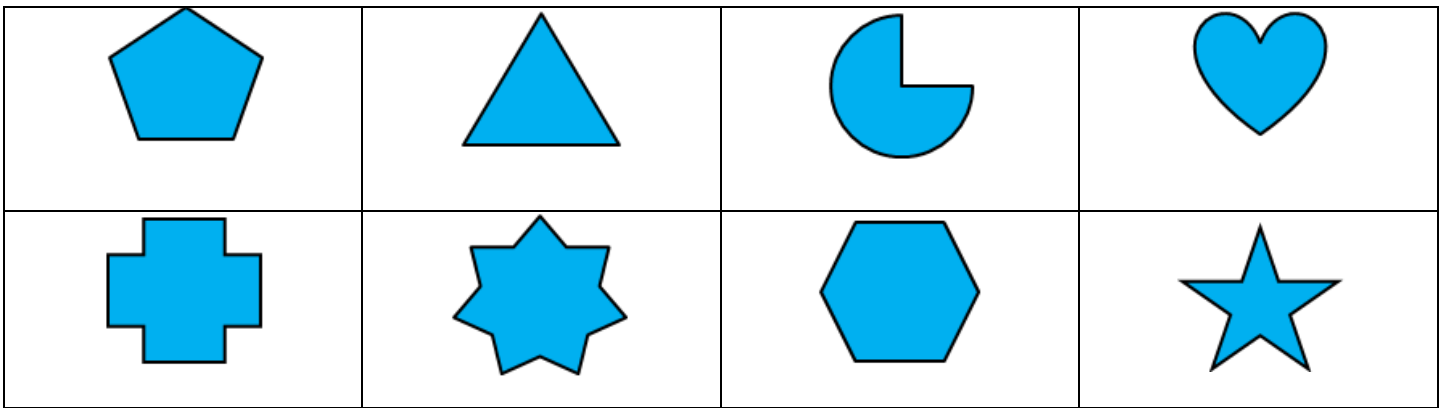


Name: _____

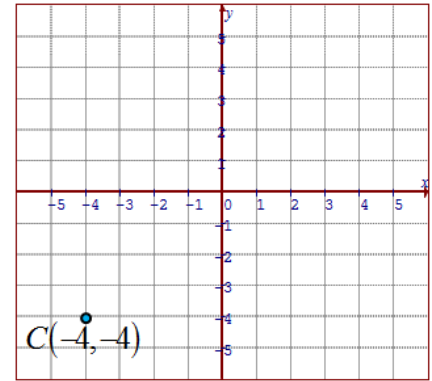
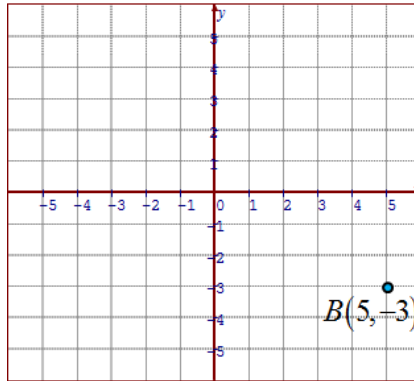
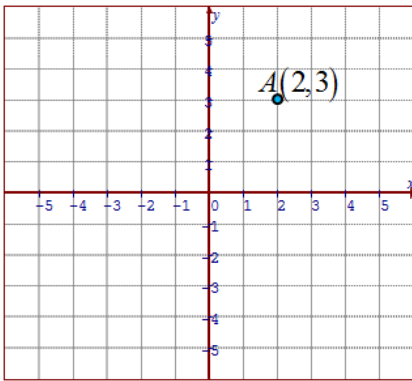
Date: _____

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°

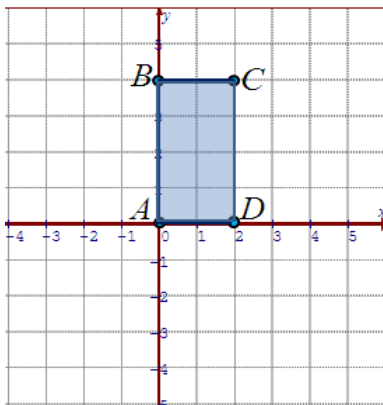


3. A 270° degree CW rotation is the same as what rotation in a CCW direction?

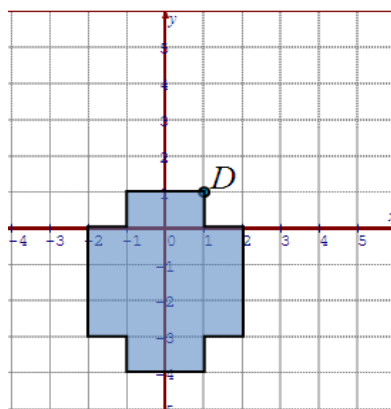
4. Which letters in the alphabet have rotational symmetry?

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

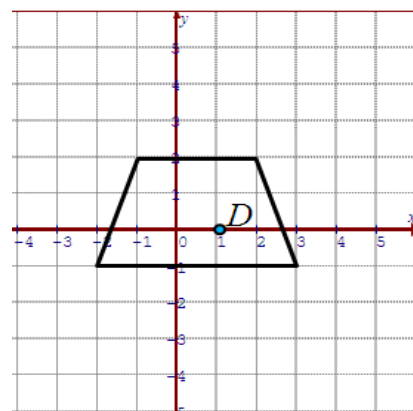
90° CCW about Point D



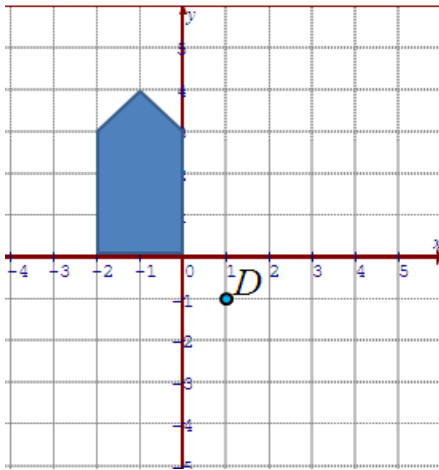
270° CW about Point D



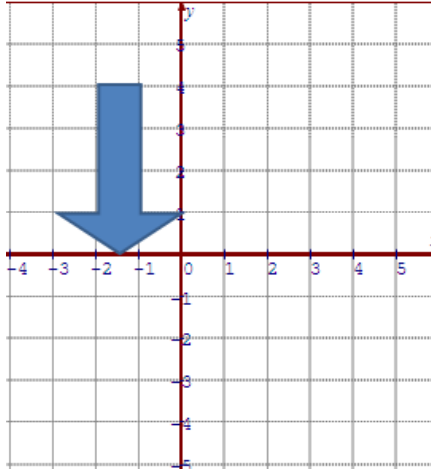
180° CW about Point D



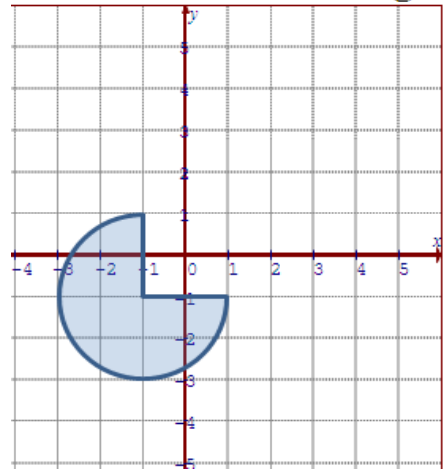
90° CCW about Point D



180° CW about the Origin



90° CCW about the Origin



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