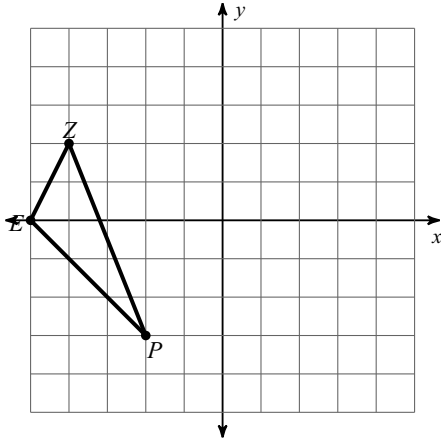


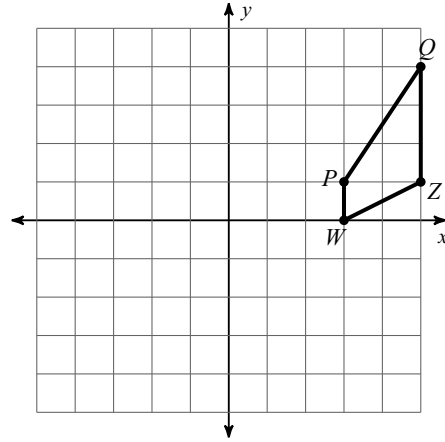
# 12.3a Rotations Day 1

**Graph the image of the figure using the transformation given. Then find the coordinates of the vertices of the image (the figure after the rotation).**

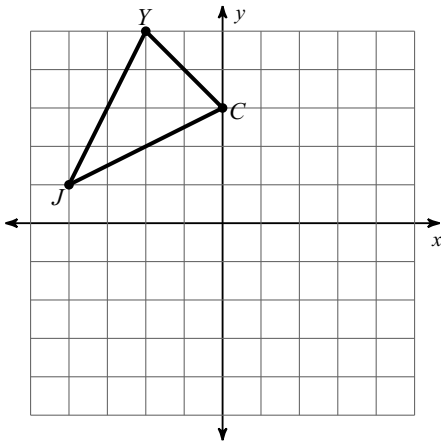
1) rotation  $180^\circ$  about the origin



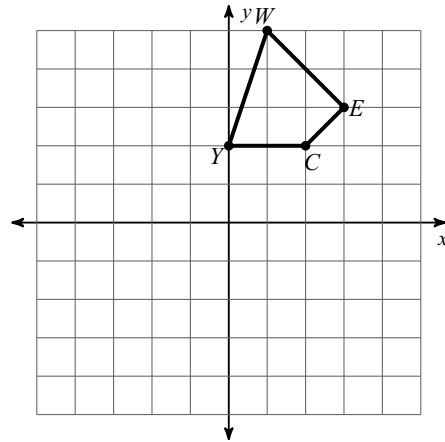
2) rotation  $90^\circ$  clockwise about the origin



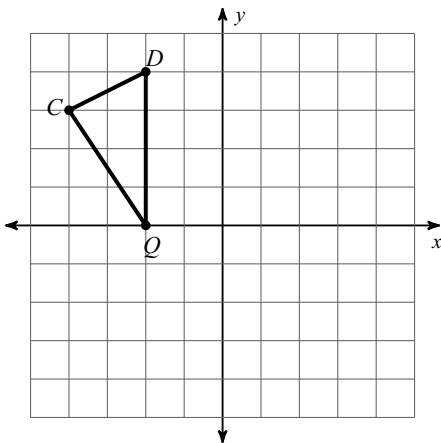
3) rotation  $90^\circ$  counterclockwise about the origin



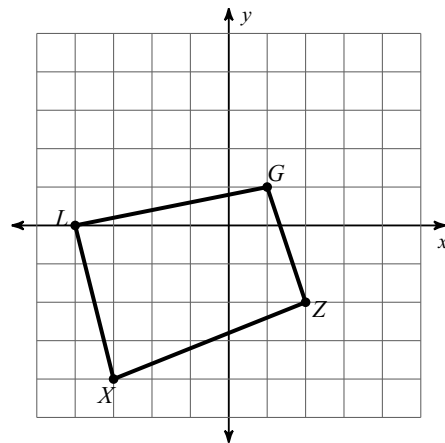
4) rotation  $180^\circ$  about the origin



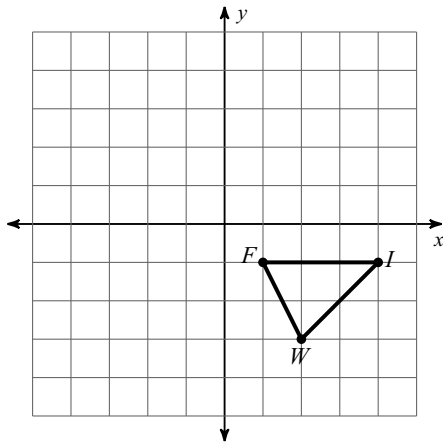
5) rotation  $180^\circ$  about the origin



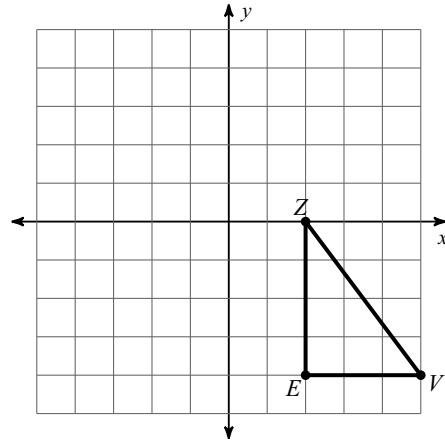
6) rotation  $90^\circ$  clockwise about the origin



7) rotation  $90^\circ$  clockwise about the origin

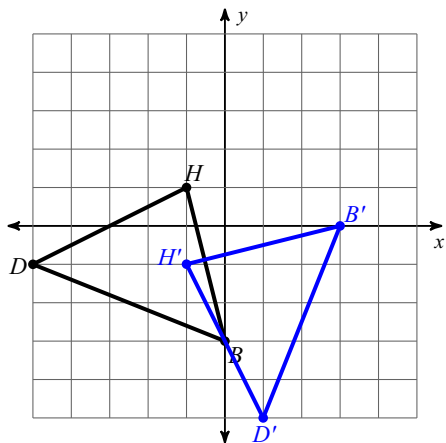


8) rotation  $90^\circ$  counterclockwise about the origin

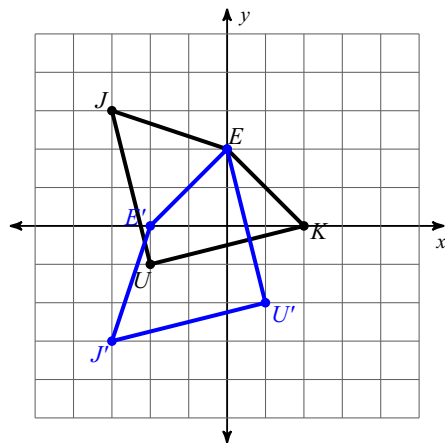


Write a rule to describe each transformation.

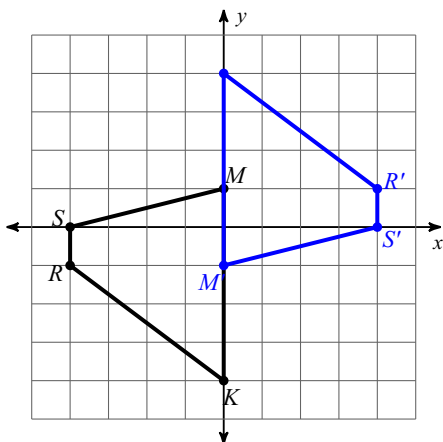
9)



10)



11)



12)

