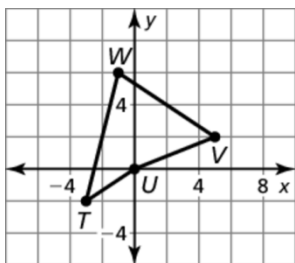


Worksheet 4.3 – Rotations

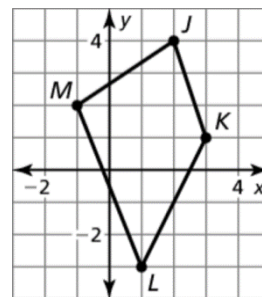
1. Graph image of the polygon after a 90° rotation about the origin. Also list the new coordinates.

- W'
- V'
- U'
- T'



2. Graph the image of the polygon after a 180° rotation about the origin. Also list the new coordinates.

- J'
- K'
- L'
- M'



In 3 - 4, graph $\triangle RST$ with vertices $R(2, 3)$, $S(-2, 1)$, and $T(-1, 5)$ and its image after the composition. Then list the final coordinates of the image.

3. Translation: $(x, y) \rightarrow (x - 2, y - 1)$

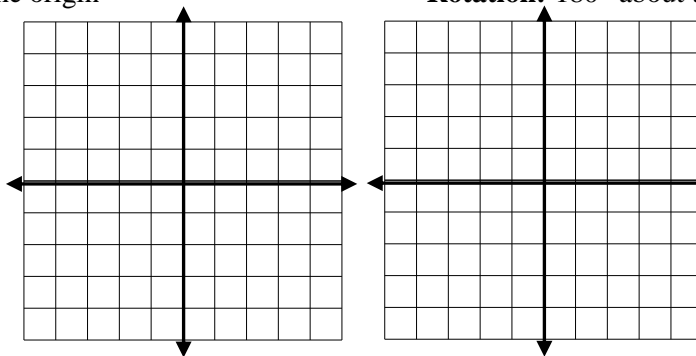
4. Reflection: in the line $x = y$

Rotation: 90° about the origin

Rotation: 180° about the origin

- R'
- S'
- T'

- R''
- S''
- T''

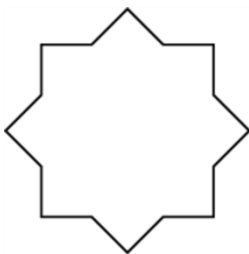


- R'
- S'
- T'

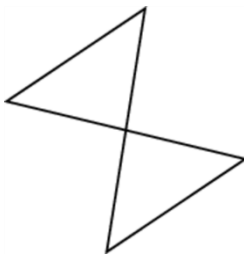
- R''
- S''
- T''

In 5 - 7, determine whether the figure has rotational symmetry. If so, describe any rotations that map the figure onto itself.

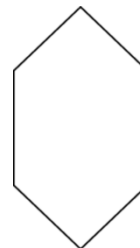
5.



6.



7.



8. Your friend claims that he can do a series of translations on any geometric object and get the same result as a rotation. Explain whether your friend is correct.

9. Your friend claims that she can do a series of reflections on any geometric object and get the same result as a rotation. Explain whether your friend is correct.

Rotate each coordinate counterclockwise using the given number of degrees about the origin.

10. $P(8, -5); 90^\circ$

11. $Q(-6, -11); 270^\circ$

12. $R(-15, 21); 180^\circ$

13. $S(13, 0); 270^\circ$