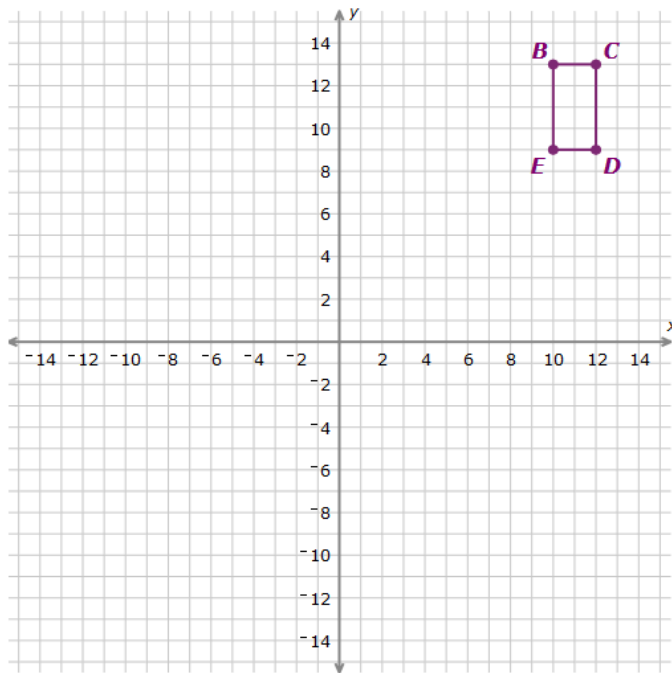


Graph the sequence of transformations.

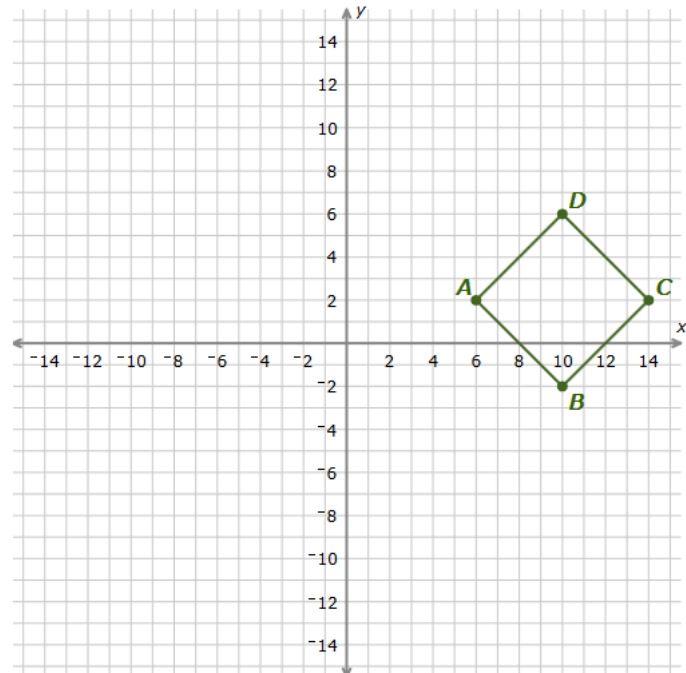
1.

Rotation  $90^\circ$  counterclockwise around the origin  
Reflection across the  $x$ -axis



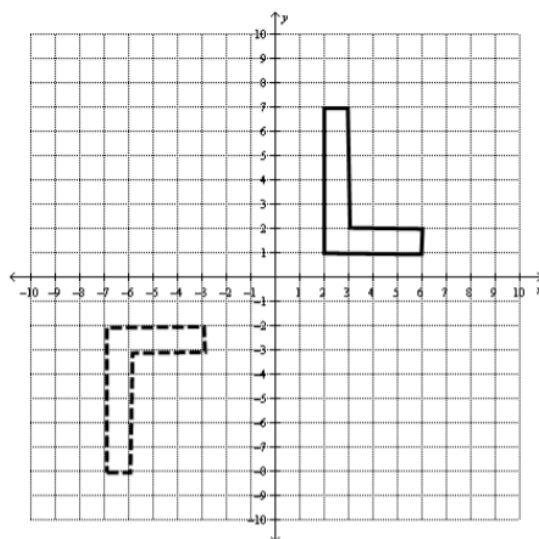
2.

Reflection across the  $y$ -axis  
Translation  $(x, y) \mapsto (x + 7, y - 12)$



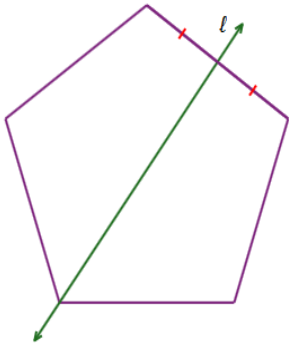
3.

Describe how you could move the solid polygon to exactly match the dashed polygon using a series of two transformations.



4. Check all that apply:

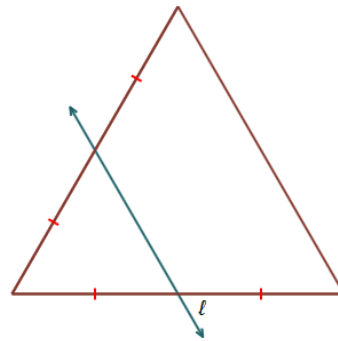
Which of the following transformations carry this regular polygon onto itself?



- ☐ rotation of  $40^\circ$  counterclockwise
- ☐ reflection across  $l$
- ☐ rotation of  $30^\circ$  counterclockwise
- ☐ rotation of  $90^\circ$  counterclockwise

5. Check all that apply:

Which of the following transformations carry this regular polygon onto itself?



- ☐ rotation of  $72^\circ$  counterclockwise
- ☐ reflection across  $l$
- ☐ rotation of  $120^\circ$  clockwise
- ☐ rotation of  $90^\circ$  counterclockwise

6. Describe how you can tell if a shape has reflection symmetry.

7. Describe how you can tell if a shape has rotational symmetry.

8. What is the smallest angle of rotation that will carry a regular octagon onto itself?