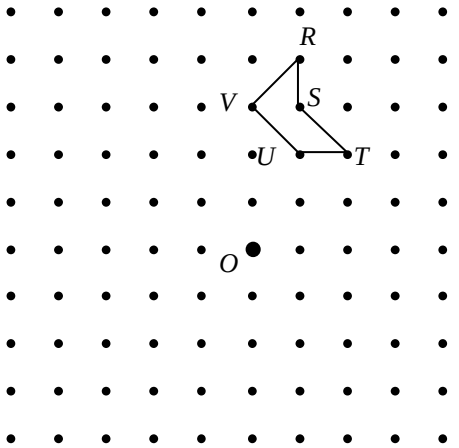
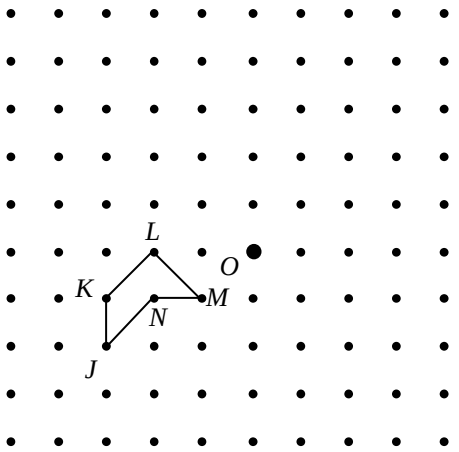
Supplemental Assignment 17: Transformations 2

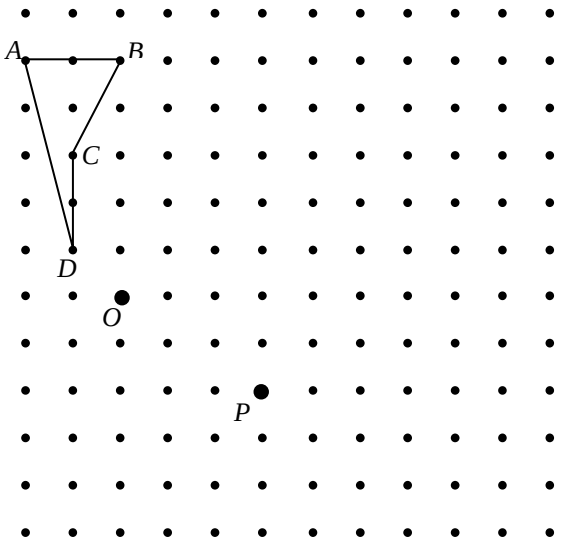
1. Sketch the image of the pentagon for a rotation of 180˚ counterclockwise about point *O*.



2. Sketch the image of the pentagon below for a rotation of 90˚ clockwise about point *O*.

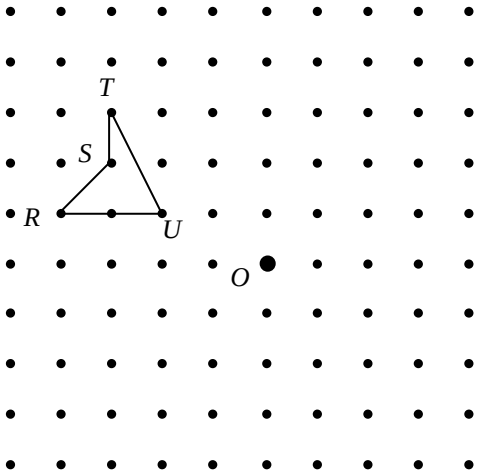


3. Sketch the image of quadrilateral *ABCD* for a clockwise rotation of 90º about point *O*. Label the image $A'B'C'D'$. Next, sketch the image of $A'B'C'D'$ for a counter-clockwise rotation of 90º about point *P*. Label the image $A''B''C''D''$.



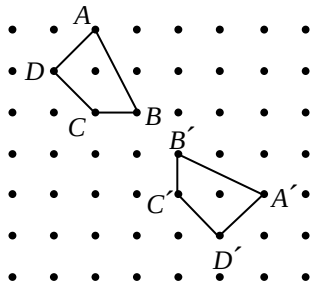
4. Can you discover a *single* transformation that would map *ABCD* directly to *A′B′C′D′*? Describe it as carefully and specifically as you can.

5. Use the quadrilateral *RSTU* and center of rotation *O* shown here to explain why it is not possible to perform a rotation of 45º on a dot grid.

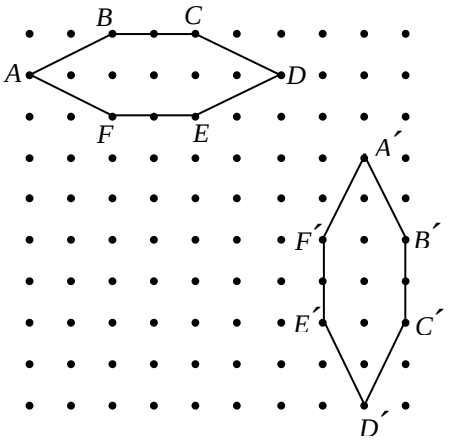


6. Identify which transformation (translation, reflection, or roation) would change each polygon to the image. For an answer of "translation," describe the translation. For an answer of "reflection," sketch the line of reflection. For an answer of "rotation," list the angle of rotation and show (approximately) the center of rotation.

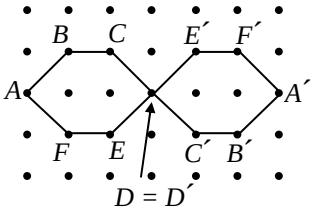
(a)



(b)



(c)



(d)