

**Identifying Transformations (Open Response)**

**CHECK FOR ORIENTATION!!!!**

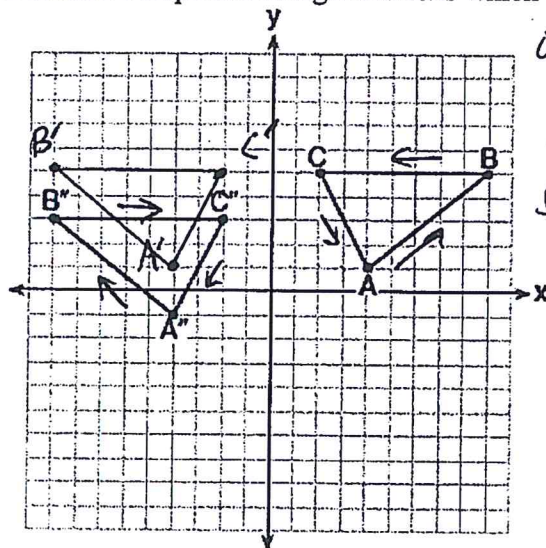
**Same orientation (rotation first, then translation)**

- Rotate any point the appropriate degree measure and direction.
- Translate the rest of the way by counting from that point to its image.

**Opposite orientation (reflection first, then translation)**

- Reflect over the appropriate axis (use  $y=x$  if it needs to be reflected diagonally)
- Translate the rest of the way by counting from any new point to its image.

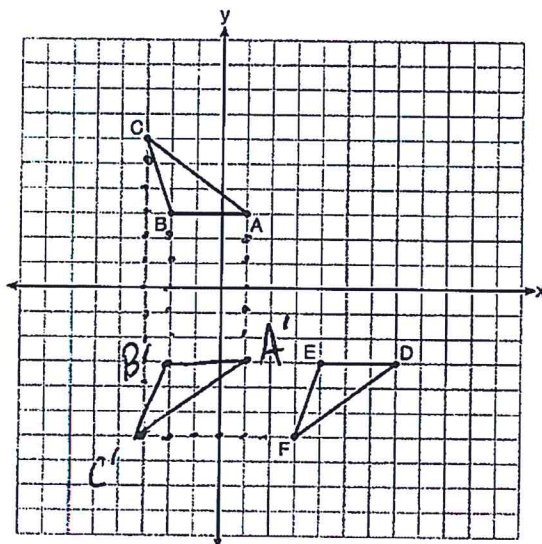
1. The graph below shows  $\triangle ABC$  and its image,  $\triangle A''B''C''$ . Describe a sequence of rigid motions which would map  $\triangle ABC$  onto  $\triangle A''B''C''$ .



opposite orientation  
reflection

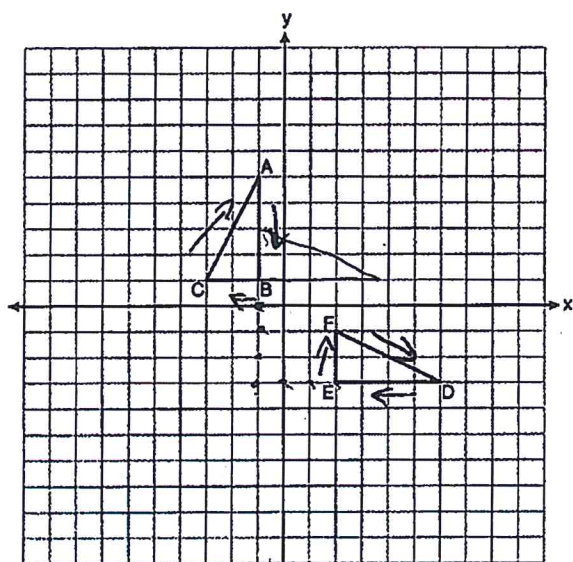
1) Reflect  $\triangle ABC$  over the  $y$ -axis followed by a translation 2 units down

2. Describe a sequence of transformations that will map  $\triangle ABC$  onto  $\triangle DEF$  as shown below.



1) reflect  $\triangle ABC$  over the  $x$ -axis followed by a translation 6 units to the right.

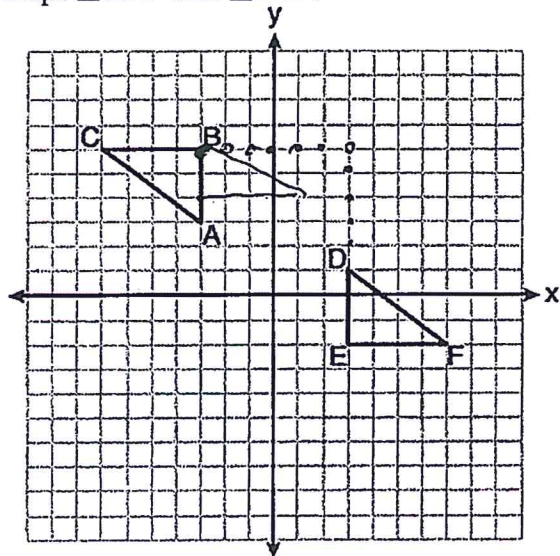
3. On the set of axes below,  $\triangle ABC$  and  $\triangle DEF$  are graphed. Describe a sequence of rigid motions that would map  $\triangle ABC$  onto  $\triangle DEF$ .



rotate  $\triangle ABC$   $90^\circ$  clockwise centered at B followed by a translation 4 units down and 3 units right.

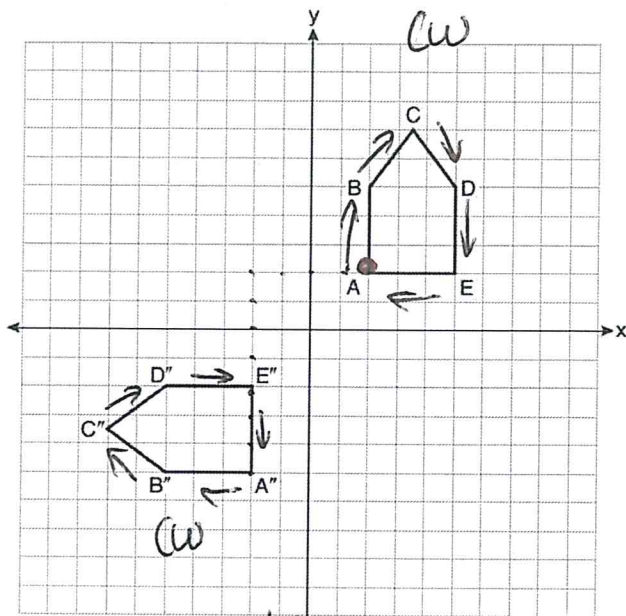
Same orientation  
rotation

4. On the set of axes below,  $\triangle ABC \cong \triangle DEF$ . Describe a sequence of rigid motions that maps  $\triangle ABC$  onto  $\triangle DEF$ .



rotate  $\triangle ABC$   $180^\circ$  counter-clockwise centered at B followed by a translation 6 units right and 5 units down

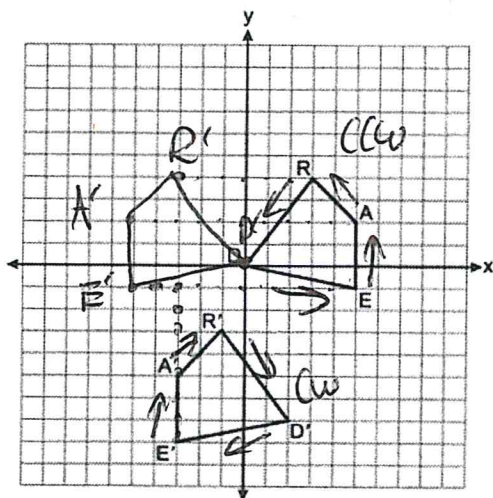
5. On the set of axes below, pentagon  $ABCDE$  is congruent to  $A''B''C''D''E''$ . Describe a sequence of rigid motions that maps pentagon  $ABCDE$  onto  $A''B''C''D''E''$ .



rotate  $ABCDE$   $90^\circ$  counter-clockwise centered at  $A$  followed by a translation left 4 and down 7.

Same orientation  
rotation

6. Quadrilateral  $DEAR$  and its image, quadrilateral  $D'E'A'R'$ , are graphed on the set of axes below. Describe a sequence of transformations that maps quadrilateral  $DEAR$  onto quadrilateral  $D'E'A'R'$ .

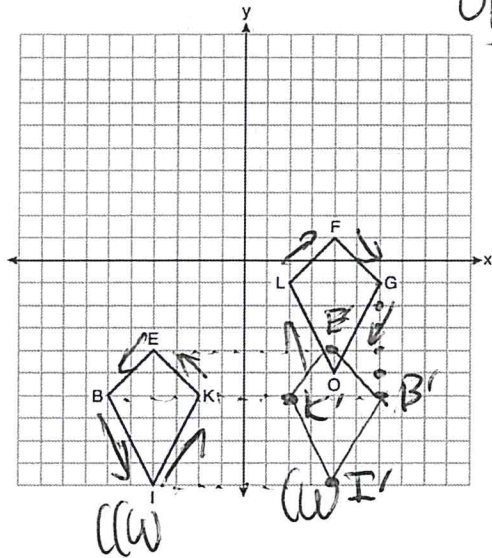


reflect  $DEAR$  over the  $y$ -axis followed by a translation right 2 and down 7.

opposite orientation  
line reflection



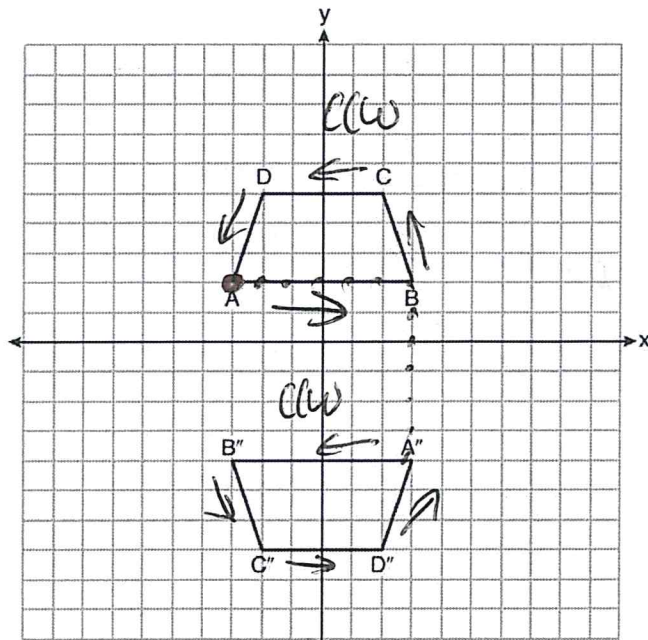
7. Quadrilaterals *BIKE* and *GOLF* are graphed on the set of axes below. Describe a sequence of transformations that maps quadrilateral *BIKE* onto quadrilateral *GOLF*.



Opposite orientation  
line reflection

reflect *BIKE* over the *y*-axis followed by a translation 5 units up

8. Trapezoids *ABCD* and *A''B''C''D''* are graphed on the set of axes below. Describe a sequence of transformations that maps trapezoid *ABCD* onto trapezoid *A''B''C''D''*.



rotate *ABCD*  $180^\circ$  clockwise centered at *A* followed by a translation 6 right and 6 down.

Same orientation  
rotation