

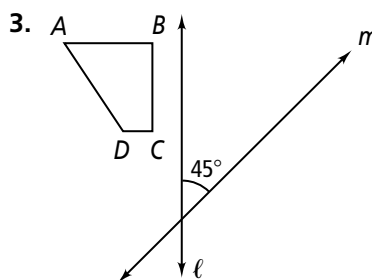
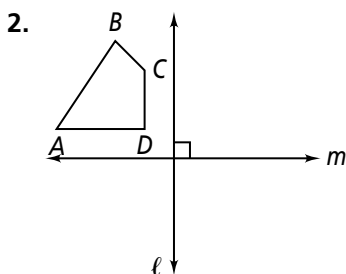
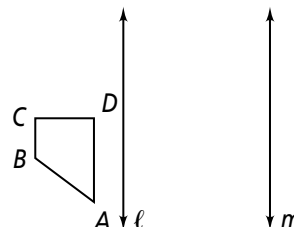
# Practice

Form K

## Compositions of Isometries

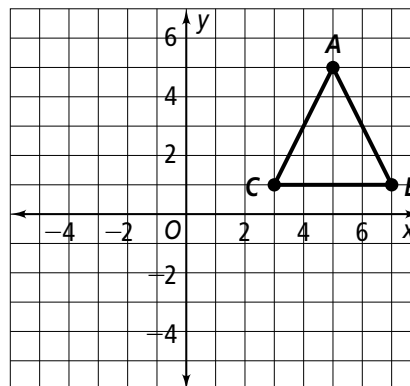
Find the image of each figure after the transformation  $R_m \circ R_\ell$ . Is the resulting transformation a translation or a rotation? For a translation, describe the direction and distance. For a rotation, tell the center of rotation and the angle of rotation.

1. To start, if the lines  $\ell$  and  $m$  are parallel, then it is a    ?   .  
 If  $\ell$  and  $m$  intersect, then it is a    ?   .

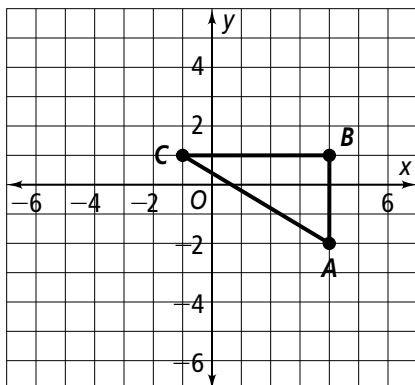


Graph  $\triangle ABC$  and its glide reflection image.

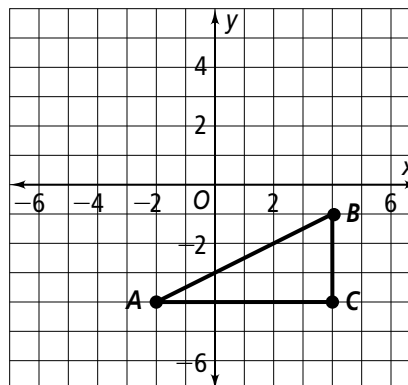
4.  $(R_{x\text{-axis}} \circ T_{\langle -2, 0 \rangle})(\triangle ABC)$   
 To start, translate the vertices of  $\triangle ABC$  to:  
 $A'(\square, \square), B'(\square, \square), C'(\square, \square)$ .  
 Then, reflect  $\triangle A'B'C'$  across  $\square$ .



5.  $(R_{y\text{-axis}} \circ T_{\langle 0, -3 \rangle})(\triangle ABC)$



6.  $(R_{y=-1} \circ T_{\langle 1, -1 \rangle})(\triangle ABC)$



# Practice (continued)

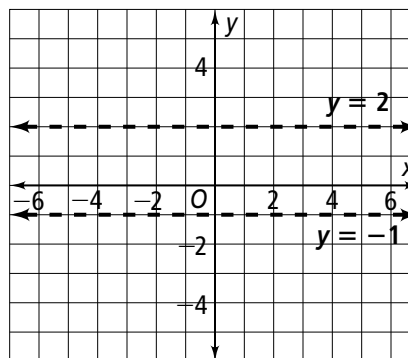
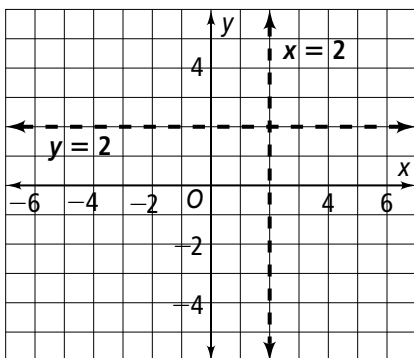
Form K

## Compositions of Isometries

Use the given points and lines. Graph  $\overline{XY}$  and its image  $\overline{X'Y'}$  after a reflection first across  $\ell_1$  and then across  $\ell_2$ . Is the resulting transformation a translation or a rotation? For a translation, describe the distance and direction. For a rotation, tell the center of rotation and the angle of rotation.

7.  $X(4, 3), Y(-2, 1); \ell_1 : y = 2; \ell_2 : x = 2$

8.  $X(-3, 4), Y(2, 3); \ell_1 : y = 2; \ell_2 : y = -1$



9. **Open-Ended** Draw a quadrilateral on a coordinate grid. Draw the image of the quadrilateral for one example of each transformation.
- reflection
  - translation
  - rotation
  - glide reflection

Identify each mapping as a translation, reflection, rotation, or glide reflection. Write the rule for each translation, reflection, rotation, or glide reflection. For glide reflections, write the rule as a composition of a translation and a reflection.

- trapezoid  $ABCD \rightarrow$  trapezoid  $JICD$
- trapezoid  $ABCD \rightarrow$  trapezoid  $NKLM$
- trapezoid  $CIJD \rightarrow$  trapezoid  $LKNM$
- trapezoid  $CIJD \rightarrow$  trapezoid  $TSNU$
- trapezoid  $KLMN \rightarrow$  trapezoid  $STUN$

