

Sequence of Transformations

Name _____

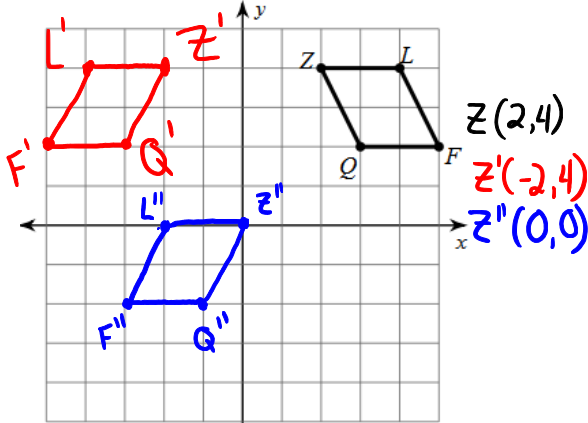
Graph the image of the figure using the sequence of transformations given. Then write the coordinate notation.

1) Reflect across the y-axis.

2) Translate right 3 and up 1.

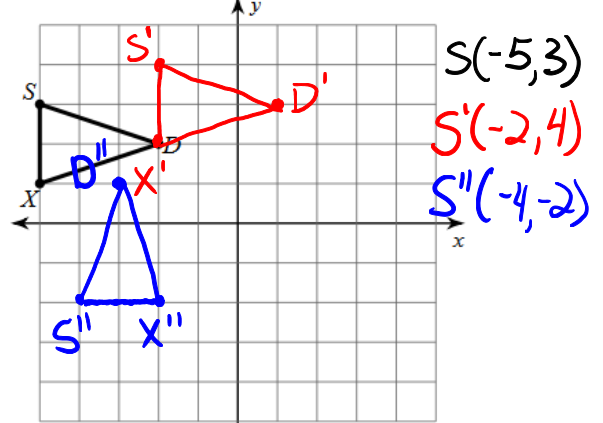
Rotate 90° CCW about the origin.

Translate it 2 right and 4 down.



Coordinate Notation:

$$(a, b) \rightarrow (-a, b) \rightarrow (-a+2, b-4)$$



Coordinate Notation:

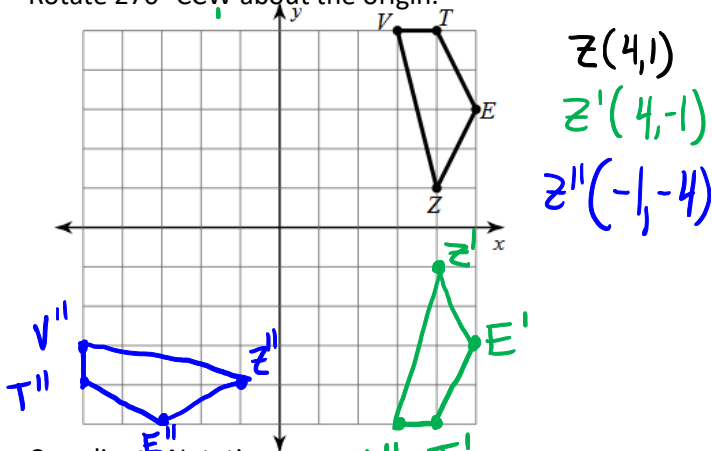
$$(a, b) \rightarrow (a+3, b+1) \rightarrow (-b+1, a+3)$$

3) Reflect across the x-axis.

4) Rotate 90° CW about the origin.

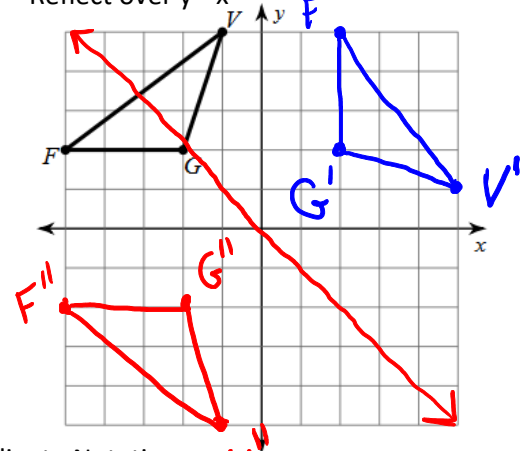
Rotate 270° CCW about the origin.

Reflect over $y=-x$



Coordinate Notation:

$$(a, b) \rightarrow (a, -b) \rightarrow (-b, -a)$$



Coordinate Notation:

5) Rotate 180° about the origin.

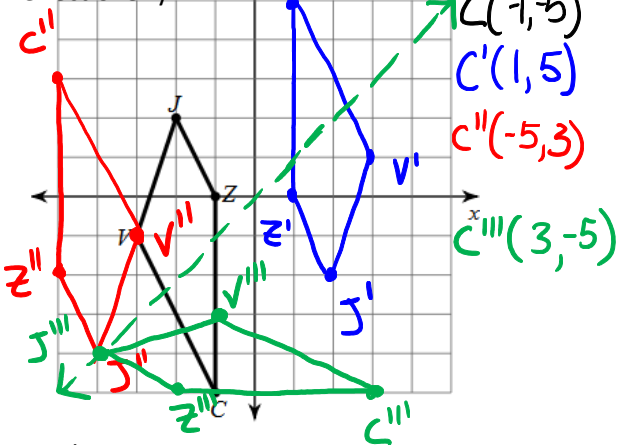
6) Reflect across $y=x$.

Translate $(x, y) \rightarrow (x-6, y-2)$.

Translate left 4 and up 2.

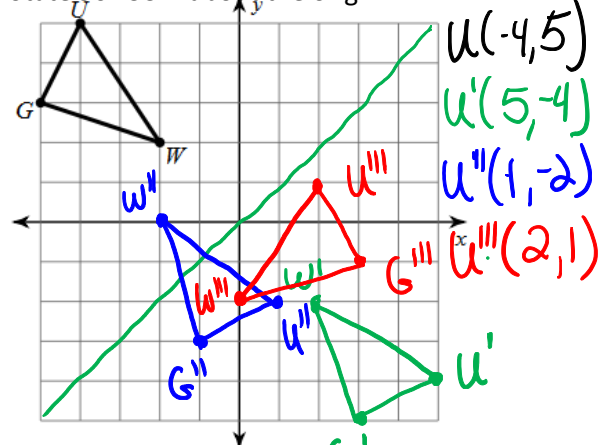
Reflect over $y=x$.

Rotate 90° CCW about the origin.



Coordinate Notation:

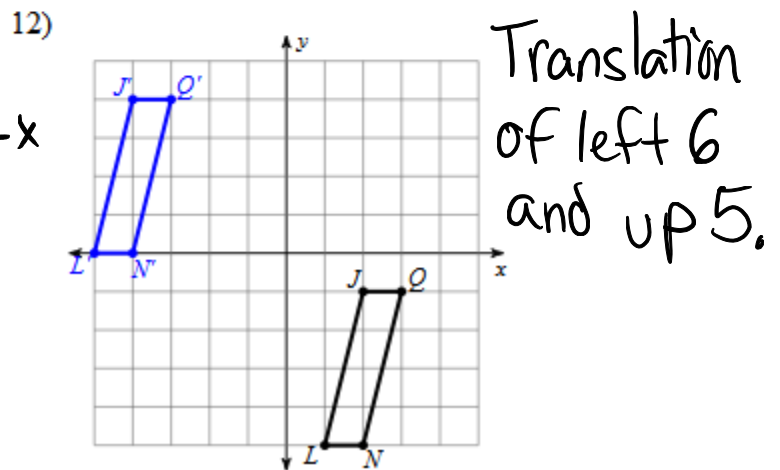
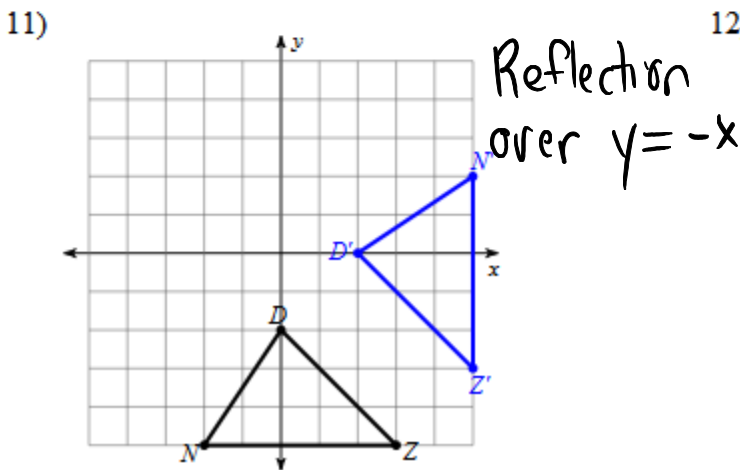
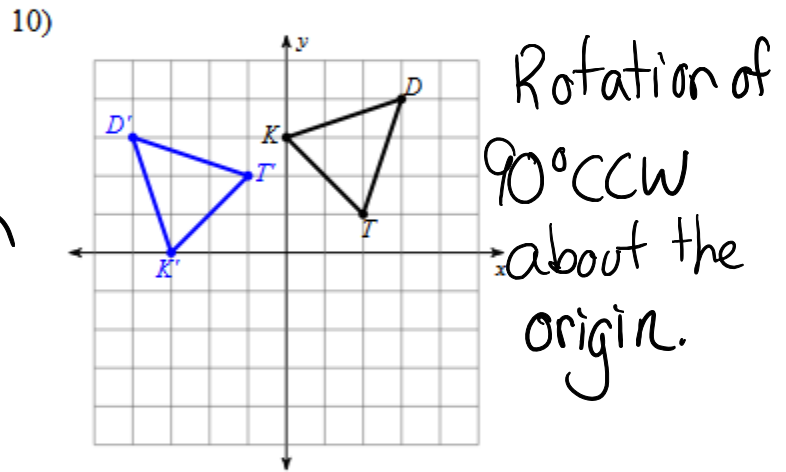
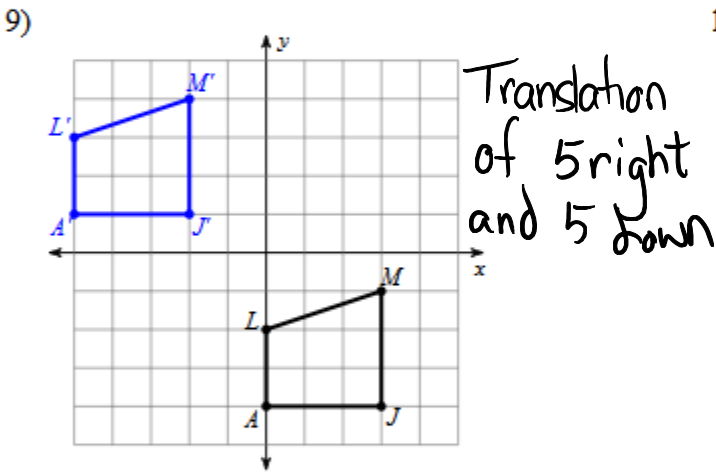
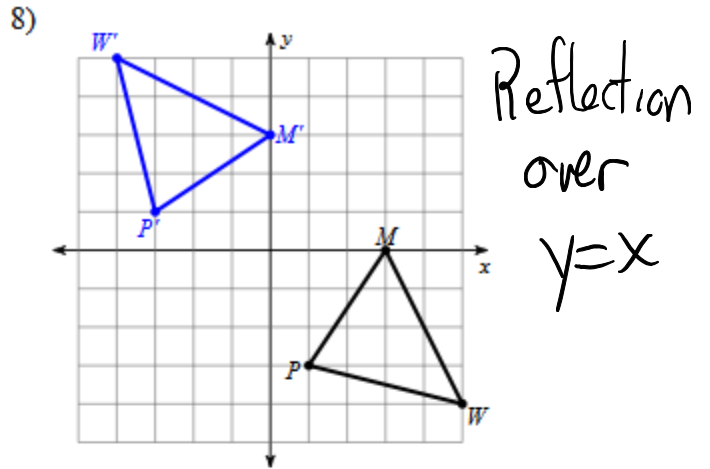
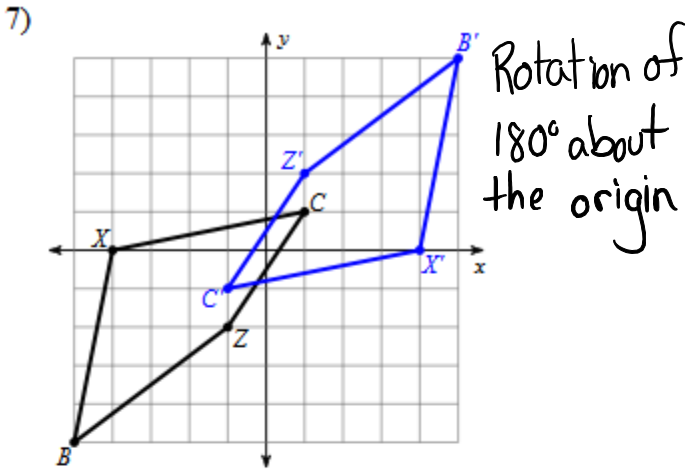
$$(a, b) \rightarrow (-a, -b) \rightarrow (-a-6, -b-2) \rightarrow (a-6, b-2)$$



Coordinate Notation:

$$(a, b) \rightarrow (b, a) \rightarrow (b-4, a+2) \rightarrow (-a-2, b-4)$$

Identify the transformation shown. For a challenge, also find a sequence of transformations for 7, 8, 10, 11.



13. How can you use the generic coordinates of single transformations to create the same image after a sequence of transformations?

By combining sequences of transformations to a single generic coordinate then comparing to the single transformation.