

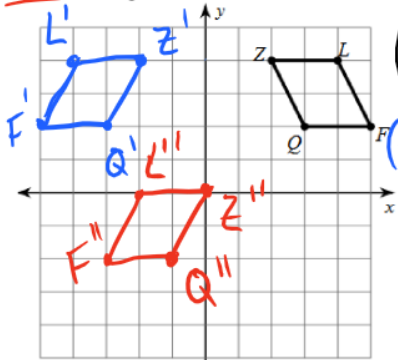
Sequence of Transformations

Name _____

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

1) Reflect across the y-axis.

Translate it 2 right and 4 down.



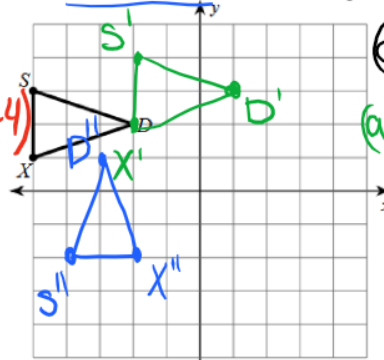
$(a,b) \rightarrow (-a,b)$
 $(-a,b) \rightarrow (-a+2, b-4)$

Coordinate Notation:

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

2) Translate right 3 and up 1.

Rotate 90° CCW about the origin.



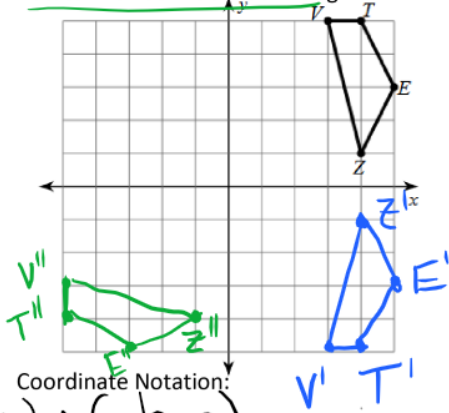
$(a,b) \rightarrow (a+3, b+1)$
 $(a+3, b+1) \rightarrow (-b-1, a+3)$

Coordinate Notation:

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

3) Reflect across the x-axis.

Rotate 270° CCW about the origin.

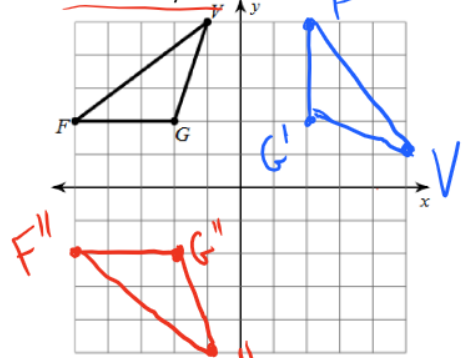


Coordinate Notation:

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

4) Rotate 90° CW about the origin.

Reflect over $y=-x$



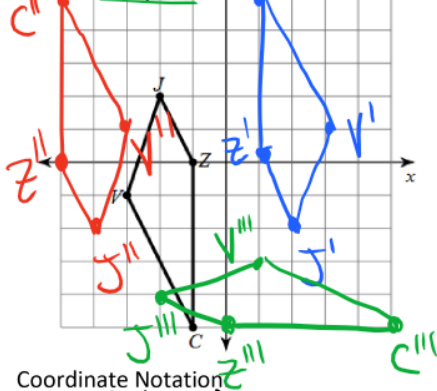
Coordinate Notation:

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

5) Rotate 180° about the origin.

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

Reflect over $y=x$.



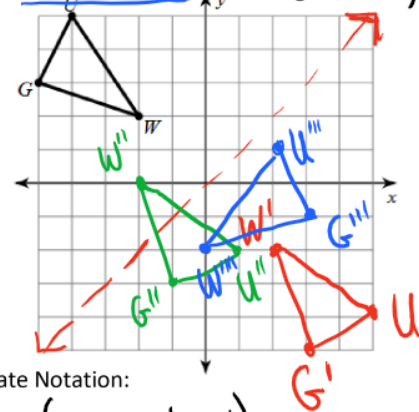
Coordinate Notation:

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

6) Reflect across $y=x$.

Translate left 4 and up 2.

Rotate 90° CCW about the origin.



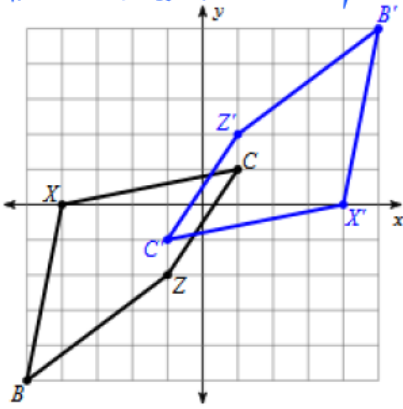
Coordinate Notation:

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

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

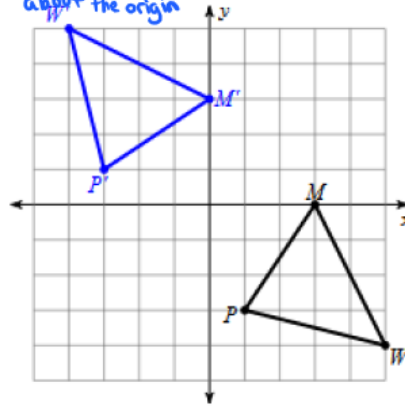
1. Rotation of 180° about the origin.
or

7) 1. Reflect over x . 2. Reflect over y .



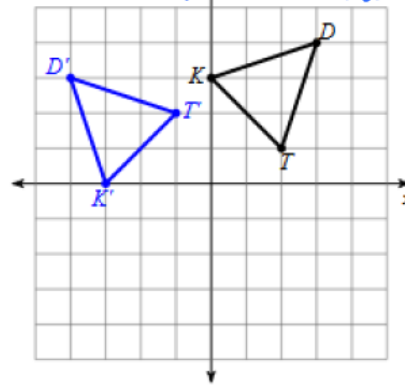
1. Reflect over $y=x$
or

8) 1. Rotate 90° ccw about the origin 2. Reflect over y -axis

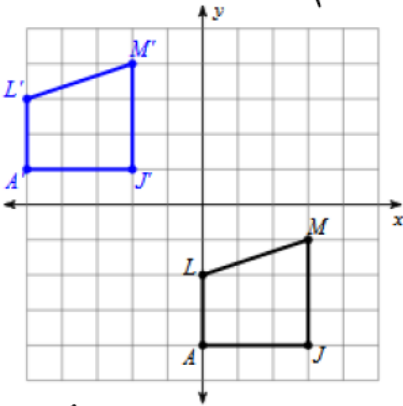


1. Rotate 90° ccw about the origin
or

10) 1. Reflect over x -axis 2. Reflect over $y=x$

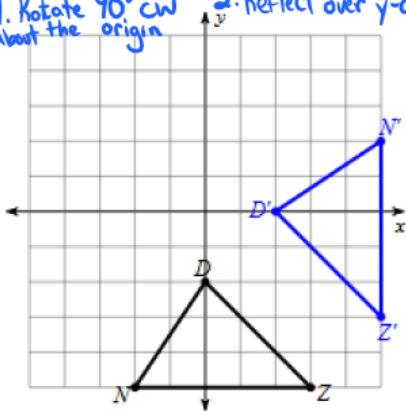


9) Translate left 5 and up 5

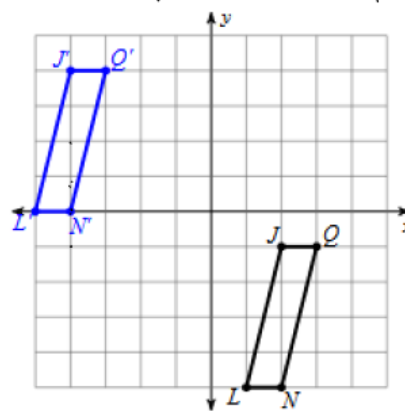


1. Reflect over $y=-x$
or

11) 1. Rotate 90° cw about the origin 2. Reflect over y -axis.



12) 1. Translate left 6 and up 5



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

By putting the sequence of transformations into one generic coordinate, then comparing that to the shortcuts for transformations.