Hour: \_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Geometry 3Tri: Compositions of Transformations**

Describe the transformation using the notation , where *P*, *Q*, *R*, *U* and *V*  are transformations, defined as follows.

*P*: translation:  *Q*: translation: 

*R*: translation: Right 3, Down 2 *U*: reflection in the *x*-axis

*V*: reflection in the *y*-axis

**Example**: *UR* 

*UR* can be described as the transformation .

1. *RR*
2. *RRR*
3. *RRRR*
4. *PQ*
5. *QP*
6. *PU*
7. *UP*
8. *QU*
9. *UV*

**Now use the above transformations to find the image of the given point.**

1. *RV*: 
2. *VR*: 
3. *QUV*: 
4. *PVQ*: 

**Geometry 3Tri: Reflections and Rotations**



1. Use the diagram to name the image of  after each transformation.
   1. Reflection in the *x*-axis.
   2. Reflection in the *y*-axis.
   3. Reflection in the *y*-axis, followed by a reflection in the *x*-axis.
   4. Rotated 90° clockwise about the origin.
2. Decide whether the statement is *true* or *false*.
   1. If  is reflected in the line , then .
   2. If  is reflected in the line , then .
   3. If  is reflected in the line , then .
   4. If  is reflected in the line , then .
3. Sketch the figure, if possible.
   1. A quadrilateral with exactly two lines of symmetry.
   2. A hexagon with exactly two lines of symmetry.
4. Name the segment or triangle that represents the image.



* 1. 90° clockwise rotation of about *P*.
  2. 90° clockwise rotation of about *P*.
  3. 90° counterclockwise rotation of about *P*.
  4. 180° counterclockwise rotation of about *P*.
  5. 180° clockwise rotation of about *P*.
  6. Reflection of  in the line .
  7. Reflection of  in the line .