Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Unit 8 – Composition of Transformations 2**

Monica

Geometry Period:\_\_\_\_

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

**Directions:** All of the questions below are old Regents questions. Read each of the questions carefully and answer the question being asked. You must show all necessary work to receive a “MS” rating! **Use a pencil to plot all points and figures, and use a ruler to connect the points!!!**

1) Triangle *ABC* has coordinates , , and . Given the transformations *T*, *U*, and *W* described below:

*T*: 

*U*: 

*W*:

*a*. Graph  and graph and state the coordinates of its image , after transformation *T*.

*b*. Graph and state the coordinates of , the image of  after transformation *U*.

*c*. Graph and state the coordinates of , the image of  after transformation *W*.

*d*. Which transformation, *T*, *U*, or *W*, is *not* an isometry? Why?

*e*. Which transformation, *T*, *U*, or *W*, does *not* preserve orientation?



2) The coordinates of the vertices of  are , **, and .

*a.* On the graph below, draw and label *.*

*b.* Graph and state the coordinates of *,* the image of  after a reflection over the line .

*c.* Graph and state the coordinates of *,* the image of  after a reflection in the *x*-axis.

*d.* Graph and state the coordinates of *,* the image of  after the transformation .



3) a. Graph and label the following equations, *a* and *b,* on the accompanying set of coordinate axes.



b. Describe the composition of transformations performed on *a* to get *b*.



4) *a.* On the accompanying grid, graph the equation  in the interval  and label it *a*.

*b.* On the same grid, sketch the image of *a* under  and label it *b*.



5) A shape to be used in a computer game is placed on a Cartesian coordinate plane. The equation of the shape is . On the accompanying grid, graph the shape and label it *a*. In the game, the shape is moved under the composition . Draw this image, label it *b*, and state its equation.



6) On the graph below, draw and label , whose vertices are , **, and .On the same set of axes, graph and state the coordinates of

*a.* *,* the image of  after .

*b.* *,* the image of  after .

*c.* *,* the image of  after .

Based upon these graphs, write a single transformation that shows the composition .

