**Concepts and Vocabulary**

**Four Types of Transformations**: Translations, Rotations, Reflections, and Dilations.

**Congruent Figures** have the same size and shape. Translations, rotations, and reflections create figures that are congruent.

**Similar Figures** have the same shape. Dilations create figures that are similar but not congruent.

**Practice Questions**

 \_\_\_\_ 1) The vertices of a rectangle are R (2, 4), S (5, -1), T (-7, 7), and U (-4, 6). After a translation, R’ is the point (3, -1). Write the translation rule and the coordinates of U’.

 A) (x,y) -> (x + 1, y -5 ); (-3, 1) B) (x,y) -> (x - 1, y - 5 ); (-3, 1)

 C) (x,y) -> (x + 1, y + 5 ); (-3,11) D) (x,y) -> (x - 1, y + 5 ); (-5, 11)

\_\_\_\_ 2) Write a rule to describe the transformation that is a reflection in the y-axis.

 A) (x, y)→(-x, -y) B) (x, y)→(y, x) C) (x, y)→(-x, y) D) (x, y)→(x, -y)

 \_\_\_\_ 3) Which rules describe the translation that is 5 units to the right and 3 units up?

 A) (x,y) -> (x +5, y -3) B) (x,y) -> (x -5, y -3)

 C) (x,y) -> (x -5, y + 3) D) (x,y) -> (x + 5, y + 3)

4) What type of transformation is shown in the image below?



A. Reflection in the x-axis B. Reflection in the y-axis

C. Rotation of 90 degree counterclockwise D. Dilation with a scale factor of -1

5) If ∆QRS is dilated with a scale factor of 4 what are the coordinates of the image points Q’, S’ and R’?



Q’ \_\_\_\_\_\_\_\_\_\_

S’ \_\_\_\_\_\_\_\_\_\_\_

R’\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_ 6) Sammy plots the point (10, 3) on a coordinate grid. He reflects this point over the x-axis, then over the y-axis. What are the coordinates of the image point after both reflections?

 A) (-10, 3) B) (-3, 10) C) (-10, -3) D) (10, -3)

7) What would be the coordinates of the images of points A,B,C, and D from the trapezoid below after a reflection over the line y=x? Graph the image of ABCD under this reflection.



A’ \_\_\_\_\_\_\_\_\_\_

B’ \_\_\_\_\_\_\_\_\_\_\_

D’\_\_\_\_\_\_\_\_\_\_\_\_

C’ \_\_\_\_\_\_\_\_\_\_\_

8) What would be the coordinates of point D’, the image of point D from the trapezoid above, after a rotation of 90 degrees counterclockwise about the origin?

D’: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Unit 2 Test Review: Spiral Questions from Unit 1 Solutions**

1- A 2- C 3- D 4-A 5. Q’(-20,-4) / S’(-20,-16) / R’ (-8,-16)

6. C 7. A’(6,2) B’(6,4) D’(4,6) C’(4,2)

8. D’(-4,6)