Name:_____   Date:_____

8.G.4

_____1. Rectangle *R* undergoes a dilation with scale factor 0.5 and then a reflection over the
     y- axis. The resulting image is Rectangle *S*. Which statement about Rectangles *R* and *S*
     is true?   (2014)

   A. They are congruent and similar.   C. They are congruent but not similar.

   B. They are similar but not congruent.   D. They are neither congruent nor similar.

_____2. A series of transformations on quadrilateral S resulted in quadrilateral T.   (2016)

   - The angle measures of quadrilateral T are congruent to those of quadrilateral S.

   - The side lengths of quadrilateral T are twice as long as those of quadrilateral S.

   Which transformation on quadrilateral S must be included to result in quadrilateral T?

   A. dilation   B. rotation   C. reflection   D. translation

_____3. The vertices of a triangle are located at F (-4, -2), G (2, 2), and H (0, -4) A sequence of
     transformations to triangle FGH results in triangle F'G'H', as shown below.
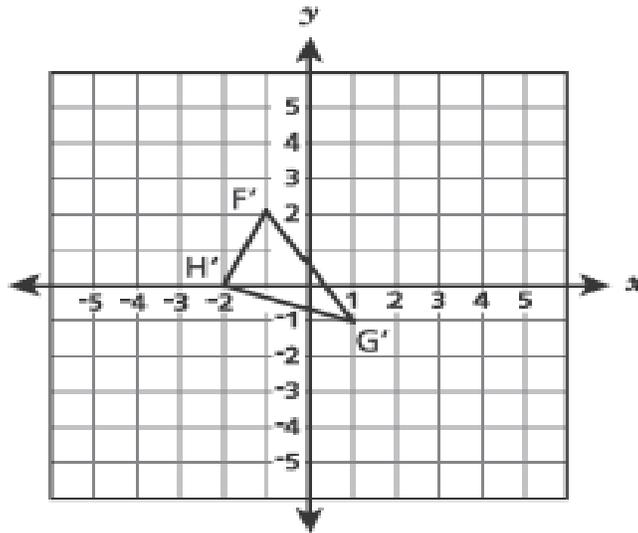
   Which sequence of transformations to triangle FGH results in triangle F'G'H'?   (2017)
                                                                                      no calculator
   A. a 90° clockwise rotation about the origin, then a dilation by a scale factor of 2 with a
       center of dilation at the origin.
   B. a 90° counterclockwise rotation about the origin, then a dilation by a scale factor of 2
       with a center of dilation at the origin.
   C. a 90° counterclockwise rotation about the origin, then a dilation by a scale factor of
       ½ with a center of dilation at the origin.
   D. a 90° clockwise rotation about the origin, then a dilation by a scale factor of ½ with
       a center of dilation at the origin.

_____4. Acute ΔABC is rotated about a point and then dilated by a scale factor of ½ to produce ΔA'B'C'. Which statement correctly compares ΔA'B'C' to ΔABC ?   (2017)

      A. The angle measures and side lengths of ΔA'B'C' are half the size of those of ΔABC.

      B. The angle measures of ΔA'B'C' are the same as those of ΔABC, but the side lengths of ΔA'B'C' are half the size of those of ΔABC.

      C. The angle measures of ΔA'B'C' are the same as those of ΔABC, but the side lengths of ΔA'B'C' are twice the size of those of ΔABC.

      D. The angle measures of ΔA'B'C' depend on the angle of rotation, but the side lengths of ΔA'B'C' are half the size of those of ΔABC.

_____5. Two transformations are performed on a figure on a coordinate plane. The first transformation is a translation 8 units to the left. Which second transformation will result in an image that is similar to, but not congruent to, the original figure?   (2017)

      A. a clockwise rotation of 90° about the center
      B. a clockwise rotation of 180° about the center
      C. a dilation by a scale factor of 1 with the origin as the center of dilation
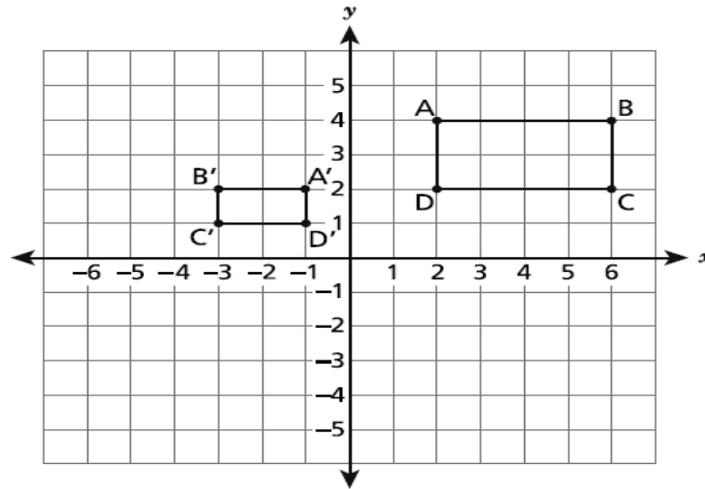   D. a dilation by a scale factor of ½ with the origin as the center of dilation

_____6. Triangle BCD is rotated 180° clockwise and then dilated by a factor of 4 centered at the origin. The resulting image is triangle B'C'D'. Which statement about the two triangles is true? (2018)

      A.   The area of ΔBCD is 4 times the area of ΔB'C'D'.

      B. The perimeter of ΔBCD is 4 times the perimeter of ΔB'C'D'.

      C. The corresponding sides of ΔBCD and ΔB'C'D' are congruent.

      D. The corresponding angles of ΔBCD and ΔB'C'D' are congruent.

_____7. Triangle P undergoes a sequence of transformations resulting in triangle Q. Which sequence of transformations could be used to show that triangle Q is similar but not congruent to triangle P?   (2022)

      A. a reflection followed by a translation   C. a reflection followed by a rotation

      B. a rotation followed by a reflection   D. a translation followed by a dilation

_____8. Rectangle A'B'C'D' is similar to rectangle ABCD, as shown on the coordinate plane below.

Which sequence of transformations maps rectangle ABCD onto rectangle A'B'C'D' ?

(2019 and 2021)

A. a translation 8 units to the left, then a dilation by a scale factor of 1/2 with a center of dilation at the origin
B. a reflection over the y axis, then a dilation by a scale factor of 1/2 with a center of dilation at the origin
C. a dilation by a scale factor of 1/2 with a center of dilation at the origin, then a 90° counterclockwise rotation about the origin
D. a 90° counterclockwise rotation about the origin, then a dilation by a scale factor of 1/2 with a center of dilation at the origin

9. Triangle *ABC* was rotated 90° clockwise. Then it underwent a dilation centered at the origin with a scale factor of 4. Triangle *A'B'C'* is the resulting image.   (2013)

What parts of △ *A'B'C'* are congruent to the corresponding parts of the original triangle?
Explain your reasoning.

_____

_____

_____

Compare the perimeters of △ *ABC* and △ *A'B'C'*. Explain your reasoning.

_____

_____

10. Quadrilateral *ABCD* is graphed on a coordinate plane. (2015)

• Abby reflected *ABCD* over the *x*-axis and then rotated it 90° clockwise about the origin. She labeled the final image *EFGH*.

• Manny dilated *ABCD* by a scale factor of 3 and then translated the resulting figure 2 units left. He labeled the final image *PQRS*.

Identify a pair of quadrilaterals from the three quadrilaterals *ABCD*, *EFGH*, and *PQRS* that are congruent.
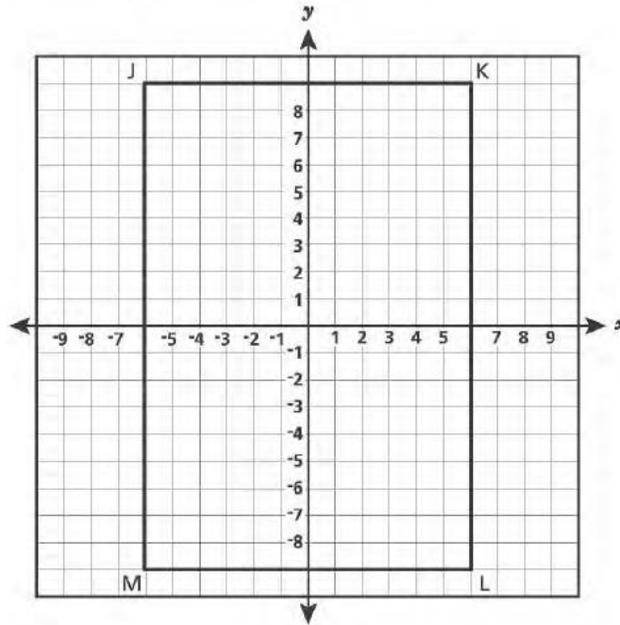
Answer _____

Identify a pair of quadrilaterals from the three quadrilaterals *ABCD*, *EFGH*, and *PQRS* that are similar but not congruent.

Answer_____

Describe a transformation on Abby's quadrilateral *EFGH* that would make the resulting image *E'F'G'H'* congruent to Manny's quadrilateral *PQRS*.

_____

_____

_____

_____

11. Rectangle JKLM is shown on the coordinate grid below.   (2016)

Rectangle JKLM undergoes a sequence of transformations, resulting in rectangle J'K'L'M'.

The length of side K'L' is 6 units. The coordinates of vertex K' are (-3, 2), and the coordinates of vertex M' are (3, - 2).

Describe a sequence of transformations to rectangle JKLM that would result in rectangle J'K'L'M'.

Show your work.

Answer

_____

_____

_____