1. Which transformation can map the letter S onto itself?
   A. Dilation
   B. Translation
   C. Reflection
   D. Rotation

2. A parallelogram has vertices at (0, 0), (0, 6), (4, 4), and (4, –2).

3. A regular pentagon is centered about the origin and has a vertex at (0, 4).

4. The figure shows two perpendicular lines, s and r, intersecting at point P in the interior of a trapezoid. Line r is parallel to the bases and bisects both legs of the trapezoid. Line s bisects both bases of the trapezoid.

Which transformation will always carry the figure onto itself?
Select ALL that apply.
- a reflection across line r
- a reflection across line s
- a rotation of 90° clockwise about point P
- a rotation of 180° clockwise about point P
- a rotation of 270° clockwise about point P

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1. Which sequence of transformations maps ΔABC to ΔRST?
   A. Reflect ΔABC across the line x = –1. Then translate the result 1 unit down.
   B. Reflect ΔABC across the line x = –1. Then translate the result 5 units down.
   C. Translate ΔABC 6 units to the right. Then rotate the result 90° clockwise about the point (1, 1).
   D. Translate ΔABC 6 units to the right. Then rotate the result 90° counterclockwise about the point (1, 1).
2. In the diagram below, congruent figures 1, 2, and 3 are drawn.

Which sequence of transformations maps figure 1 onto figure 2 and then figure 2 onto figure 3?
A. a reflection followed by a translation
B. a rotation followed by a translation
C. a translation followed by a reflection
D. a translation followed by a rotation

Use the information provided to answer Questions 3 and 4

Quadrilaterals ABCD and EFGH are shown in the coordinate plane.

3. Quadrilateral EFGH is the image of ABCD after a transformation or sequence of transformations. Which could be the transformation or sequence of transformations? Select ALL that apply.

□ a translation of 3 units to the right, followed by a reflection across the x-axis
□ a rotation of 180° about the origin
□ a translation of 12 units downward, followed by a reflection across the y-axis
□ a reflection across the y-axis, followed by a reflection across the x-axis
□ a reflection across the line with equation y = x

4. Quadrilateral ABCD will be reflected across the x-axis and then rotated 90° clockwise about the origin to create quadrilateral A'B'C'D'. What will be the y-coordinate of B'?
3. A sequence of transformations maps rectangle ABCD onto rectangle A"B"C"D" as shown in the diagram below.

Which sequence of transformations maps ABCD onto A'B'C'D' and then maps A'B'C'D' onto A"B"C"D"?
A. a reflection followed by a rotation
B. a reflection followed by a translation
C. a translation followed by a rotation
D. a translation followed by a reflection

4. Octagon PQRSTVWZ is a regular octagon with its center at point C.

Which transformations will map octagon PQRSTVWZ onto itself?
Select ALL that apply.
- Reflecting over QV.
- Reflecting over RW.
- Reflecting over TZ.
- Rotating 45° clockwise around point Z.
- Rotating 135° clockwise around point C.
- Rotating 90° counterclockwise around point C.

5. Triangle ABC is graphed in the xy-coordinate plane, as shown.

Part A

Triangle ABC is reflected across the x-axis to form triangle A'B'C'. What are the coordinates of C' after the reflection?
A. (-6, 4)
B. (3, -2)
C. (4, -6)
D. (6, -4)

Part B

Triangle ABC in the xy-coordinate plane will be rotated 90° counterclockwise about point A to form triangle A''B''C''. Which graph represents A''B''C''?