Transformations

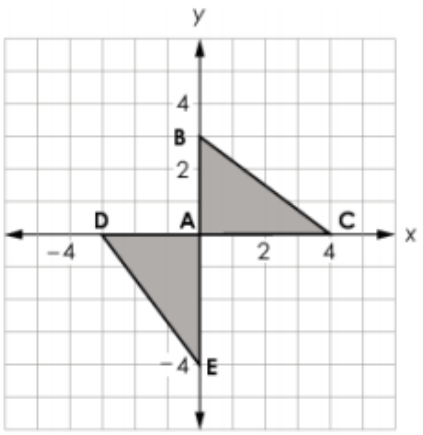
1. The vertices of ΔPQR are $P(5,3)$, $Q(-7,2)$, $R(0,-8)$. If ΔPQR is transformed following the rule $(x,y) \rightarrow (x-9, y+5)$, what are the coordinates of the vertices of $\Delta P'Q'R'$?

   A. $P(-4,3)$, $Q(-16,2)$, $R(-9,-8)$
   B. $P(-4,8)$, $Q(-16,7)$, $R(-9,-3)$
   C. $P(3,-4)$, $Q(2,-16)$, $R(-8,-9)$
   D. $P(8,-4)$, $Q(7,-16)$, $R(-3,-9)$

2. Which transformation on the coordinate plane preserves only the angle measure?

   A. Reflection across the line $y = -3x$.
   B. Rotation of $270°$ clockwise about the origin.
   C. Dilation with scale factor of 1 not centered in the origin.
   D. Dilation with scale factor of 1.5 centered in the origin.

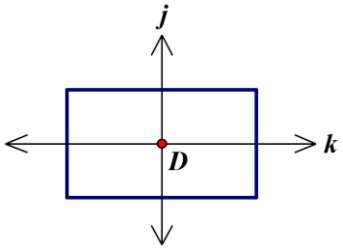
3. Triangle ABC and triangle ADE are shown.



   Select all of the transformations that could be performed to carry triangle ABC onto triangle ADE.

   A. a reflection across the line $y = -x$.
   B. a reflection across the x-axis, and then a reflection across the y-axis
   C. a rotation of 90 degrees clockwise about the origin, and then a reflection across the y-axis.
   D. a rotation of 90 degrees clockwise about the origin, and then a reflection across the x-axis.
   E. a rotation of 180 degrees clockwise about the origin and then a reflection across the line $y = -x$.

4. The figure below shows two perpendicular lines j and k intersecting at point D in the interior of a rectangle. Line j bisects both the top and bottom sides of the rectangle. Line k bisects both the left and right sides of the rectangle. Which transformation will always carry the figure onto itself? Select All that apply.



   A. a reflection across line j.
   B. a reflection across line k.
   C. a rotation of 90° clockwise about point D.
   D. a rotation of 180° clockwise about point D.
   E. a rotation of 270° clockwise about point D.

Transformations

5. If triangle ABC with coordinates $A(1,1)$, $B(2,1)$, $C(2,2)$ is reflected across the x-axis and then dilated by a factor of 3 about the origin, which set of coordinates represents $\Delta A'B'C'$?

   A. $A'(1,-1)$, $B'(2,-1)$, $C'(2,-2)$

   B. $A'(-1,1)$, $B'(-2,1)$, $C'(-2,2)$

   C. $A'(-3,3)$, $B'(-6,3)$, $C'(-6,6)$

   D. $A'(3,-3)$, $B'(6,-3)$, $C'(6,-6)$