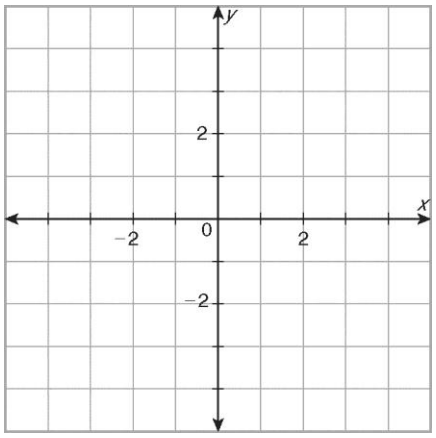
CC Geometry HW#_____
Worksheet 9-4 and Review

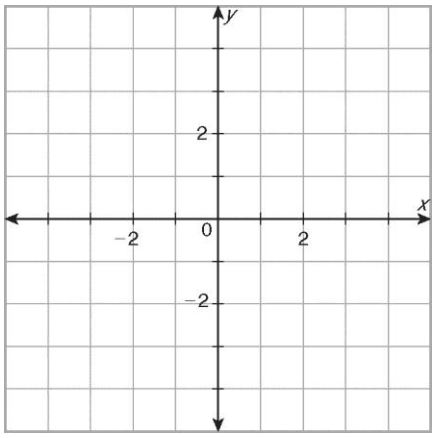
Name_____

Date_____Per_____Col_____

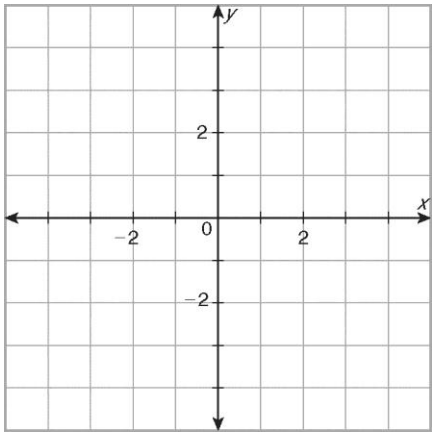
1. $\triangle LMN$ has vertices $L(3, 4)$, $M(4, 2)$, and $N(1, 2)$. Rotate $\triangle LMN$ 180° about the origin and then translate it along the vector $\langle 0, 4 \rangle$. Label the final image $\triangle L'M'N'$.



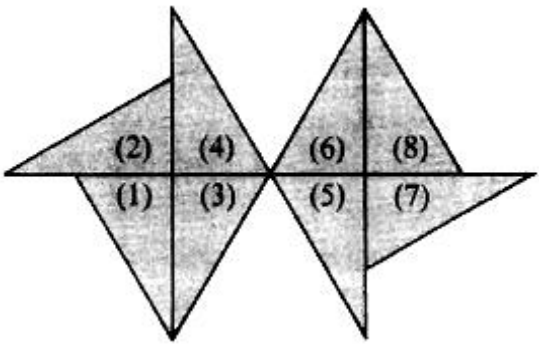
2. $\triangle PQR$ has vertices $P(1, -1)$, $Q(4, -1)$, and $R(3, 1)$. Reflect $\triangle PQR$ across the x-axis and then reflect it across $y = x$. Label the final image $\triangle P'Q'R'$.



3. $\overline{AB}$ has endpoints $A(4, -2)$ and $B(1, 0)$. Rotate $\overline{AB}$ 90° about the origin and then reflect it across the vertical line $x = -1$. Label the final image $\overline{A'B'}$.



4. State whether the mapping is an example of a reflection, translation, or rotation.



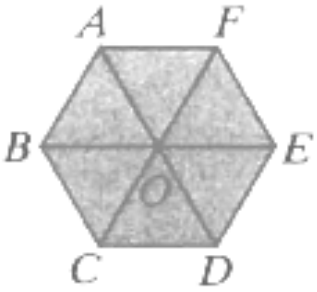
a. $\Delta(1) \rightarrow \Delta(2)$ _____

b. $\Delta(1) \rightarrow \Delta(5)$ _____

c. $\Delta(5) \rightarrow \Delta(8)$ _____

d. $\Delta(4) \rightarrow \Delta(6)$ _____

5. The diagonals of regular hexagon *ABCDEF* form six equilateral triangles as shown. Complete each statement.



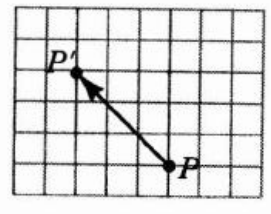
a. A rotation of 120° about point *O* maps *A* → _____.

b. A rotation of 180° about point *O* maps *C* → _____.

c. What angle of rotation about point *O* maps *E* → *D* ?_____

d. A reflection across $\overline{FC}$ maps *B* → _____.

6. a. Name the vector shown. _____



b. Give the component form of the vector. _____

c. Give the coordinate form of the translation $(x, y) \rightarrow$ (_____, _____).

7. Give the image of the point after each transformation without graphing.

a. Reflect (-5, 2) about the *x*-axis. _____

b. Reflect (-5, 2) about the *y*-axis. _____

c. Reflect (-5, 2) about the line $y = x$. _____

d. Translate (-5, 2) along the vector ⟨ 18, -9 ⟩. _____