Geometry (E) Name: ____

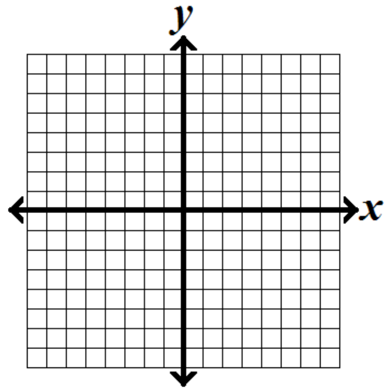
Chapter 4 Review Period: _____

1. The vertices of $\triangle ABC$ are $A(2, 3)$, $B(-1, 2)$, and $C(0, 1)$. Translate $\triangle ABC$ using the vector $\langle 1, -4 \rangle$. Graph $\triangle ABC$ and its image, and list the new coordinates.

$A'(\quad , \quad)$

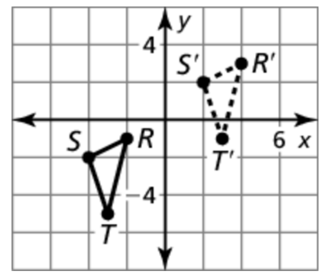
$B'(\quad , \quad)$

$C'(\quad , \quad)$



2. Find the component form of the vector that translates $A(3, -2)$ to $A'(-1, 4)$.

3. Write a rule for the translation of $\triangle RST$ to $\triangle R'S'T'$.

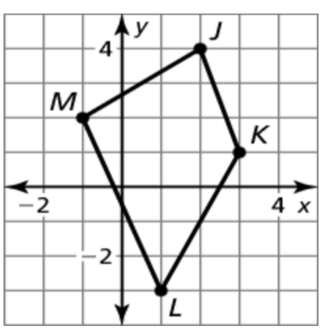


In Exercises 4 and 5, use the translation $(x, y) \rightarrow (x+1, y-3)$ to find:

4. Q' given $Q(5, 9)$

5. M given $M'(-3, -8)$

6. Graph the image of polygon JKLM after a $270°$ CCW rotation about the origin. List the coordinates of the image.



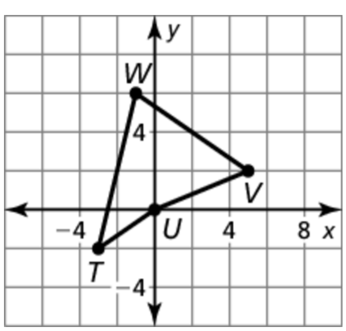
$J'(\quad , \quad)$

$K'(\quad , \quad)$

$L'(\quad , \quad)$

$M'(\quad , \quad)$

7. Graph the image of the figure below after a reflection over the line $x = 1$. List the coordinates of the image.



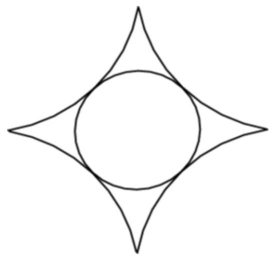
$T'(\quad , \quad)$

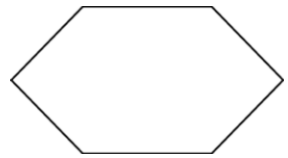
$U'(\quad , \quad)$

$V'(\quad , \quad)$

$W'(\quad , \quad)$

8. Use the figures below to answer parts (a) and (b).



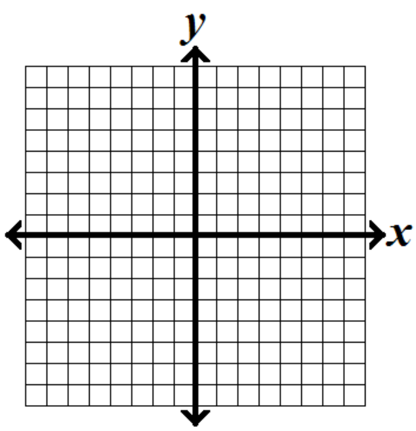


a.) For each figure above, determine the number of ***lines of symmetry*** and draw them on the figure.

b.) For each figure above, determine whether the figure has ***rotational symmetry***. If so, draw a point on the center of rotation and list the smallest degree rotation that maps the figure onto itself.

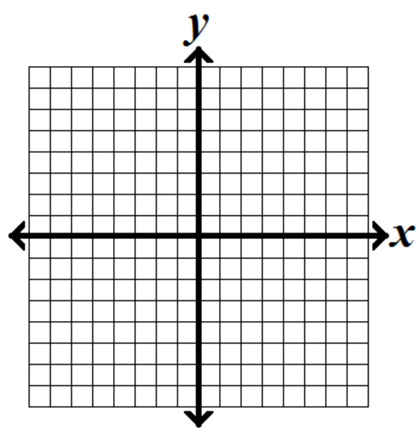
In exercises 9-11, graph the triangle with the given vertices. Then, perform the composition transformations listed. List the coordinates after each transformation.

9. $A(0, 2), B(1, -3), C(2, 4)$
- $(x, y) \rightarrow (x-5, y-3)$
- Reflect over *x*-axis



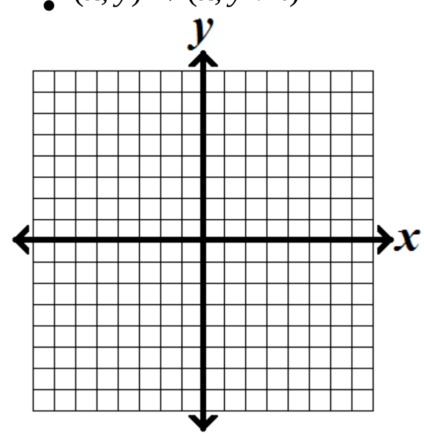
$A'(\quad,\quad)$ $A''(\quad,\quad)$
$B'(\quad,\quad)$ $B''(\quad,\quad)$
$C'(\quad,\quad)$ $C''(\quad,\quad)$

10. $D(-2, -4), E(6, 2), F(3, -5)$
- Reflect over *y*-axis
- Rotate 180° CW around origin



$D'(\quad,\quad)$ $D''(\quad,\quad)$
$E'(\quad,\quad)$ $E''(\quad,\quad)$
$F'(\quad,\quad)$ $F''(\quad,\quad)$

11. $G(4, -1), H(3, 5), J(-1, 1)$
- Reflect over line $y = -2$
- $(x, y) \rightarrow (x, y+4)$



$G'(\quad,\quad)$ $G''(\quad,\quad)$
$H'(\quad,\quad)$ $H''(\quad,\quad)$
$J'(\quad,\quad)$ $J''(\quad,\quad)$