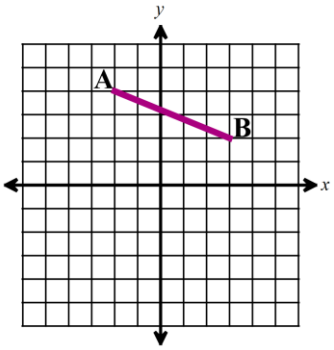
Name: _____ PER:_____

Geometry – Unit 5 TRANSFORMATIONS HOMEFUN

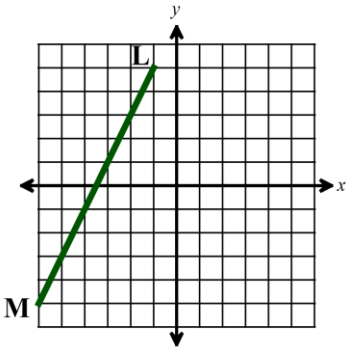
Day 1 – Reflections

Find the coordinates of the vertices of each figure after the given reflections, then graph the reflected image.

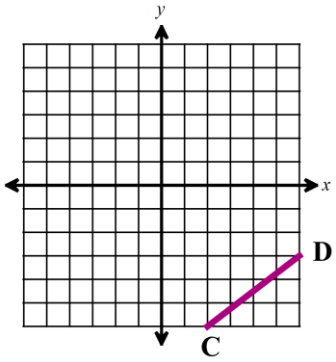
1. $x - axis$



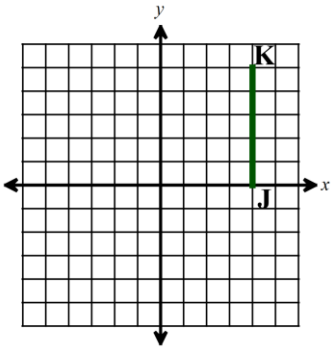
2. $y - axis$



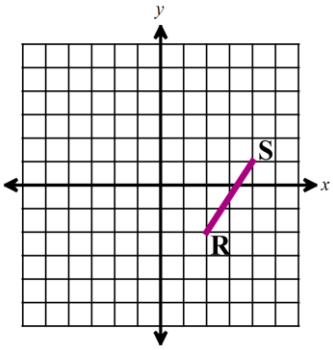
3. $y = x$



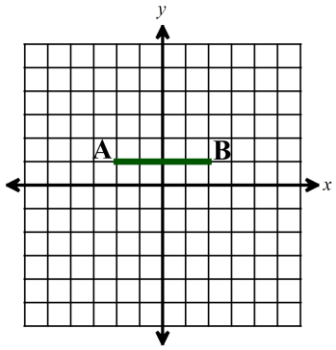
4. $y = -x$



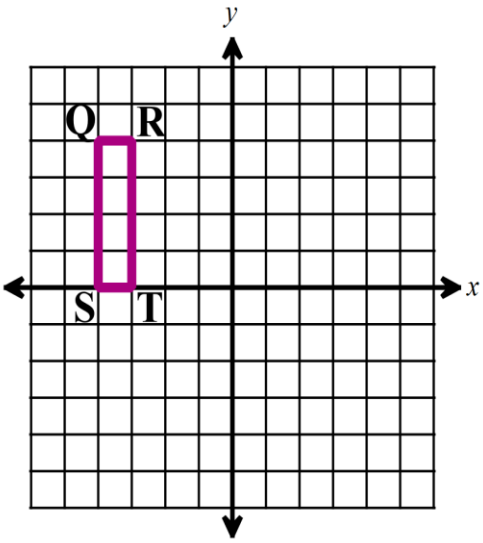
5. $y = 3$



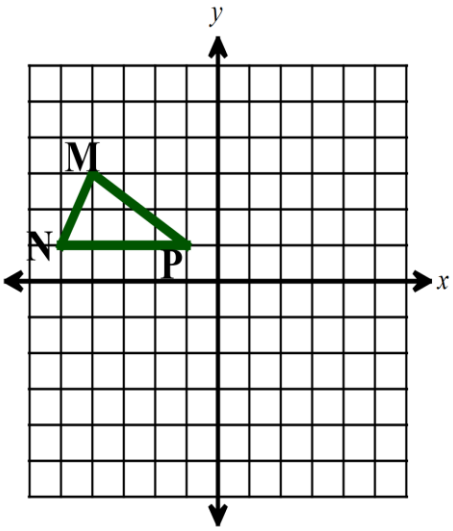
6. $x = -2$



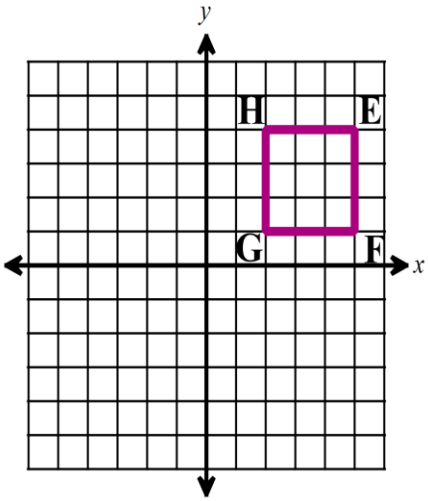
7. $x - axis$



8. $y - axis$

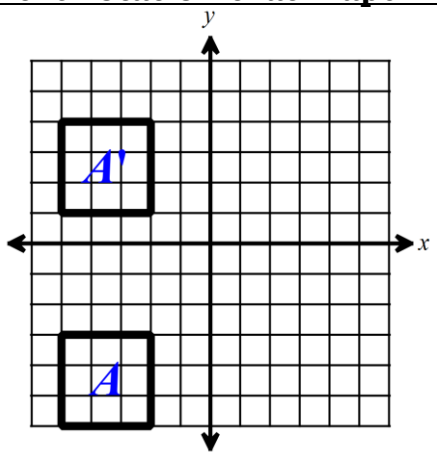


9. $y = -x$

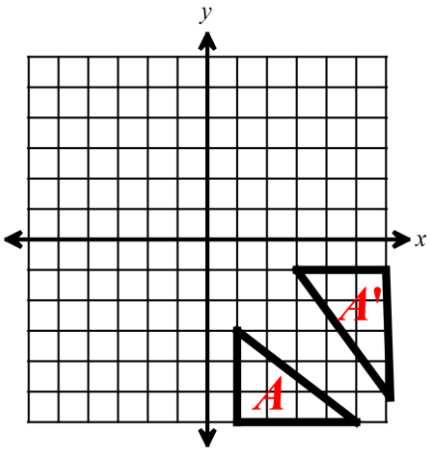


Name the rotation that maps A onto A'.

10.



11.



Given the following coordinate points, determine the transformation.

12.

$P(-1, 4)$, $Q(2, 4)$, $R(1, -1)$, $S(-1, -1)$ and $P'(1, 4)$, $Q'(-2, 4)$, $R'(-1, -1)$, $S'(1, -1)$

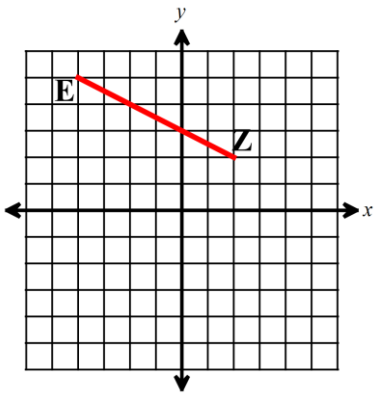
13.

$S(-3, -2)$, $T(-2, 3)$, $U(2, 2)$ and $S'(-2, -3)$, $T'(3, -2)$, $U'(2, 2)$

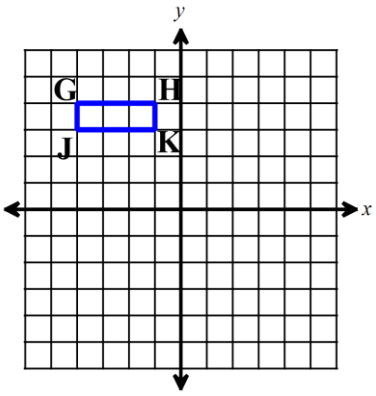
Day 2 – Translations

Find the coordinates of the vertices of each figure after the given translations, then graph the translation image.

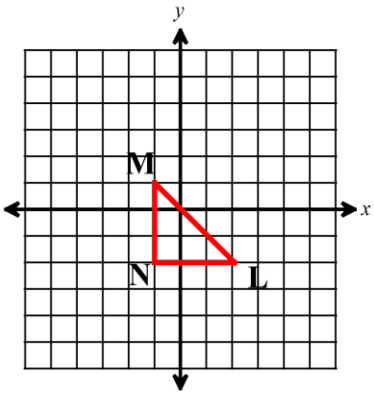
1. $(x, y) \rightarrow (x - 1, y - 4)$



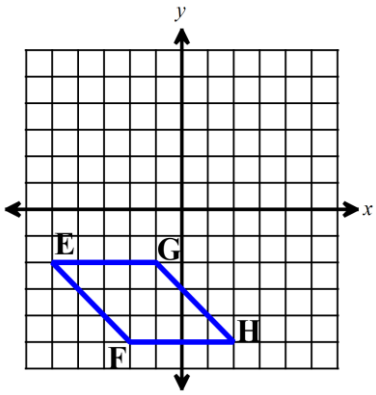
2. $(x, y) \rightarrow (x + 5, y + 1)$



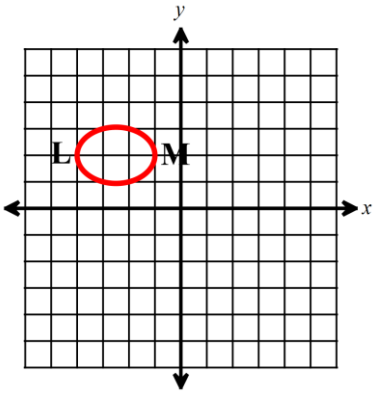
3. $(x, y) \rightarrow (x + 2, y - 3)$



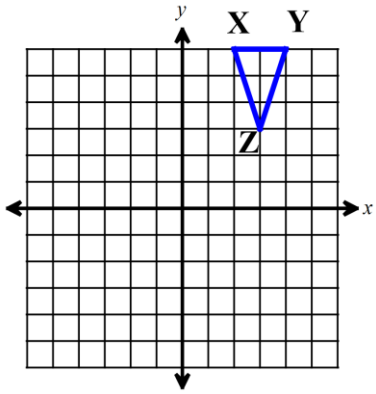
4. $(x, y) \rightarrow (x, y + 5)$



5. $(x, y) \rightarrow (x + 7, y)$

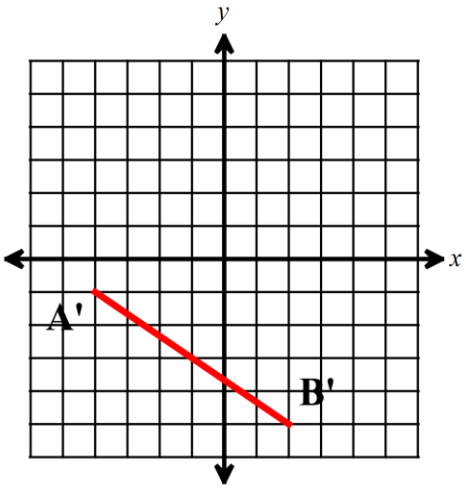


6. $(x, y) \rightarrow (x - 6, y - 6)$

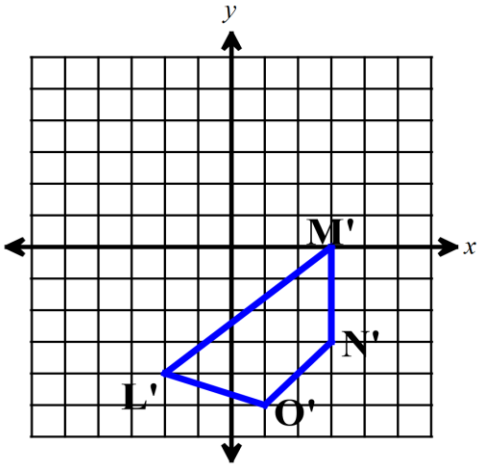


<u>Find the preimage of the shape. Work backwards</u>

7. $(x, y) \rightarrow (x + 2, y - 4)$



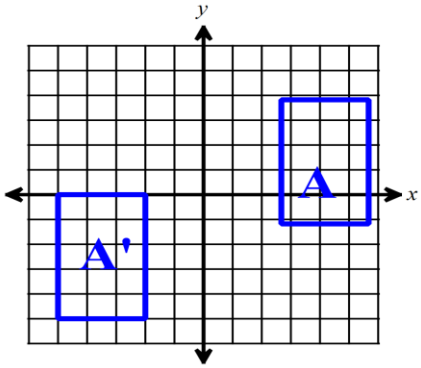
8. $(x, y) \rightarrow (x - 4, y - 4)$



9. Given the diagram below, write two different translations that maps A to A'.

1. _____

2. _____



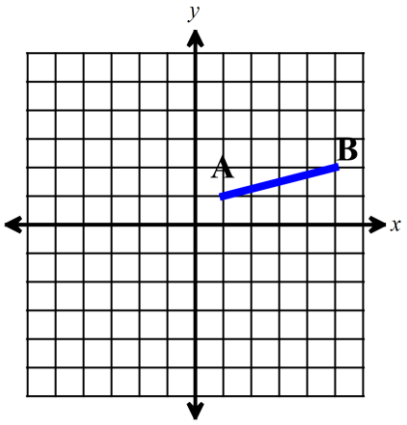
10. Which translation vector will translate the coordinate point (−4,2) down and to the right?

A. $\langle 6,-3 \rangle$ B. $\langle 6,3 \rangle$ C. $\langle -6,-3 \rangle$ D. $\langle -6,3 \rangle$

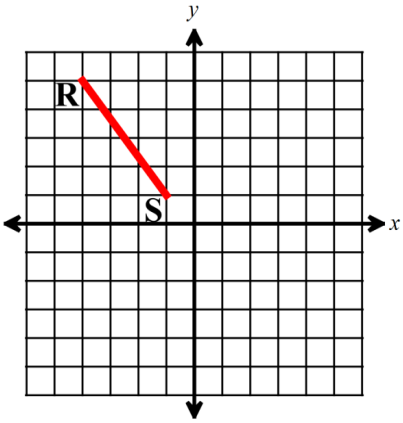
Day 3 – Rotation

<u>Rotate the following around the origin.Write the new coordinates.</u>

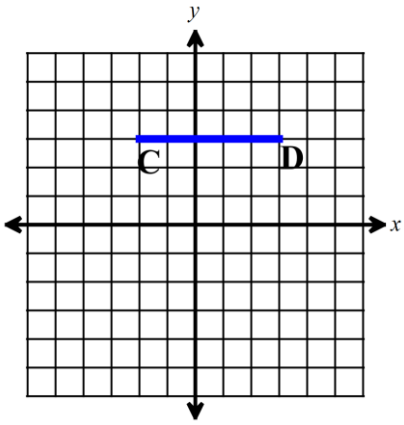
1. 90° counterclockwise



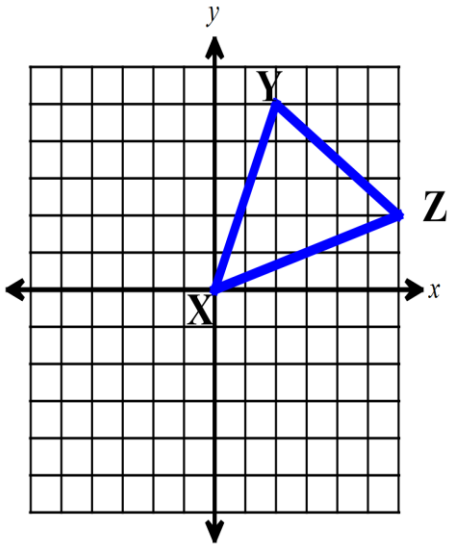
2. 270° counterclockwise



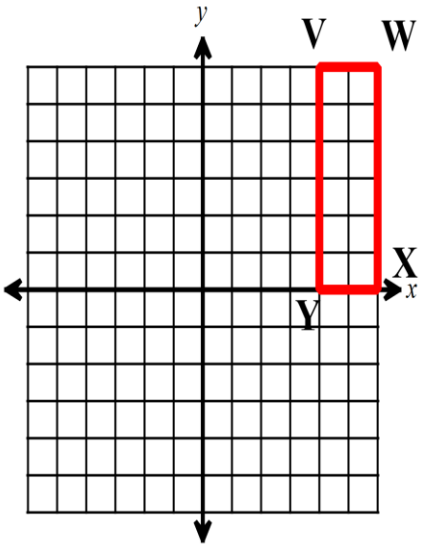
3. 180° counter-clockwise



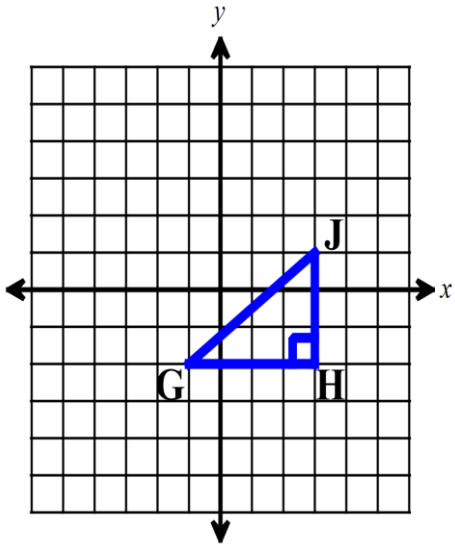
4. 90° clockwise



5. 270° clockwise

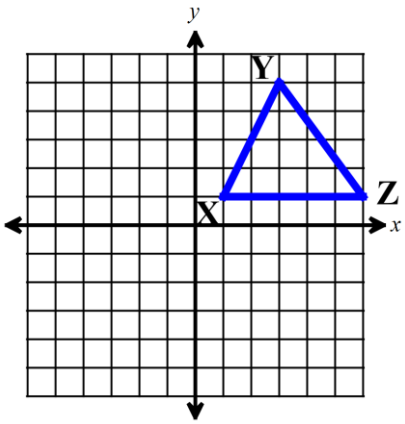


6. 180° clockwise



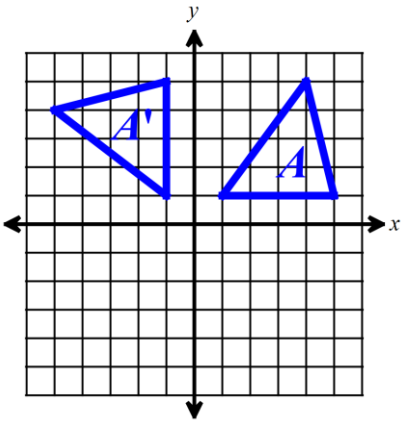
7. The point $P(-2,-5)$ is rotated 90° counterclockwise about the origin, then the image is reflected across the line $x = 3$. What is the image of P''?

8. What are the coordinates for of Y' after a 90° clockwise rotation about the origin, and Y" with translation of $(x, y) \rightarrow (x-3, y+4)$?



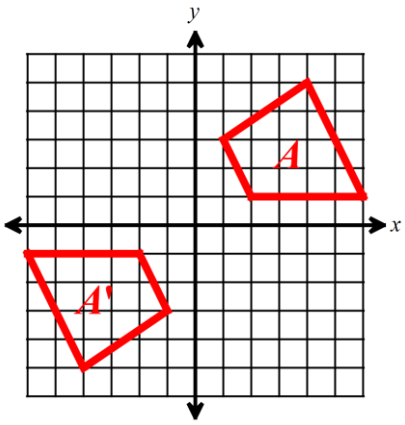
Describe the two transformation that maps A onto A'.

9.



i. _____ ii. _____

10.



i. _____ ii. _____

Day 4 – Multiple Transformations-Compositions

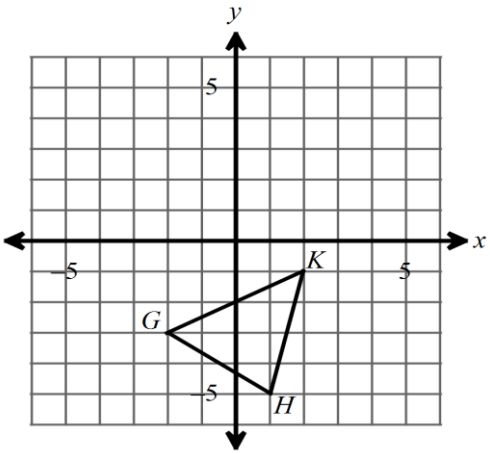
1. What are the coordinates for the image of ΔGHK after a rotation 90° counterclockwise about the origin and a translation of $(x, y) \rightarrow (x + 3, y + 2)$?

A. $K''(-2, 0), H''(2, -1), G''(0, -4)$

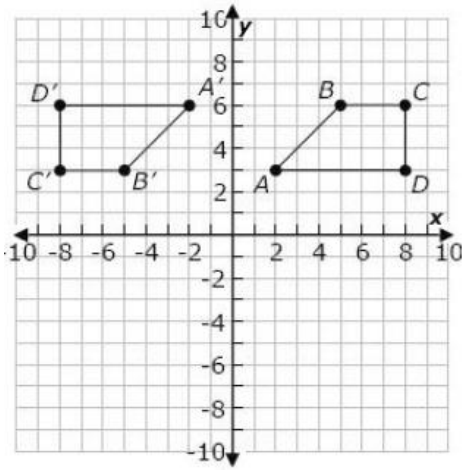
B. $K''(2, 0), H''(-2, 1), G''(0, 4)$

C. $K''(-4, -4), H''(-8, -3), G''(-6, 0)$

D. $K''(4, 4), H''(8, 3), G''(6, 0)$



2. Based on the graph below, which sequence of transformations is need to carry *ABCD* onto its image *A'B'C'D'*?



A. A 90° clockwise rotation about the origin and then a reflection over the line $y = x$.

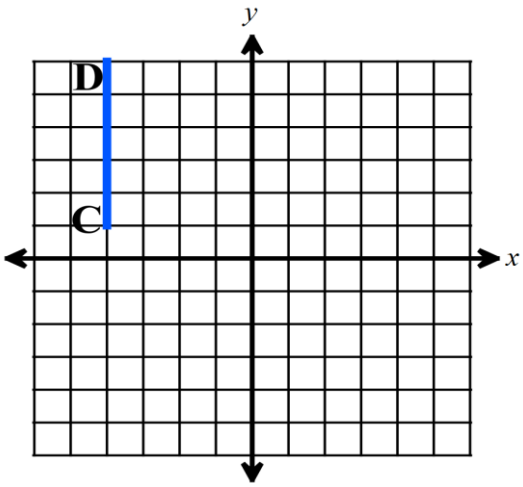
B. A reflection across the $x - axis$, and then a translation $(x, y) \rightarrow (x - 10, y + 9)$

C. A 180° clockwise rotation about the origin, and then a reflection across the $x - axis$.

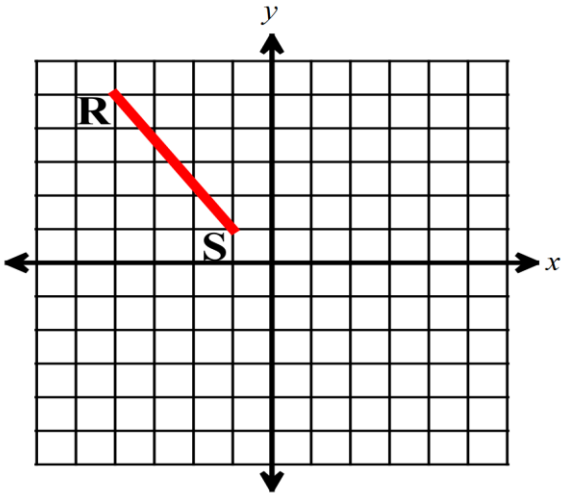
D. A translation by the rule $(x, y) \rightarrow (x, y - 9)$, and then a 180° clockwise rotation about the origin.

Find the following after the composition of transformations. Label your new points in the graph.

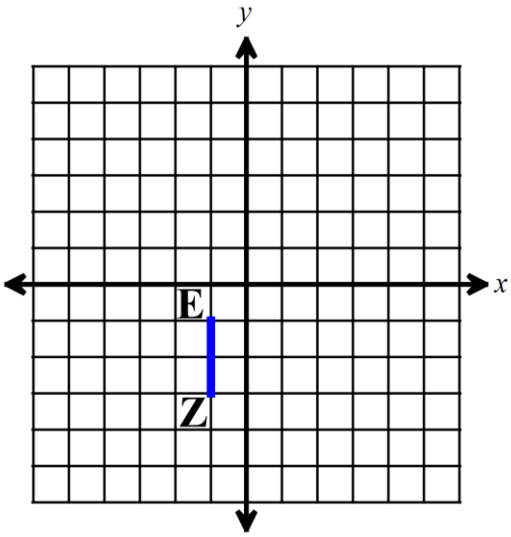
3. $Reflection\ over\ the\ x - axis$
$90°\ clockwise\ rotation\ about\ the\ origin$



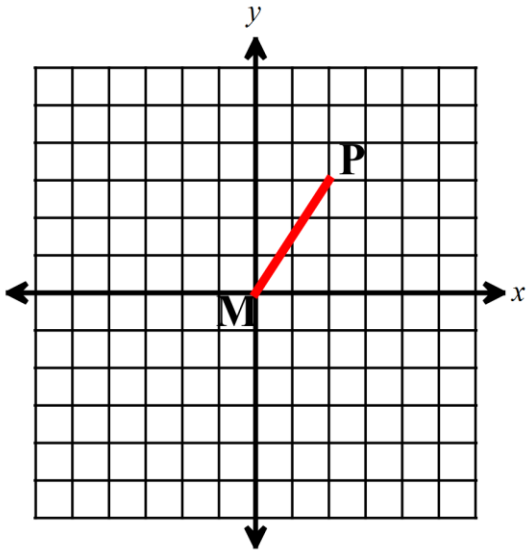
4. $(x, y) \rightarrow (x + 3, y - 1)$
$180°\ rotation\ around\ the\ orgin$



5. $(x, y) \rightarrow (x + 2, y + 2)$
$Reflected\ over\ the\ line\ y = x$

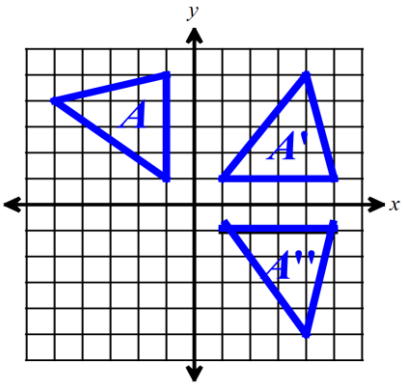


6. $Reflection\ over\ the\ y - axis$
$270°\ clockwise\ rotation\ about\ (0,0)$



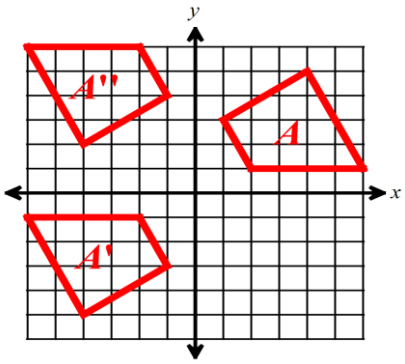
Describe the two transformation that maps A onto A''.

6.



i. _____ **ii.** _____

7.



i. _____ **ii.** _____