

LEVEL: EMERGING

1) Determine the coordinates of point P' after the indicated glide reflection.

a) $P(-5,9)$ is translated -4 units horizontally and reflected across the x -axis.

P' : _____

b) $P(-1,-9)$ is translated -7 units horizontally and reflected across the y -axis.

P' : _____

c) $P(1,-1)$ is translated -10 units vertically and reflected across the y -axis.

P' : _____

d) $P(8,-2)$ is translated 8 units vertically and reflected across the x -axis.

P' : _____

e) $P(-3,1)$ is translated 4 units vertically and reflected across the x -axis.

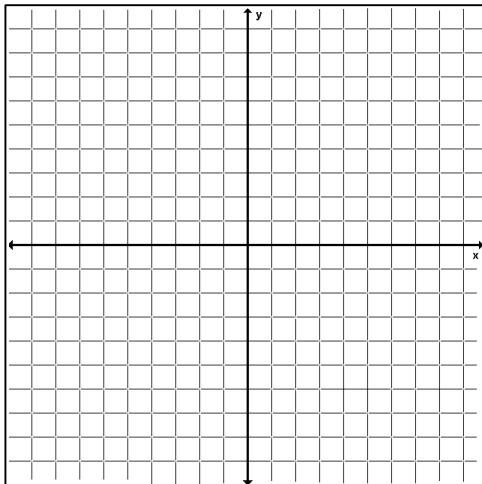
P' : _____

f) $P(2,5)$ is translated 2 units horizontally and reflected across the x -axis.

P' : _____

LEVEL: PROFICIENT

2) Line segment \overline{AB} has the coordinates of $A(5,2)$ and $B(1,-4)$. The line segment is first reflected over the y -axis. Then the line segment is rotated 90° clockwise about the origin. Find the coordinates of B'' . Then add the coordinates.

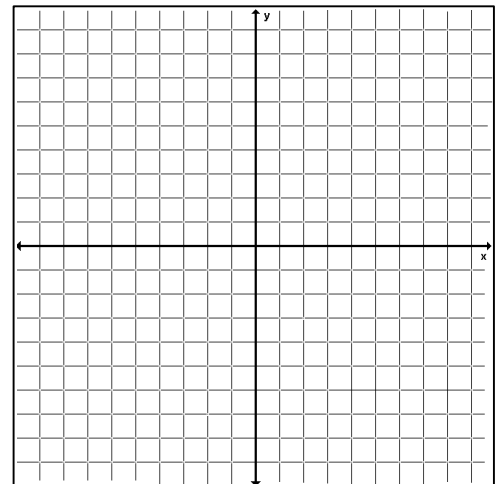


x-coordinate: _____

y-coordinate: _____

Sum: _____

3) $\triangle MNO$ has vertices $M(-3,5)$, $N(6,3)$, and $O(3,7)$. The triangle is translated by the rule $(x, y) \rightarrow (x - 3, y - 1)$. Then it is reflected over the x -axis. Find the coordinates of M'' . Then add the coordinates.

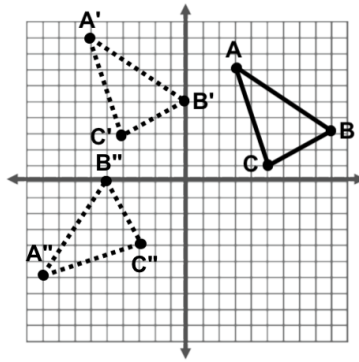


x-coordinate: _____

y-coordinate: _____

Sum: _____

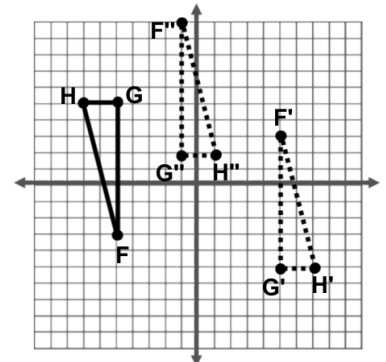
4) Write a rule for the given composition of transformations.



Transformation #1:

Transformation #2:

5) Write a rule for the given composition of transformations.



Transformation #1:

Transformation #2:

6) Line segment \overline{XY} has the coordinates of $X(-11, 0)$ and $Y(-4, -5)$. The line segment is first translated up 3 units and right 6 units. Then the line segment is rotated 270° clockwise. Find the coordinates of Y'' . Then add the coordinates.

x-coordinate: _____ y-coordinate: _____

sum: _____

7) Line segment \overline{AB} has the coordinates of $A(-3, -9)$ and $B(2, -5)$. The line segment is first rotated 180° counter-clockwise about the origin. Then the line segment is reflected over the line $x = -1$. Find the coordinates of A'' . Then add the coordinates.

x-coordinate: _____ y-coordinate: _____

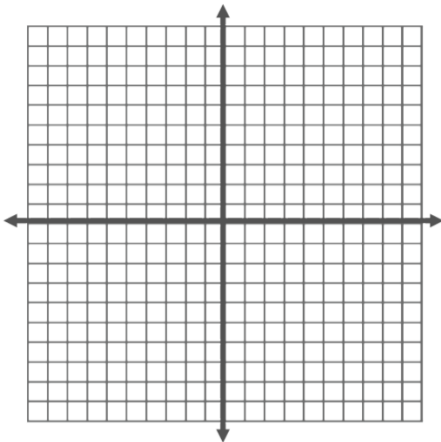
sum: _____

LEVEL: MASTERY

8) The vertices of $\triangle ABC$ are $A(-1, -6)$, $B(-4, -1)$, and $C(-5, -8)$. Find the image of $\triangle ABC$ after the given transformations.

First: Reflect over the y-axis.

Second: Rotation 180° about the point $(2, 1)$.



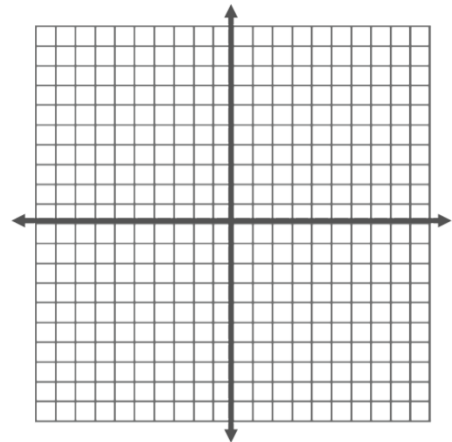
A' () B' () C' ()

A'' () B'' () C'' ()

9) The vertices of $\triangle ABC$ are $A(5, 9)$, $B(3, 4)$, and $C(1, 9)$. Find the image of $\triangle ABC$ after the given transformations.

First: Translate $(x, y) \rightarrow (x - 4, y - 5)$

Second: Reflect the translated figure over $y = x$.



A' () B' () C' ()

A'' () B'' () C'' ()