G.CO.A.5: Compositions of Transformations 2

1. The vertices of \( \triangle RST \) are \( R(-6,5) \), \( S(-7,-2) \), and \( T(1,4) \). The image of \( \triangle RST \) after the composition \( T_{-2,3} \circ r_{y=x} \) is \( \triangle R'S'T' \). State the coordinates of \( \triangle R'S'T' \). [The use of the set of axes below is optional.]

2. The coordinates of the vertices of \( \triangle ABC \) are \( A(-6,5) \), \( B(-4,8) \), and \( C(1,6) \). State and label the coordinates of the vertices of \( \triangle A''B''C'' \), the image of \( \triangle ABC \) after the composition of transformations \( T_{(4,-5)} \circ r_{y-axis} \). [The use of the set of axes below is optional.]
3. The coordinates of trapezoid $ABCD$ are $A(-4,5)$, $B(1,5)$, $C(1,2)$, and $D(-6,2)$. Trapezoid $A''B''C''D''$ is the image after the composition $r_{x-\text{axis}} \circ r_{y=x}$ is performed on trapezoid $ABCD$. State the coordinates of trapezoid $A''B''C''D''$. [The use of the set of axes below is optional.]

4. Quadrilateral $MATH$ has coordinates $M(-6,-3)$, $A(-1,-3)$, $T(-2,-1)$, and $H(-4,-1)$. The image of quadrilateral $MATH$ after the composition $r_{x-\text{axis}} \circ T_{7,5}$ is quadrilateral $M''A''T''H''$. State and label the coordinates of $M''A''T''H''$. [The use of the set of axes below is optional.]
5 Quadrilateral $HYPE$ has vertices $H(2,3)$, $Y(1,7)$, $P(-2,7)$, and $E(-2,4)$. State and label the coordinates of the vertices of $H''Y''P''E''$ after the composition of transformations $r_{x-axis} \circ T_{5,-3}$. [The use of the set of axes below is optional.]

6 The coordinates of the vertices of parallelogram $ABCD$ are $A(-2,2)$, $B(3,5)$, $C(4,2)$, and $D(-1,-1)$. State the coordinates of the vertices of parallelogram $A''B''C''D''$ that result from the transformation $r_{y-axis} \circ T_{2,-3}$. [The use of the set of axes below is optional.]

7 In the diagram below, $\triangle ABC$ has coordinates $A(1,1)$, $B(4,1)$, and $C(4,5)$. Graph and label $\triangle A''B''C''$, the image of $\triangle ABC$ after the translation five units to the right and two units up followed by the reflection over the line $y = 0$. 

Name: ______________________
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Answer Section

1 ANS:

![Image](68x513 to 200x647)

REF: 081236ge

2 ANS:

![Image](68x343 to 197x473)

REF: 011436ge

3 ANS:

![Image](36x745)

$A'(5,-4), B'(5,1), C'(2,1), D'(2,-6); A''(5,4), B''(5,-1), C''(2,-1), D''(2,6)$

REF: 061236ge
4 ANS:

\[ M''(1,-2), A''(6,-2), T''(5,-4), H''(3,-4) \]

REF: 081336ge

5 ANS:

\[ H'(7,0), Y'(6,4), P'(3,4), E'(3,1) \]

\[ H''(7,0), Y''(6,-4), P''(3,-4), E''(3,-1) \]

REF: 011535ge

6 ANS:

REF: 060937ge
7 ANS:

![Graph](image)

REF: 081626geo