Name: _____

G.CO.A.5: Compositions of Transformations 1

1 What is the image of point $A(4,2)$ after the composition of transformations defined by $R_{90°} \circ r_{y=x}$?
1) $(-4,2)$
2) $(4,-2)$
3) $(-4,-2)$
4) $(2,-4)$

2 What is the image of point $(1,1)$ under $r_{x-\text{axis}} \circ R_{0.90°}$?
1) $(1,1)$
2) $(1,-1)$
3) $(-1,1)$
4) $(-1,-1)$

3 What are the coordinates of point A', the image of point $A(-4,1)$ after the composite transformation $R_{90°} \circ r_{y=x}$ where the origin is the center of rotation?
1) $(-1,-4)$
2) $(-4,-1)$
3) $(1,4)$
4) $(4,1)$

4 The coordinates of $\triangle JRB$ are $J(1,-2)$, $R(-3,6)$, and $B(4,5)$. What are the coordinates of the vertices of its image after the transformation $T_{2,-1} \circ r_{y-\text{axis}}$?
1) $(3,1),(-1,-7),(6,-6)$
2) $(3,-3),(-1,5),(6,4)$
3) $(1,-3),(5,5),(-2,4)$
4) $(-1,-2),(3,6),(-4,5)$

5 If the coordinates of point P are $(2,-3)$, then $(R_{90} \circ R_{180})(P)$ is
1) $(-2,3)$
2) $(-2,-3)$
3) $(3,-2)$
4) $(-3,-2)$

6 Find the coordinates of $r_{y-\text{axis}} \circ r_{y=x}(A)$ if the coordinates of A are $(6,1)$.

7 Find the coordinates of the image of $(2,4)$ under the transformation $r_{y-\text{axis}} \circ T_{3,-5}$.

8 What is the image that results from this composition of transformations?
$r_{x\text{-axis}} \circ R_{0,90°}(-3,0)$

9 Find the coordinates of point $N(-1,3)$ under the composite $r_{y-\text{axis}} \circ R_{90°}$.

10 If the coordinates of A are $(2,-3)$, what are the coordinates of A', the image of A after $R_{90°} \circ r_{y-\text{axis}}(A)$?

11 If the coordinates of B are $(1,-5)$, what are the coordinates of B', the image of B after $R_{90°} \circ r_{x\text{-axis}} B$?

12 Find the image of point $A(3,-2)$ under the composition of translations $T_{2,1} \circ T_{-6,-4}$.

13 Write a single translation that is equivalent to $T_{3,-1}$ followed by $T_{-5,5}$.

G.CO.A.5: Compositions of Transformations 1
Answer Section

1 ANS: 1
$A'(2,4)$

REF: 011026ge

2 ANS: 4
After the rotation, the coordinates are (-1,1). After the reflection, the coordinates are (-1,-1).

REF: 080413b

3 ANS: 4
After the reflection, the coordinates of point *A* are (1,-4). After the rotation, the coordinates of point *A′* are (4,1).

REF: 010618b

4 ANS: 3
After the reflection, the coordinates are $J'(-1,-2)$, $R'(3,6)$ and $B'(-4,5)$.
After the translation, the coordinates are $J''(1,-3)$, $R''(5,5)$ and $B''(-2,4)$.

REF: 080715b

5 ANS: 4 REF: 010028siii

6 ANS:
$(-1,6)$

REF: 088611siii

7 ANS:
$(-5,-1)$

REF: 089340siii

8 ANS:
$(0,3)$

REF: 069514siii

9 ANS:
$(3,-1)$

REF: 019613siii

10 ANS:
$(3,-2)$

REF: 089714siii

11 ANS:
$(-5,1)$

REF: 010112siii

12 ANS:
$(-1,-5)$

REF: 060307siii

13 ANS:
$T_{-2,4}$

REF: 019816siii