Name: _____

G.SRT.A.2: Compositions of Transformations 1b

1 The point $(3,-2)$ is rotated 90º about the origin and then dilated by a scale factor of 4. What are the coordinates of the resulting image?

2 If the coordinates of P are $(-2,7)$, what are the coordinates of $(D_2 \circ r_{y=x})(P)$?

3 If the coordinates of point A are $(-2,3)$, what is the image of A under $r_{y-\text{axis}} \circ D_3$?

4 If point A has coordinates $(-3,4)$, what are the coordinates of A', the image of A under $r_{y=\text{axis}} \circ D_2$?

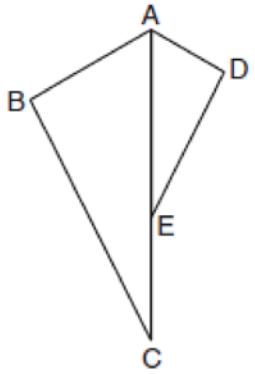
5 Find the coordinates of the image of $(-3,-4)$ under the transformation $D_2 \circ R_{90°}$.

6 The endpoints of $\overline{AB}$ are $A(3,2)$ and $B(7,1)$. If $\overline{A''B''}$ is the result of the transformation of $\overline{AB}$ under $D_2 \circ T_{-4,3}$ what are the coordinates of A'' and B''?

7 The coordinates of $\triangle ABC$ are $A(1,1)$, $B(2,3)$, and $C(3,1)$. If $\triangle A'B'C'$ is the result of the transformation $D_2 \circ r_{y-\text{axis}}$, then $\triangle A'B'C'$ is

1) similar to $\triangle ABC$
2) congruent to $\triangle ABC$
3) a right triangle
4) an equilateral triangle

8 In the diagram below, $\triangle ADE$ is the image of $\triangle ABC$ after a reflection over the line AC followed by a dilation of scale factor $\frac{AE}{AC}$ centered at point A.



Which statement must be true?

1) $m\angle BAC \cong m\angle AED$
2) $m\angle ABC \cong m\angle ADE$
3) $m\angle DAE \cong \frac{1}{2} m\angle BAC$
4) $m\angle ACB \cong \frac{1}{2} m\angle DAB$

9 Triangle $A'B'C'$ is the image of $\triangle ABC$ after a dilation followed by a translation. Which statement(s) would always be true with respect to this sequence of transformations?

I. $\triangle ABC \cong \triangle A'B'C'$
II. $\triangle ABC \sim \triangle A'B'C'$
III. $\overline{AB} \parallel \overline{A'B'}$
IV. $AA' = BB'$

G.SRT.A.2: Compositions of Transformations 1b
Answer Section

1 ANS:
$(8,12)$
$(3,-2) \rightarrow (2,3) \rightarrow (8,12)$

REF: 011126ge

2 ANS:
$(14,-4)$

REF: 019723siii

3 ANS:
$(6,9)$
After the dilation, the coordinates are $(-6,9)$. After the reflection, the coordinates are $(6,9)$.

REF: 010520b

4 ANS:
$(6,8)$

REF: 080010siii

5 ANS:
$(8,-6)$

REF: 089340siii

6 ANS:
$A''(-2,10)$ and $B''(6,8)$
After the translation, the coordinates are $A'(-1,5)$ and $B'(3,4)$. After the dilation, the coordinates are $A''(-2,10)$ and $B''(6,8)$.

REF: fall0823ge

7 ANS: 1 REF: 011002b

8 ANS: 2 REF: 011702geo

9 ANS:
II, only
NYSED accepts either (1) or (3) as a correct answer. Statement III is not true if *A, B, A'* and *B'* are collinear.

REF: 061714geo