

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

- 1 The point $(3, -2)$ is rotated 90° about the origin and then dilated by a scale factor of 4. What are the coordinates of the resulting image?
 - 1) $(-12, 8)$
 - 2) $(12, -8)$
 - 3) $(8, 12)$
 - 4) $(-8, -12)$

- 2 If the coordinates of P are $(-2, 7)$, what are the coordinates of $(D_2 \circ r_{y=x})(P)$?
 - 1) $(4, -14)$
 - 2) $(-14, 4)$
 - 3) $(-4, 14)$
 - 4) $(14, -4)$

- 3 If the coordinates of point A are $(-2, 3)$, what is the image of A under $r_{y\text{-axis}} \circ D_3$?
 - 1) $(-6, -9)$
 - 2) $(9, -6)$
 - 3) $(5, 6)$
 - 4) $(6, 9)$

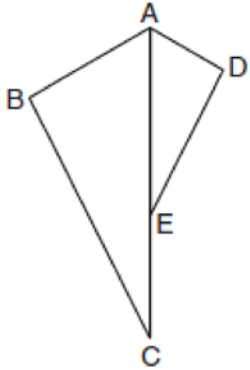
- 4 If point A has coordinates $(-3, 4)$, what are the coordinates of A' , the image of A under $r_{y\text{-axis}} \circ D_2$?
 - 1) $(3, 4)$
 - 2) $(-3, -4)$
 - 3) $(3, -4)$
 - 4) $(-3, 4)$

- 5 Find the coordinates of the image of $(-3, -4)$ under the transformation $D_2 \circ R_{90^\circ}$.
 - 1) $(-4, -3)$
 - 2) $(3, 4)$
 - 3) $(4, 3)$
 - 4) $(-3, -4)$

- 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'' ?
 - 1) $A''(-2, 10)$ and $B''(6, 8)$
 - 2) $A''(-1, 5)$ and $B''(3, 4)$
 - 3) $A''(2, 7)$ and $B''(10, 5)$
 - 4) $A''(14, -2)$ and $B''(22, -4)$

- 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. $AA' = BB'$
- 1) II, only
 - 2) I and II
 - 3) II and III
 - 4) II, III, and IV

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Answer Section

1 ANS: 3

 $(3,-2) \rightarrow (2,3) \rightarrow (8,12)$

REF: 011126ge

2 ANS: 4 REF: 019723siii

3 ANS: 4

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: 1

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: 1

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