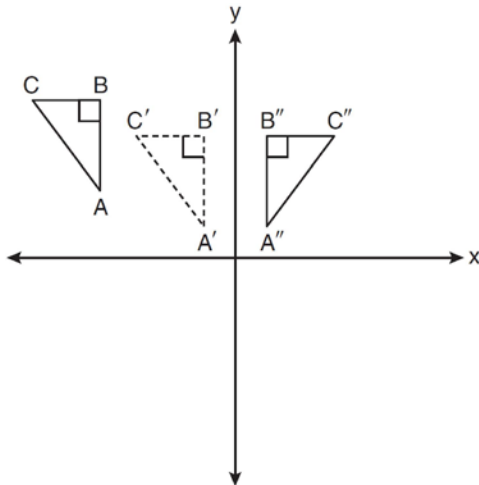


G.CO.A.5: Compositions of Transformations 4

- 1 Which transformation is equivalent to the composite line reflections $r_{y\text{-axis}} \circ r_{y=x}(\overline{AB})$?
- 1) a rotation
 - 2) a dilation
 - 3) a translation
 - 4) a glide reflection

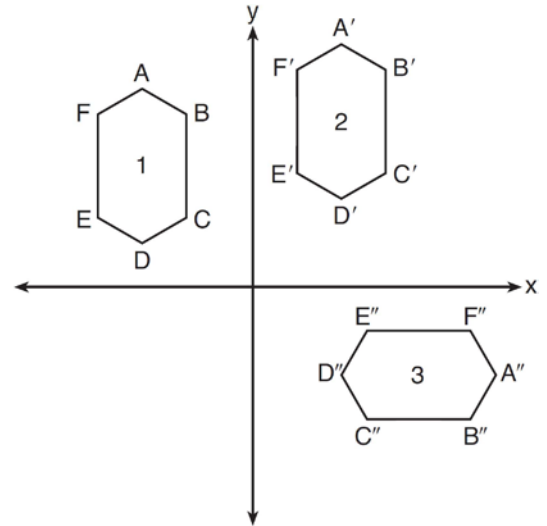
- 2 In the diagram below, $\triangle A'B'C'$ is a transformation of $\triangle ABC$, and $\triangle A''B''C''$ is a transformation of $\triangle A'B'C'$.



The composite transformation of $\triangle ABC$ to $\triangle A''B''C''$ is an example of a

- 1) reflection followed by a rotation
- 2) reflection followed by a translation
- 3) translation followed by a rotation
- 4) translation followed by a reflection

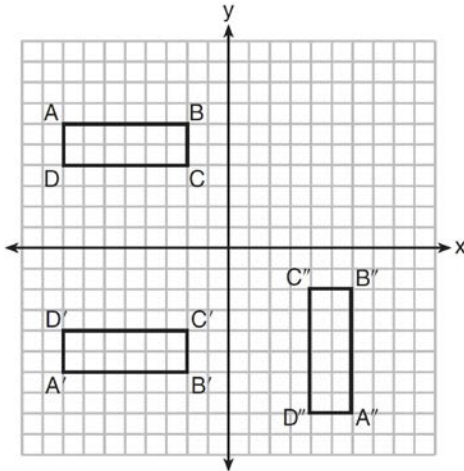
- 3 In the diagram below, congruent figures 1, 2, and 3 are drawn.



Which sequence of transformations maps figure 1 onto figure 2 and then figure 2 onto figure 3?

- 1) a reflection followed by a translation
- 2) a rotation followed by a translation
- 3) a translation followed by a reflection
- 4) a translation followed by a rotation

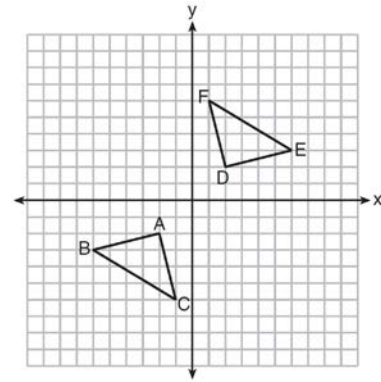
- 4 A sequence of transformations maps rectangle $ABCD$ onto rectangle $A''B''C''D''$, as shown in the diagram below.



Which sequence of transformations maps $ABCD$ onto $A'B'C'D'$ and then maps $A'B'C'D'$ onto $A''B''C''D''$?

- 1) a reflection followed by a rotation
- 2) a reflection followed by a translation
- 3) a translation followed by a rotation
- 4) a translation followed by a reflection

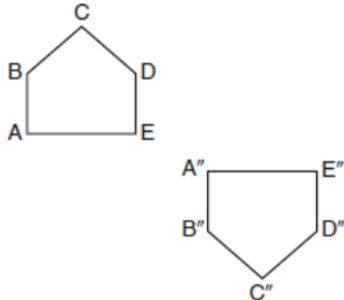
- 5 Triangle ABC and triangle DEF are graphed on the set of axes below.



Which sequence of transformations maps triangle ABC onto triangle DEF ?

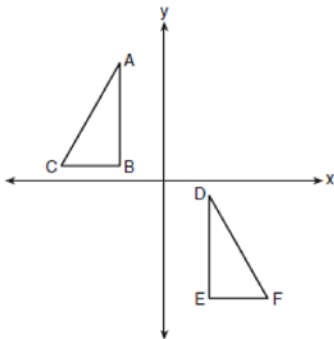
- 1) a reflection over the x -axis followed by a reflection over the y -axis
- 2) a 180° rotation about the origin followed by a reflection over the line $y = x$
- 3) a 90° clockwise rotation about the origin followed by a reflection over the y -axis
- 4) a translation 8 units to the right and 1 unit up followed by a 90° counterclockwise rotation about the origin

- 6 Identify which sequence of transformations could map pentagon $ABCDE$ onto pentagon $A''B''C''D''E''$, as shown below.



- 1) dilation followed by a rotation
- 2) translation followed by a rotation
- 3) line reflection followed by a translation
- 4) line reflection followed by a line reflection

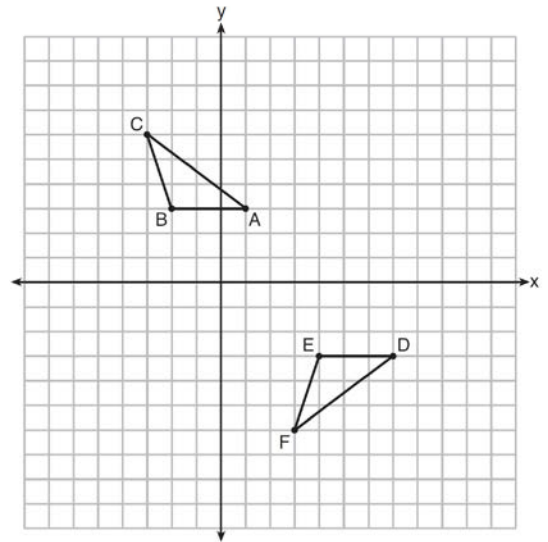
- 7 In the diagram below, $\triangle ABC \cong \triangle DEF$.



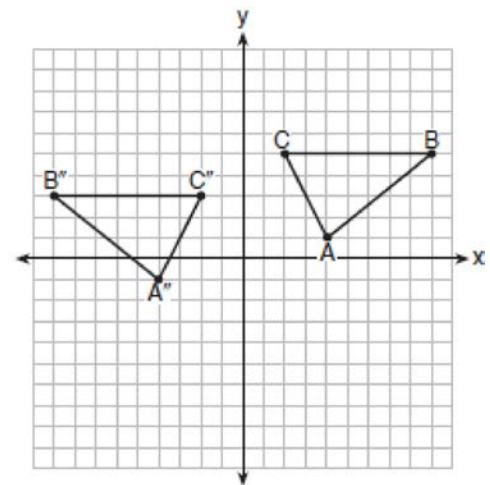
Which sequence of transformations maps $\triangle ABC$ onto $\triangle DEF$?

- 1) a reflection over the x -axis followed by a translation
- 2) a reflection over the y -axis followed by a translation
- 3) a rotation of 180° about the origin followed by a translation
- 4) a counterclockwise rotation of 90° about the origin followed by a translation

- 8 Describe a sequence of transformations that will map $\triangle ABC$ onto $\triangle DEF$ as shown below.

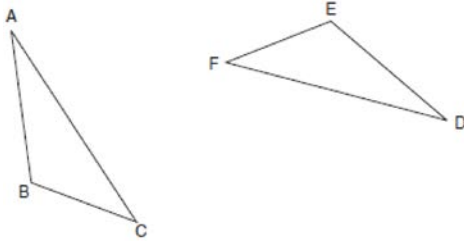


- 9 The graph below shows $\triangle ABC$ and its image, $\triangle A''B''C''$.



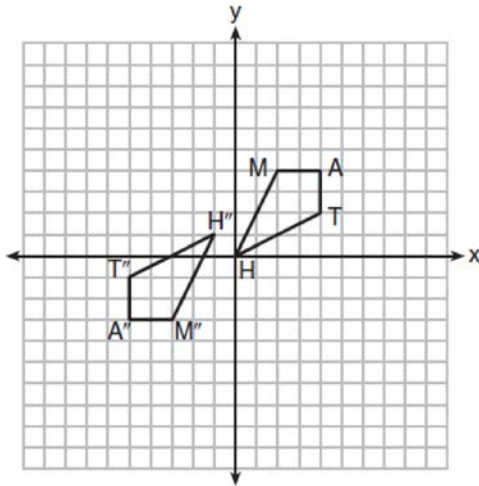
Describe a sequence of rigid motions which would map $\triangle ABC$ onto $\triangle A''B''C''$.

10 Triangle ABC and triangle DEF are drawn below.



If $\overline{AB} \cong \overline{DE}$, $\overline{AC} \cong \overline{DF}$, and $\angle A \cong \angle D$, write a sequence of transformations that maps triangle ABC onto triangle DEF .

11 Quadrilateral $MATH$ and its image $M''A''T''H''$ are graphed on the set of axes below.



Describe a sequence of transformations that maps quadrilateral $MATH$ onto quadrilateral $M''A''T''H''$.

G.CO.A.5: Compositions of Transformations 4

Answer Section

1 ANS: 1 REF: 018634siii

2 ANS: 4 REF: 061103ge

3 ANS: 4 REF: 061504geo

4 ANS: 1 REF: 081507geo

5 ANS: 1 REF: 011608geo

6 ANS: 3 REF: 011710geo

7 ANS: 2 REF: 061701geo

8 ANS:

$$T_{6,0} \circ r_{x\text{-axis}}$$

REF: 061625geo

9 ANS:

$$T_{0,-2} \circ r_{y\text{-axis}}$$

REF: 011726geo

10 ANS:

Rotate $\triangle ABC$ clockwise about point C until $\overline{DF} \parallel \overline{AC}$. Translate $\triangle ABC$ along \overline{CF} so that C maps onto F .

REF: 061730geo

11 ANS:

$$R_{180^\circ} \text{ about } \left(-\frac{1}{2}, \frac{1}{2} \right)$$

REF: 081727geo