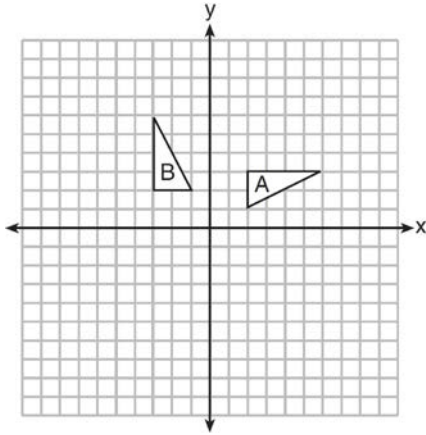
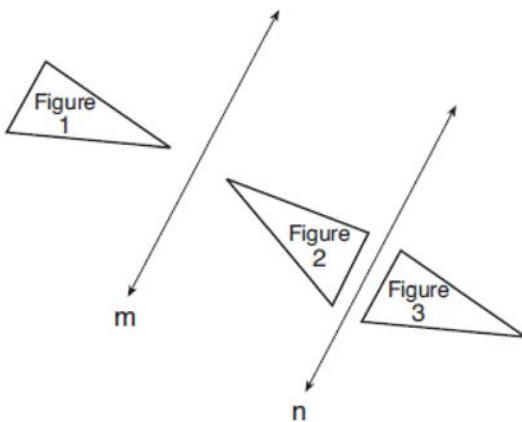


G.CO.A.2: Identifying Transformations 1

- 1 In the diagram below, which single transformation was used to map triangle A onto triangle B ?



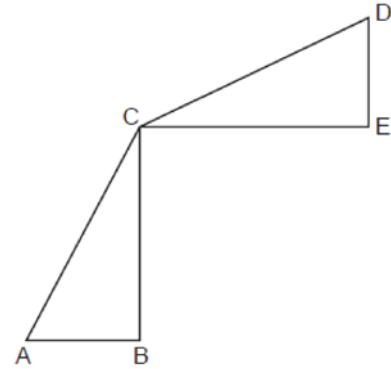
- 1) line reflection
 - 2) rotation
 - 3) dilation
 - 4) translation
- 2 In the diagram below, line m is parallel to line n . Figure 2 is the image of Figure 1 after a reflection over line m . Figure 3 is the image of Figure 2 after a reflection over line n .



Which single transformation would carry Figure 1 onto Figure 3?

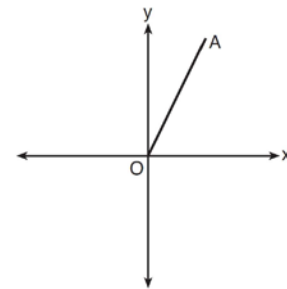
- 1) a dilation
- 2) a rotation
- 3) a reflection
- 4) a translation

- 3 In the diagram below, $\triangle ABC \cong \triangle DEC$.



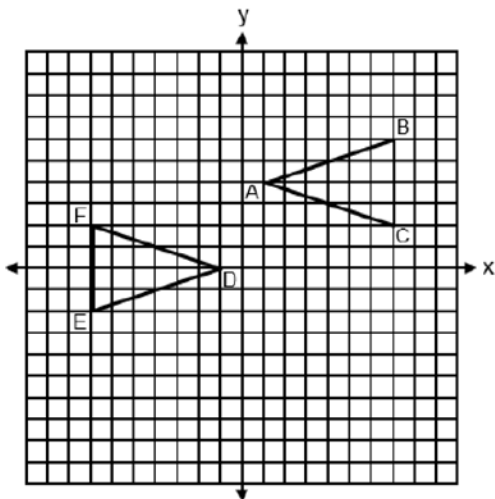
Which transformation will map $\triangle ABC$ onto $\triangle DEC$?

- 1) a rotation
 - 2) a line reflection
 - 3) a translation followed by a dilation
 - 4) a line reflection followed by a second line reflection
- 4 Which transformation of \overline{OA} would result in an image parallel to \overline{OA} ?



- 1) a translation of two units down
- 2) a reflection over the x -axis
- 3) a reflection over the y -axis
- 4) a clockwise rotation of 90° about the origin

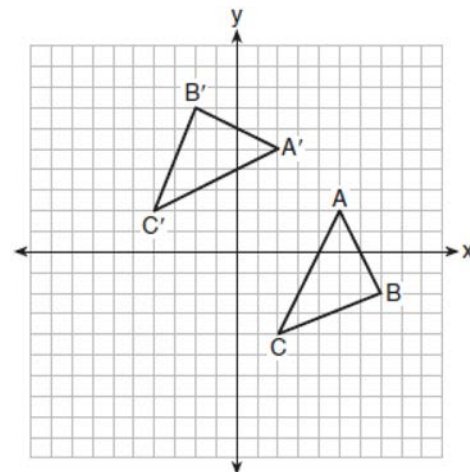
- 5 Triangles ABC and DEF are graphed on the set of axes below.



Which sequence of rigid motions maps $\triangle ABC$ onto $\triangle DEF$?

- 1) A reflection over $y = -x + 2$.
- 2) A point reflection through $(0, 2)$.
- 3) A translation 2 units left followed by a reflection over the x -axis.
- 4) A translation 4 units down followed by a reflection over the y -axis.

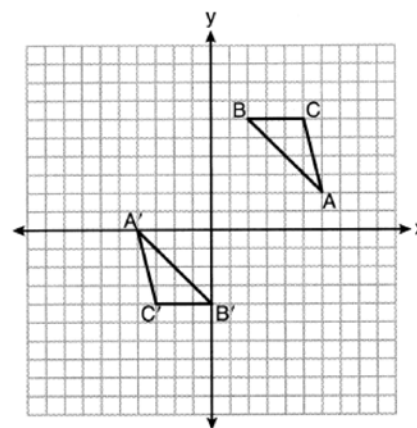
- 6 The graph below shows two congruent triangles, ABC and $A'B'C'$.



Which rigid motion would map $\triangle ABC$ onto $\triangle A'B'C'$?

- 1) a rotation of 90 degrees counterclockwise about the origin
- 2) a translation of three units to the left and three units up
- 3) a rotation of 180 degrees about the origin
- 4) a reflection over the line $y = x$

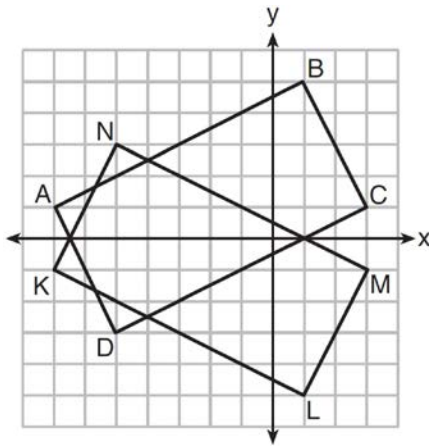
- 7 On the set of axes below, $\triangle ABC \cong \triangle A'B'C'$.



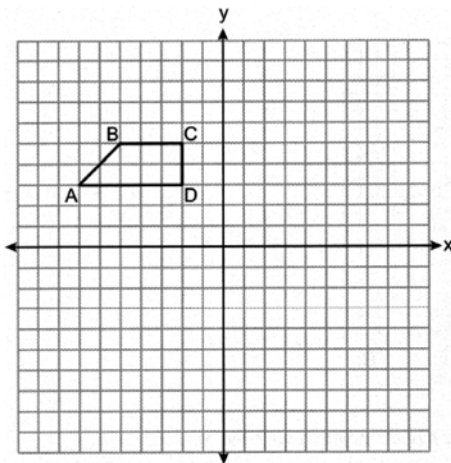
Triangle ABC maps onto $\triangle A'B'C'$ after a

- 1) reflection over the line $y = -x$
- 2) reflection over the line $y = -x + 2$
- 3) rotation of 180° centered at $(1, 1)$
- 4) rotation of 180° centered at the origin

- 8 On the set of axes below, rectangle $ABCD$ can be proven congruent to rectangle $KLMN$ using which transformation?



- 1) rotation
 - 2) translation
 - 3) reflection over the x -axis
 - 4) reflection over the y -axis
- 9 Trapezoid $ABCD$ is graphed on the set of axes below.

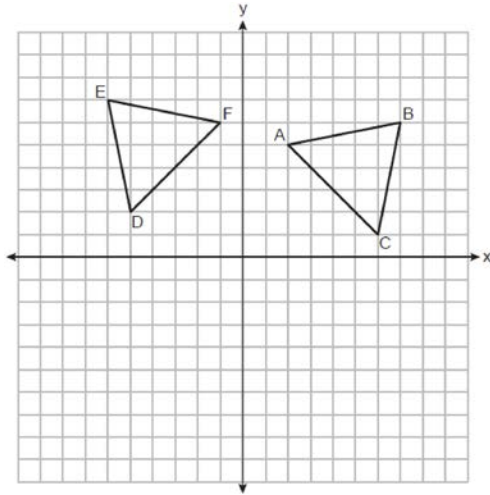


Which transformation would map point A onto $A'(3, -7)$?

- 1) reflection over $y = x$
- 2) reflection over the y -axis
- 3) rotation of 180° about $(0, 0)$
- 4) rotation of 90° counterclockwise about $(0, 0)$

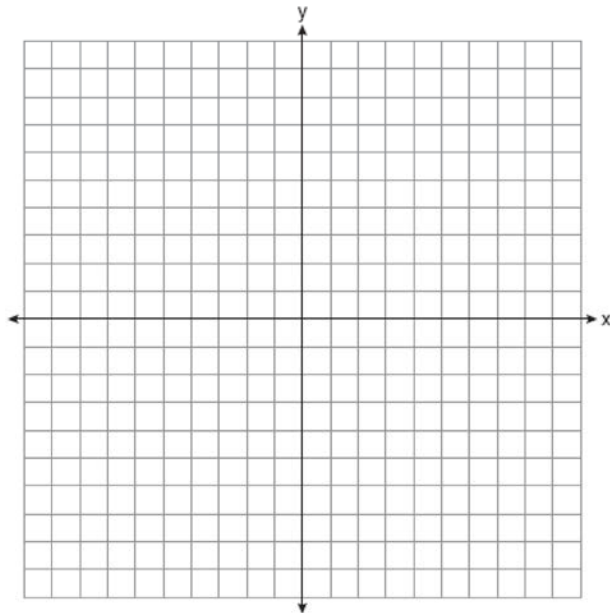
- 10 Which transformation would *not* always produce an image that would be congruent to the original figure?
 - 1) translation
 - 2) dilation
 - 3) rotation
 - 4) reflection
- 11 The vertices of $\triangle JKL$ have coordinates $J(5, 1)$, $K(-2, -3)$, and $L(-4, 1)$. Under which transformation is the image $\triangle J'K'L'$ *not* congruent to $\triangle JKL$?
 - 1) a translation of two units to the right and two units down
 - 2) a counterclockwise rotation of 180° around the origin
 - 3) a reflection over the x -axis
 - 4) a dilation with a scale factor of 2 and centered at the origin
- 12 If $\triangle A'B'C'$ is the image of $\triangle ABC$, under which transformation will the triangles *not* be congruent?
 - 1) reflection over the x -axis
 - 2) translation to the left 5 and down 4
 - 3) dilation centered at the origin with scale factor 2
 - 4) rotation of 270° counterclockwise about the origin
- 13 Under which transformation would $\triangle A'B'C'$, the image of $\triangle ABC$, *not* be congruent to $\triangle ABC$?
 - 1) reflection over the y -axis
 - 2) rotation of 90° clockwise about the origin
 - 3) translation of 3 units right and 2 units down
 - 4) dilation with a scale factor of 2 centered at the origin
- 14 The image of $\triangle DEF$ is $\triangle D'E'F'$. Under which transformation will the triangles *not* be congruent?
 - 1) a reflection through the origin
 - 2) a reflection over the line $y = x$
 - 3) a dilation with a scale factor of 1 centered at $(2, 3)$
 - 4) a dilation with a scale factor of $\frac{3}{2}$ centered at the origin

- 15 On the set of axes below, congruent triangles ABC and DEF are graphed.



Describe a sequence of rigid motions that maps $\triangle ABC$ onto $\triangle DEF$.

- 16 Triangle ABC has vertices at $A(-5, 2)$, $B(-4, 7)$, and $C(-2, 7)$, and triangle DEF has vertices at $D(3, 2)$, $E(2, 7)$, and $F(0, 7)$. Graph and label $\triangle ABC$ and $\triangle DEF$ on the set of axes below. Determine and state the single transformation where $\triangle DEF$ is the image of $\triangle ABC$. Use your transformation to explain why $\triangle ABC \cong \triangle DEF$.



G.CO.A.2: Identifying Transformations 1 Answer Section

- 1 ANS: 2 REF: 081513geo
 2 ANS: 4 REF: 061803geo
 3 ANS: 2 REF: 082322geo
 4 ANS: 1 REF: 061604geo
 5 ANS: 2 REF: spr2401geo
 6 ANS: 4 REF: 011803geo
 7 ANS: 3

Since orientation is preserved, a reflection has not occurred.

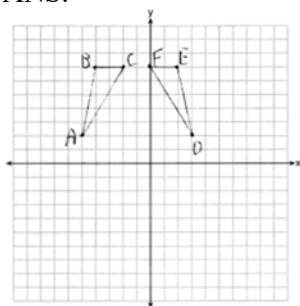
REF: 062205geo

- 8 ANS: 3 REF: 061616geo
 9 ANS: 1 REF: 082413geo
 10 ANS: 2 REF: 081602geo
 11 ANS: 4 REF: 061502geo
 12 ANS: 3 REF: 081502geo
 13 ANS: 4 REF: 011706geo
 14 ANS: 4 REF: 081702geo
 15 ANS:

Rotation of 90° counterclockwise about the origin.

REF: 012428geo

- 16 ANS:



$r_{x=-1}$ Reflections are rigid motions that preserve distance, so $\triangle ABC \cong \triangle DEF$.

REF: 061732geo