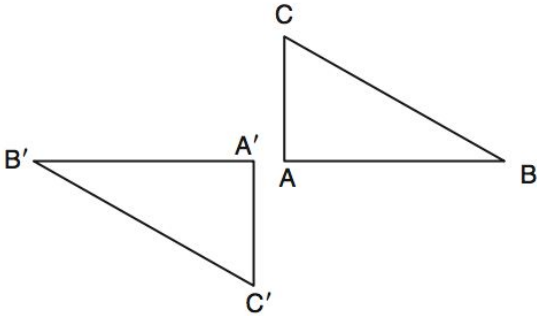


Below you will find a series of questions involving transformations (which you were introduced to at the end of 7<sup>th</sup> grade). Please answer every question the best of your ability. All assignments will be collected upon your return to school on September 6, 2018.

**Question 1**

In the diagram below, under which transformation will  $\triangle A'B'C'$  be the image of  $\triangle ABC$ ?



- (1) rotation
- (2) dilation
- (3) translation
- (4) glide reflection

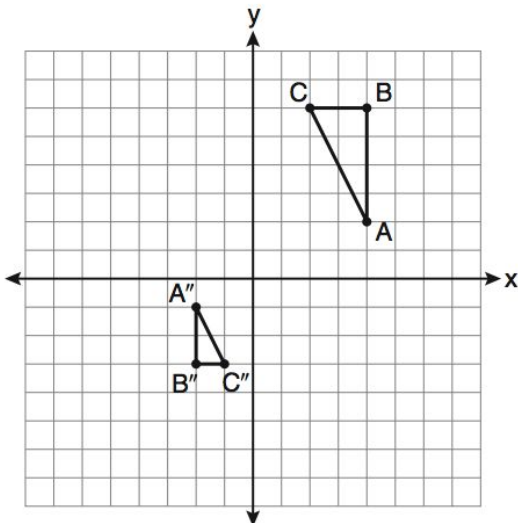
**Question 2**

Point A is located at  $(4, -7)$ . The point is reflected in the  $x$ -axis. Its image is located at

- (1)  $(-4, 7)$
- (2)  $(-4, -7)$
- (3)  $(4, 7)$
- (4)  $(7, -4)$

**Question 3**

After a composition of transformations, the coordinates  $A(4, 2)$ ,  $B(4, 6)$ , and  $C(2, 6)$  become  $A''(-2, -1)$ ,  $B''(-2, -3)$ , and  $C''(-1, -3)$ , as shown on the set of axes below.



Which composition of transformations was used?

- (1) Rotation of  $180^\circ$ , Dilation with a scale factor of 2      (2) Dilation with a scale factor  $\frac{1}{2}$ , Rotation of  $180^\circ$   
(3) Rotation of  $90^\circ$ , Dilation with a scale factor of 2      (4) Dilation with a scale factor  $\frac{1}{2}$ , Rotation of  $90^\circ$

**Question 5**

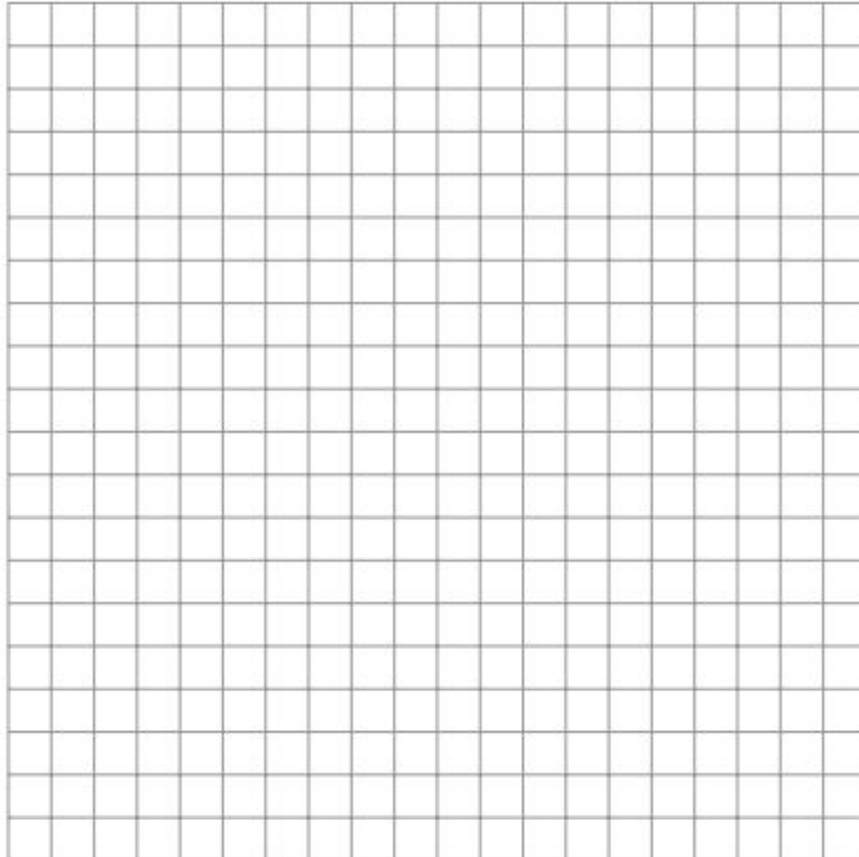
Which transformation produces a figure similar but *not* congruent to the original figure?

- (1) Translation 1 unit to the right, 3 units up      (2) Rotation  $90^\circ$   
(3) Dilation with a scale factor of  $\frac{1}{2}$       (4) Reflection over  $y=x$

**Question 6**

**\*You must create and label your x-axis and y-axis**

The coordinates of the vertices of  $\triangle ABC$  are  $A(1,3)$ ,  $B(-2,2)$ , and  $C(0,-2)$ . On the grid below, graph and label  $\triangle A''B''C''$ , the result of the composite transformation  $D_2 \circ T_{3,-2}$ . State the coordinates of  $A''$ ,  $B''$ , and  $C''$ .



**Question 7**

What is the image of the point  $(-5,2)$  under the translation 5 units to the left and 2 units up?

- (1)  $(-9,5)$  (2)  $(-2,-2)$   
(3)  $(-8,6)$  (4)  $(-15,-8)$

**Question 8**

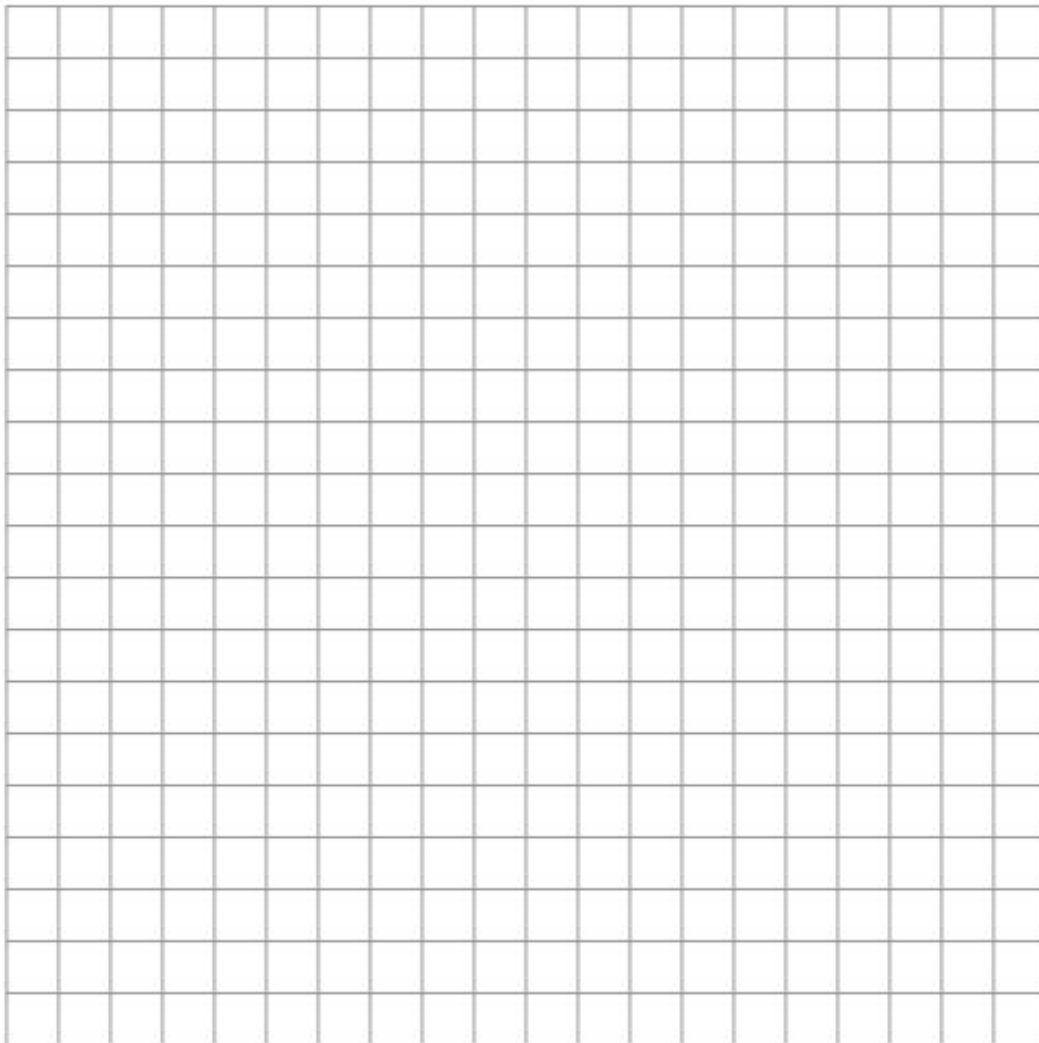
The point  $(3,-2)$  is rotated  $90^\circ$  about the origin and then dilated by a scale factor of 4. What are the coordinates of the resulting image?

- (1)  $(-12,8)$  (3)  $(8,12)$   
(2)  $(12,-8)$  (4)  $(-8,-12)$

**Question 9**

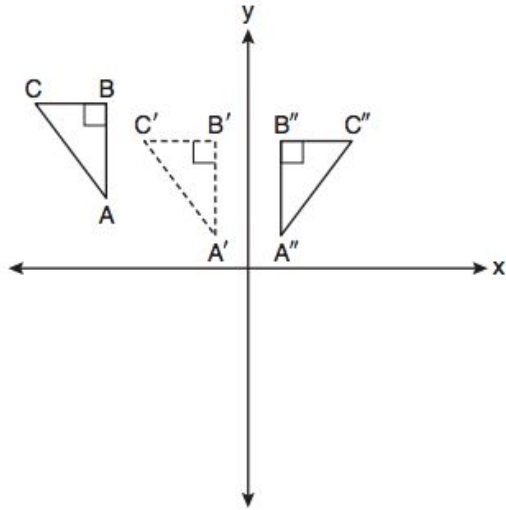
**\*You must create and label your x-axis and y-axis**

Triangle ABC has vertices  $A(-2,2)$ ,  $B(-1,-3)$ , and  $C(4,0)$ . Find the coordinates of the vertices of  $\triangle A' B' C'$ , the image of  $\triangle ABC$  after a reflection over the x-axis



### Question 10

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

### Question 11

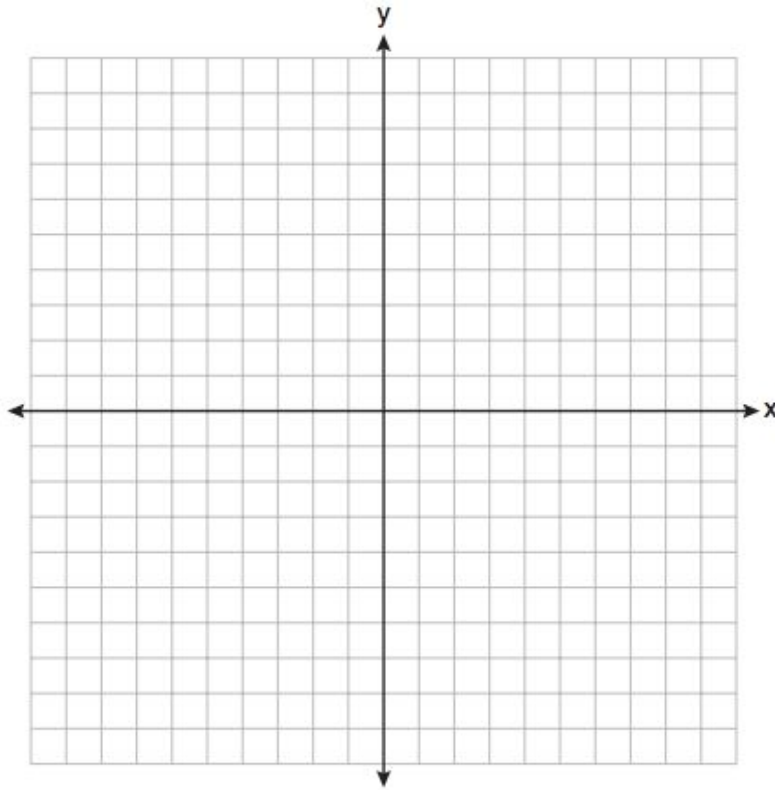
What is the image of the point  $(2, -3)$  after the transformation  $r_{y\text{-axis}}$ ?

- |                |               |
|----------------|---------------|
| (1) $(2, 3)$   | (3) $(-2, 3)$ |
| (2) $(-2, -3)$ | (4) $(-3, 2)$ |

### Question 12

The coordinates of the vertices of  $\triangle RST$  are  $R(-2, 3)$ ,  $S(4, 4)$ , and  $T(2, -2)$ . Triangle  $R'S'T'$  is the image of  $\triangle RST$  after a rotation of  $90^\circ$  about the origin.

State the coordinates of the vertices of  $\triangle R'S'T'$ .



**Question 13**

Triangle  $ABC$  has coordinates  $A(2, -2)$ ,  $B(2, 1)$ , and  $C(4, -2)$ . Triangle  $A'B'C'$  is the image of  $\triangle ABC$  with a translation 5 units to the right, 2 units down.

On the set of axes below, graph and label  $\triangle ABC$  and its image,  $\triangle A'B'C'$ .

Determine the relationship between the area of  $\triangle ABC$  and the area of  $\triangle A'B'C'$ .

